Windsor Nature Discovery graphic

***LADD CREEK**, continued from Page 2.....*

Over 20 habitat restoration and fish passage projects have been completed in the Ladd Creek watershed on public and private lands since 1994. Projects have included riparian livestock fencing and off-stream water developments, culvert replacements, draw-bottom road relocations, riparian planting, streambank stabilization, historic channel relocation, and wetland reestablishment. Much work has been done on ODFW's Ladd Marsh Wildlife Management Area, not far downstream of the project.

Many agencies and landowners have been involved in projects in the Ladd Creek watershed. They include the Grande Ronde Model Watershed, ODFW, Oregon Department of Forestry, U.S. Forest Service, Union County Soil and Water Conservation District, Forest Capital LLC, the City of La Grande, Ducks Unlimited, the Natural Resource Conservation Service, and many private landowners.

Restoration of fish passage at the Glory Hole is a very important component to restoring the steelhead run in the Ladd Creek watershed. The project has been on the radar screen for several years. Many of the projects, upstream of the site, were done knowing that one day the barrier would be removed and connectivity restored to the upper watershed. It appears that after 35 years, the day is getting closer where steelhead will once again return to the headwaters of Ladd Creek. ■

From the Archives

On August 10, 1906, the La Grande Evening Observer reported in an article entitled "Fish Killers Fined," that three men were arrested in Elgin for dynamiting the Wallowa River to catch fish. They plead guilty and were fined $50 each plus costs. The newspaper cautioned certain folks in the La Grande area "to mend their ways or suffer a similar fate."

***PEOPLE**, continued from Page 6.....*

Chairman Mike Hayward and Vice Chair Steve McClure, both county commissioners, joined in the procession through their respective counties and helped the folks from BPA understand the value of being in step with local government. Pat Wortman and Joe McCormack, two more of our board members – representing private landowners and the Nez Perce Tribe, respectively – shared thoughts and lunch with us.

Along the way, we were met by Bill Howell, one of our charter board members who is unbelievably 80 years old and still as involved as any one person has the time to be. Two of our federal partners – the U.S. Fish and Wildlife Service, represented by Gary Miller, and NOAA Fisheries, represented by Spencer Hovekamp – demonstrated the multiple layers of partnerships that are so essential. (I believe in my heart it was coincidental that their arrival matched that of the ice cream bars.) Landowners Bud Stone and Sherman Hawkins were kind enough to allow us access to their land even in their absence.

On that sunny August day, we set out to show some really important people some really important projects. What we really showed them were some very important people. More than one of the BPA officials asked me, in so many words, "Why does this work here?" or "How do you guys make this happen?" The answer is obvious. It's the people. ■

Grande Ronde Model Watershed

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Ripples in the **Grande Ronde**

Fall 2007

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

Steelhead, highways *and* elevator shafts

The challenge to make upper Ladd Creek accessible to steelhead again

by Lyle Kuchenbecker, GRMW

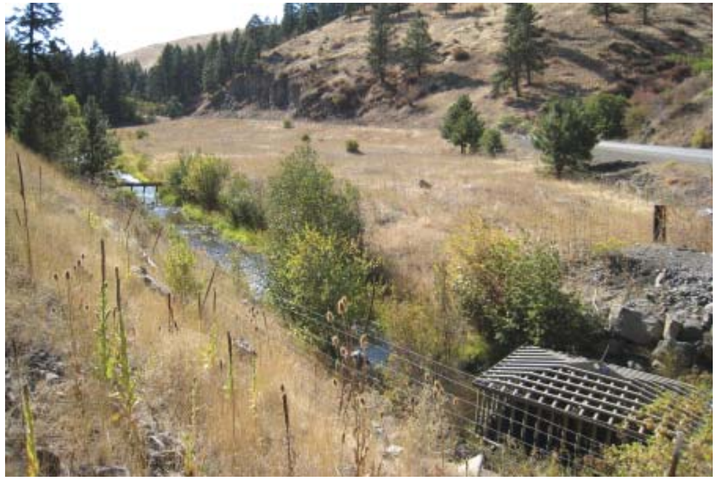
Ladd Canyon is a challenge for travelers today, as it was for pioneers making the journey on the Oregon Trail years ago. It is a challenging place to construct a road and to travel a road, especially in the winter. In the 1930s, a county road traversed through the canyon. A two-lane state highway was constructed through the canyon in 1952. Interstate 84 was completed in 1972, vastly improving travel through the canyon, but also creating a very formidable obstacle for fish.

