



## Fish Passage in the Watershed

*Current Projects and Future Opportunities*



### HFF Overcoming Fish Barriers

Wild trout populations require access to habitat for different parts of their life cycle. But numerous man-made barriers block fish movement and access to habitat throughout the Henry's Fork Watershed.

The Henry's Fork Foundation is helping to change that with fish passage projects at Buffalo River Dam, Chester Dam (photo above) and potentially on Thurmon Creek. The intent is to reconnect fish to needed habitat, increase survival of fish, and ultimately improve fish numbers and fisheries.

### Connecting Juvenile Trout to Winter Habitat in the Buffalo River

The Henry's Fork has limited winter habitat, and overwintering habitat in the Buffalo River is crucial for the abundance of young-of-the-year rainbow trout that are produced each year. Fish passage improvements made in 2005 at the Buffalo River Hydroelectric Project have provided the best juvenile fish passage since the Buffalo River dam was built in 1936.

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*Photo: The 288-foot long fish ladder on the new Chester Hydropower Project will provide unobstructed access to habitat above Chester Dam for the first time since the dam was built in 1938.*



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# Message From the Chair

*Layne Hepworth*

Now that we have hired our new executive director, Brandon Hoffner, your Foundation is back to “running on all cylinders” and fully engaged in continuing the exciting and important work of fulfilling our mission to preserve, restore and protect the Henry’s Fork watershed. Part of that work, the Caldera Project, is our poster child and exemplifies the world-class conservation efforts that your Foundation is recognized for throughout the conservation community.

This is only one of many components of the activities of your organization, none of which could happen without your ongoing financial support.

Recent local events, such as the motorboat issue and critical provisions of the new Fremont County Development Code are constant reminders that the work of the Foundation will always be challenged by the need to strike a balance between growth and preservation in the watershed.

**Now, more than ever, HFF needs your help to continue the momentum created by past successes and to further its efforts into the future.**

As HFF continues to open new chapters and record new successes, your Board and Staff are asking you to give—and give generously—at this time so that we can continue to turn the challenges created during these economic and political times into opportunities. Remember too that all of your contributions to HFF are tax deductible.

**Thank you for your help and support. *You* are what makes the Henrys Fork Foundation.**

Best Regards,

Layne Hepworth  
Board Chair



## HFF Hires New Membership Manager

Amanda DeRito (photo right) joined the HFF staff in October as the new Membership and Communications Manager. Amanda has worked in communications and fundraising for several non-profits in the environmental, social welfare, health care, and energy sectors