The interstate construction generated huge quantities of fill from the large cut, some of which was placed just below the cut in what now appears to be a meadow adjacent to the Ladd Canyon road, just after exiting the interstate. Twenty feet of fill above the elevation of the creek necessitated the construction of a vertical shaft through which Ladd Creek drops down to the creek bed elevation. Since 1972 the "elevator shaft" has blocked upstream passage of steelhead and all other resident fish. The elevator shaft is referred to by local restoration practitioners as the "Glory Hole."

Fish passage standards in the 1970s were not what they are today. At the time the interstate was constructed, the emphasis was on providing a safe and efficient transportation network. Snake River summer steelhead, which spawned and reared in Ladd Creek, were not listed under the Endangered Species Act until 1998. Road, bridge and culvert construction today, as well as repairs to existing bridges and culverts, require strict adherence to current fish passage standards. Fish passage standards are applicable to all native species, but are especially important when there are ESA-listed species.

Ladd Creek is a major tributary to Catherine Creek and likely had a substantial historical steelhead run. Since most of the steelhead spawning reaches in Ladd Creek and its tributaries are above I-84, the blockage likely has been a major factor in the near elimination of the Ladd Creek steelhead run. The elevator shaft eliminated steelhead access to approximately 12 miles of upstream habitat in the system. The Glory Hole is the second highest passage priority statewide for the Oregon Department of Fish and Wildlife.

Things are about to change. The Oregon Department of Transportation is planning to take corrective action. The project will be a challenge, both from an



Right: Ladd Creek flows down through the area where approximately 20 feet of fill was deposited over the original Ladd Creek channel in 1972. Water drops into the "elevator shaft" at the lower end. Forest Road 43 passes along the right side of the fill area. Top right: Interstate 84 enters the narrow confines of Ladd Canyon approximately seven miles south of La Grande.

engineering perspective and fiscally. ODOT engineers have been working with ODFW, the National Marine Fisheries Service and the U.S. Fish and Wildlife Service to develop a design that meets current fish passage standards.

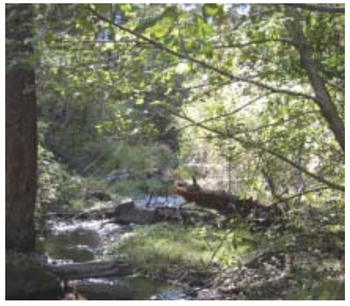
"Fish passage standards in the 1970s were not what they are today. Road, bridge and culvert construction today, as well as repairs to existing bridges and culverts, require strict adherence to current fish passage standards."

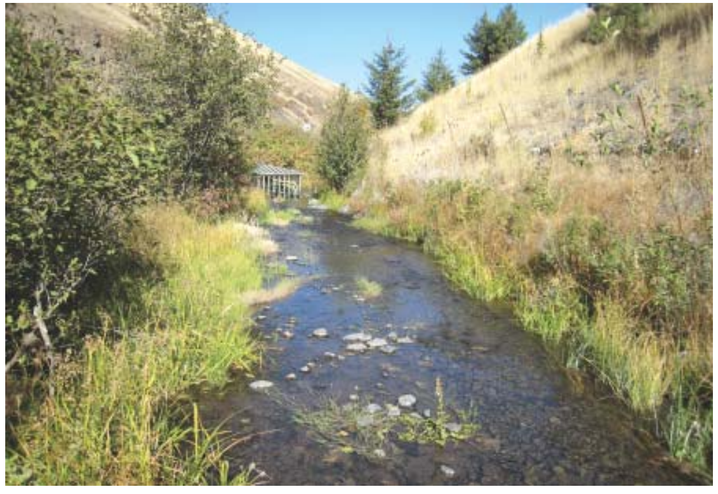
Several alternative designs have been analyzed. Those include an open channel constructed under the existing overpass, a tunnel under the interstate, a fish ladder, and a bottomless structural plate arch constructed under the Ladd Canyon road where it passes under the interstate leading to the westbound on-ramp. The open channel alternative would require construction of an overpass and relocation of the interchange to keep the road open, which is not a feasible alternative because of space limitations. Tunneling was judged to be excessively expensive, requiring very specialized engineering expertise and construction methods. The fish ladder alternative likely would have flow velocity problems as well as maintenance issues.

Clockwise: A steel trash rack prevents large debris from washing into and blocking the 20-foot vertical "elevator shaft." A concrete box culvert transports Ladd Creek streamflow under Interstate 84 from the elevator shaft at the opposite end to this outlet on the east side of the highway. Riparian habitat above the barrier, for the most part, is of good quality. It is well shaded by conifers and dense alder understory. Ladd Creek maintains year-round flow through the project site, supplied by numerous headwater springs. The stream maintains flows capable of supporting fish during low flow periods, even in the 2007 drought year. There are about 12 miles of perennial stream above the barrier.

The bottomless structural plate arch constructed under the Ladd Canyon road, in combination with alterations to the stream channel above and below the arch, is the preferred alternative. A structural plate arch is a bottomless culvert attached to concrete footings. Galvanized steel plates are bolted together to form the arch. The new structure will maintain a natural stream bottom and will span the entire channel. At this time it appears that the arch will be about 480 feet long with two obtuse bends in the upper section. Alterations to the channel will include channel realignment and relocation, and rock structural additions to stabilize the channel and create pools.

ODOT will complete the final engineering design in consultation with fish passage specialists from ODFW, NOAA and USFWS. Projects such as this require an immense amount of planning and coordination with other agencies, including formal ESA consultation with NOAA and USFWS as well as permits from the Oregon Department of State Lands and the U.S. Army Corps of Engineers. The current schedule is to complete final engineering designs, ESA consultation and permitting by 2009. Contingent on funding, ODOT would like to put construction out for bid in the fall of 2011 and begin construction in 2012.





Perhaps the greatest challenge will be the acquisition of construction funds. The vast majority of ODOT funds, by regulation, must be spent on roads and bridges. They have established a dedicated fish passage fund, which is about $3 million annually for the entire state. This project must compete with all statewide fish passage projects. Funding for this project will not be available until the federal fiscal year 2012, beginning in October 2012. The Grande Ronde Model Watershed will assist ODOT in acquiring additional funds from a variety of state and federal sources.

.....Continued on Page 8, ***LADD CREEK***

Meet the Board

Steve McClure

GRANDE RONDE MODEL WATERSHED

Steve McClure, 61, was born and raised in Union County. Steve has served as vice chairman of the Grande Ronde Model Watershed's board for the past five years. He is no stranger to public service. Steve is one of three Union County Commissioners, and has held that title for 17 years. Prior to his tenure on the commission, Steve served on various other boards, including the Elgin School Board, and the Union County Soil and Water Conservation District.

"I have always had an affinity for politics," says Steve. "I love it."

Steve is a firm believer in local government. "People discount local government more than they should," says Steve. "It is more important than they realize."

"Local government is the foundation of democracy," adds Steve, whose faith in the government is based on the efforts and beliefs of people at the local level. "The culture of democracy is fostered by local government. Democracy doesn't work elsewhere because locals don't believe in it."

Steve's passion for his community spills over into his involvement with the Grande Ronde Model Watershed. Steve was a Union County Commissioner when the GRMW was formed in 1992. He says one of the reasons the GRMW was established was to address Endangered Species Act issues in regards to salmon and steelhead trout in the basin.

"I think it's very important that we deal with ESA issues as a community," says Steve, who concedes there are lots of issues "bigger" than the community, which can't be influenced from the local level. "The impacts are community-wide," says Steve, who is referring to ESA restrictions that can affect local jobs and livelihoods in Union and Wallowa counties. Steve says the largest ESA impacts are felt on federal lands because there is so much federal land ownership in the two counties.

"Part of the impetus of the Grande Ronde Model Watershed is for the community to 'weigh-in' on these issues," says Steve. "I am pleased with the efforts in the community. The Grande Ronde Model Watershed has been very effective."

Steve was born into a farming family and grew up in Elgin. He was born on the third floor of the St. Joseph's Hospital in La Grande – the same building where he reports to work each morning. Steve graduated from Elgin High School, then spent time at Eastern Oregon University and Oregon State University. He was drafted into the army and spent a year in Vietnam before trying his hand at construction in Florida. In 1978 he returned to Union County. Today, Steve lives in La Grande with his wife, Barbara. Between the two of them, they have four adult children and four grandkids.

Fish Online!

www.grmw.org.

- Adult salmon counts at the dams
- Snake River Basin streamflows
- 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, November 27, 6:30 p.m.
  Elgin Community Center, 10th St, Elgin
- Wednesday, December 5
  Planning Session, 9 a.m. - 3 p.m.
  Ascension School Conference Building, Cove
- Tuesday, January 22 , 6:30 p.m.
  Wallowa Community Center, 2nd St, Wallowa
- Tuesday, February 26, 6:30 p.m.
  Elgin Community Center, 10th St, Elgin
- Tuesday, March 25, 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!

Reworking weirs in the upper Joseph Creek watershed

by Dana Orrick, Hydrologist, Wallowa-Whitman National Forest

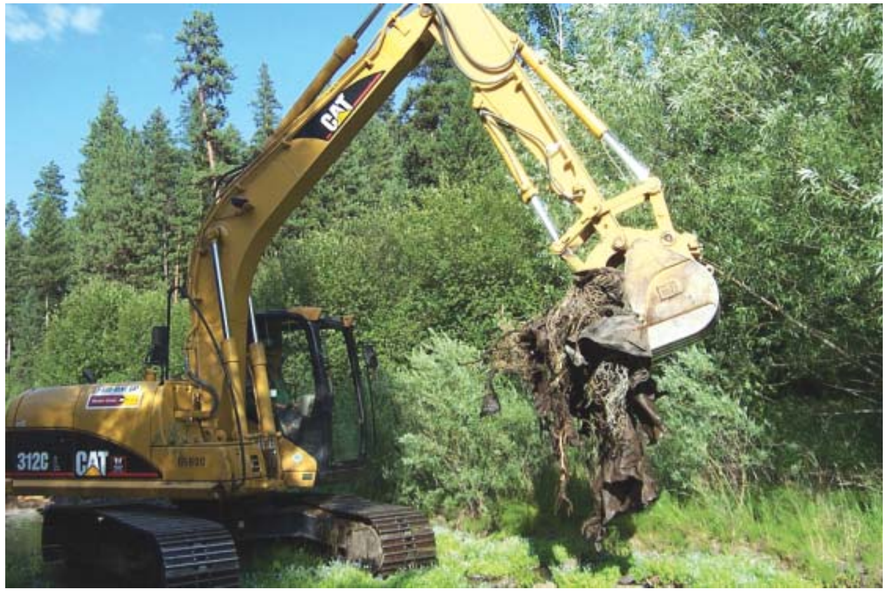
The upper Joseph Creek watershed is in the northeast corner of the Wallowa-Whitman National Forest and has recently been the focus of a communitywide effort to conduct a watershed assessment – a look at the physical and biological state of that watershed. Many streams in the upper Joseph Creek watershed contain important spawning and rearing habitat for ocean-going Snake River steelhead trout. Snake River steelhead are on the Endangered Species List as "threatened" because their population numbers are low. Because of this, it is important to provide quality spawning and rearing habitat for steelhead trout, and make sure they have access to that habitat.

The Upper Joseph Creek Watershed Assessment was completed in 2005. One of the projects identified to improve conditions for steelhead was the need to modify or remove gabion weirs and log weirs that block juvenile fish passage for most of the year.

A gabion weir is made up of several sturdy wire baskets filled with rock and placed side by side across the entire stream channel, level and perpendicular to water flow. A log weir is a log that has been placed across the entire stream channel just like a gabion weir. Both ends of the log are buried in the streambank; often there is one gabion basket placed on top of each log end to make sure it doesn't move. Plastic fabric attached to wire mesh is stapled to each weir on the upstream side and buried 1-2 feet under the streambed to keep the water from going under or through the structures.

Clockwise: Water pours over a log weir on Chesnimnus Creek, a tributary to Joseph Creek. A gabion weir spans Elk Creek, which runs dry during the late summer months. A log weir in Swamp Creek creates an excessively high jump for juvenile fish. A trackhoe removes plastic fabric, wire mesh and gabion baskets from Chesnimnus Creek. USFS photos.

Hundreds of these weirs were put into creeks in the upper Joseph Creek watershed from the mid-1970s through the 1980s. At that time, fish biologists and hydrologists thought that placing these structures into the creeks would provide fish habitat in the form of holes for the declining population of steelhead trout. They also thought that the weirs would slow the streambank loss that was occurring because of overgrazing in the stream area.

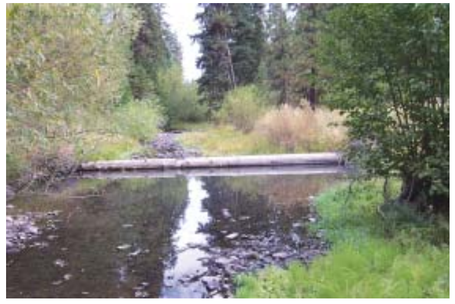


The problem with these structures is that each weir acts like a miniature dam and backs water up behind it. The action of the water pooling behind the weir causes rocks and dirt that were traveling along with the water to settle out upstream of the weir and build up the level of the streambed there. Then, because the weir is placed level, water pours over the entire structure all at once. The action of the water pouring over the weir eats away at the banks downstream, creating wide areas immediately downstream of each gabion or log weir. These two actions, pooling and pouring, create a steep waterfall drop at each weir site and a very wide channel downstream, both of which are unnatural for these meandering stream types.

A tree that would ordinarily fall into these creeks would not dam up the water like these structures do. There would be some water that might flow over the tree, and some water that would flow under it. There would typically be sneak routes for all sizes of fish and other aquatic organisms. The branches would help slow water down and help collect small pieces of wood traveling downstream. Those small pieces of wood would help collect more pieces of wood and soon a mini-log complex would form that provides good habitat for fish. It would be very unlikely for a tree to block fish passage like these weirs used to do.

So although the weirs did create holes for fish, the holes were bigger and deeper than is natural for that stream type, and instead of slowing streambank loss, they accelerated it downstream of each structure. In addition, they were usually installed too high for juvenile fish to jump. The ones that weren't too high to jump eventually became fish passage barriers from rocks rubbing on the plastic fabric. Holes in the fabric let water flow through the gabion baskets or through the rocks under the log structures and blocked fish from moving upstream or downstream during most flows.

A local contractor was hired to provide a thumbed excavator and operator to modify the weirs as directed by the U.S. Forest Service hydrologist. The excavator was used to remove the plastic fabric and rusty wire from the streambed. Each log weir was dug up and placed in the creek or angled into the creek from the bank. Some whole trees were added on top of the logs to keep them from floating downstream and to assist in trapping more wood for fish habitat. Gabion baskets were opened and the rock inside was placed into the overly wide section of the creek just downstream of the former structure. Adding rock to the eroded banks downstream will help build them back in. Empty gabion baskets, wire mesh and geotextile material were removed from the site by the contractor.



This project was a three-phase, or three-year, effort to reconfigure all of the gabion and log weirs in the upper Joseph Creek watershed to improve juvenile fish passage and stream habitat. Phase I, completed in 2005, involved modifying 39 log weirs in Chesnimnus Creek and 41 log weirs in Swamp Creek. Phase II, completed in 2006, involved modifying 25 additional log weirs in Chesnimnus Creek, 25 log weirs in Peavine Creek and 41 log weirs in Devils Run Creek. The final phase, Phase III, completed in 2007, involved modifying 96 weirs – 43 gabion and 53 log – along 6.5 miles of Elk Creek, and 52 more log structures along 1.5 miles of Chesnimnus Creek.

Modifying these weirs allows all ages of threatened Snake River steelhead trout to move up and downstream to find the best spawning and rearing habitat. Removing these weirs from being fixed across the channel eliminates yearly bank erosion downstream of each structure, which encourages the streambanks to narrow to their appropriate width, and allows natural stream processes to take over maintenance of the channel shape and pool habitat. ■

Top left: Water seeps through rocks under a log weir on Chesnimnus Creek. Left: An entire tree was placed on top of this log weir to keep it from floating downstream and to assist in trapping more wood for improved fish habitat. USFS photos.

The **power** *of* **people**

working and learning together

by Jeff Oveson, GRMW

The staff and board of the Grande Ronde Model Watershed are always proud to show people the work accomplished by the model watershed and its partners. When the Bonneville Power Administration's Fish and Wildlife Program calls and wants an exclusive tour, it's even more reason to smile.

BPA has been the primary funding source for the Grande Ronde Model Watershed for 15 years, but never has such a collection of BPA executives been onsite together to look at projects. August 24, 2007, was a landmark date for the watershed as we hosted a visit from six BPA dignitaries – Greg Delwiche, Vice President for Environment, Fish and Wildlife; Bill Maslen, Director of the Fish and Wildlife Program; Mark Shaw, Manager, Unified Plan Upper Basin; Chris Fury, Policy and Planning; Kenna Powers, Policy Liaison to the Northwest Power and Conservation Council; and Michelle Whalen, Public Relations.

Clockwise: GRMW Director Bill Howell points out features of the McKenzie Trust property to Greg Delwiche, BPA Vice President for Environment, Fish and Wildlife. The McKenzie Trust property, located near Summerville in northeast Oregon, is being pursued for future habitat restoration work. The tour guests look at an opportunity to improve fish passage at the lower Davis Dam on Catherine Creek. Allen Childs of the Confederated Tribes of the Umatilla Indian Reservation speaks to guests about the McDaniel II Wallowa River Channel Relocation Project. BPA and GRMW tour participants happily end a long, but eventful day in the Grande Ronde Basin.

The original call came to Jeff Oveson at the GRMW from Dorie Welch, BPA's contracting technical representative, who has been the liaison between the two parties for several years. When asked what they wanted to see, Dorie simply replied, "as much as they can."

"Everything they can see in one day" is a tall order given that the Grande Ronde Model Watershed's service area encompasses 5,200 square miles in Wallowa and Union counties, plus a sliver of land in Washington. It would be impossible to see a significant portion of it in a day, but we were determined to show them significant work that had been accomplished in large part due to BPA funding, as well as work that remains to be done.

We devised a route that began at the Joseph Airport at 8 a.m. and concluded at the La Grande Union County Airport at 5 pm. The 14 stops between included visits to projects already completed, some that were in mid construction, and some that are in the earliest stages of planning. On the agenda were projects that address fish passage issues, wetland enhancement, sediment reduction, and instream habitat improvements. We had a great lunch at the Nez Perce Homeland site in Wallowa and were treated to Hagen-Das ice cream bars kept frozen on dry ice by Bruce Eddy, District Watershed Program Manager for the Oregon Department of Fish and Wildlife, and one of our own board members.

I don't know what time of day it was when I finally realized that what we were showing our BPA guests was "how" we did things, not so much "what" we did. They soon realized that people were as important as the projects, and that the projects were indeed reflections of the people.

Those very people were a big part of the day. Tom Smith of the Natural Resources Conservation Service, Brad Smith of ODFW, Jim Harbeck of the Nez Perce Tribe Fisheries Program, and landowners Liza and Craig Nichols all joined us along the way to share their visions. Allen Childs, a GRMW board member who represents the Confederated Tribes of the Umatilla, was joined by Winston Morton, a habitat ecologist with ODFW, in explaining an ongoing channel relocation project where Doug McDaniel was visionary enough to see the need, and gracious enough to allow us to tour his land. GRMW Board

.....Continued on Page 8, ***PEOPLE***

More than **$59 million** *earmarked for Oregon fish over next two years*

by Melissa Leoni, Senior Policy Coordinator
Oregon Watershed Enhancement Board

The 2007-09 biennium promises to be an exciting period for cooperative conservation in Oregon. The state will see a substantial increase in on-the-ground restoration and protection funding, and a modest increase in funding for capacity, monitoring, education and technical assistance projects. The September 18-19, 2007, Oregon Watershed Enhancement Board meeting was the first of the 2007-09 biennium, and the first opportunity for the board to discuss how to allocate available Measure 66 Lottery, federal, and salmon license plate funds. Capital funding for on-the-ground restoration and protection projects totals $59.5 million, a substantial increase over the previous biennium. Non-capital funding available for other grant purposes totals $7.9 million this biennium, in part due to the allocation of research funds (interest on Measure 66 Lottery funds) to OWEB by the Legislature for the first time.

The board members approved approximately $10.3 million for restoration and technical assistance grants submitted in April of 2007. The board awarded additional capacity funding for watershed councils and soil and water conservation districts, bringing the total for each to $6 million for the biennium. The board awarded $3.1 million in research funds for nine research proposals; this is the first time OWEB was able to solicit and award funding for research projects. The board also allocated $4 million of capital funding to support cost-share payments for landowners through the Conservation Reserve Enhancement Program.

After concluding business on September 18, the Grande Ronde Model Watershed and its partners took the OWEB directors, staff, and members of the public on a tour of fish passage and instream projects in the Ladd Creek and Catherine Creek watersheds. Approximately 60 people participated in the tour and learned about the successful partnerships formed to implement work in the basin, including the state departments of Forestry, Water, Fish and Wildlife, and Transportation; the U.S. Forest Service; and Oregon State University. The board would like to thank those partners for an interesting tour highlighting Oregon Plan success stories. The day concluded with a delicious barbeque at Ladd Marsh organized by the tour sponsors.

The September OWEB meeting was the last meeting for two long-time board members. Jane O'Keeffe, a public at-large member from Adel, has served her maximum eight years on the board, the last three and one half years as co-chair. Alan Christensen, who has represented the U.S. Forest Service since 2002, is retiring in October. Diane Snyder of Joseph has been appointed to fill Jane O'Keeffe's seat on the board as of October 1. ■

Right: Forestry consultant John Herbst describes the management activities taking place on the Eastern Oregon Agricultural Research Center's Hall Ranch. Top right: GRMW Executive Director Jeff Oveson (center) provides background for a series of fish passage improvement and sediment reduction projects. Jeff then introduced Rick Wagner (at right), Oregon Department of Forestry Stewardship Forester. Wagner described in detail the partnerships and activities that were part of each project.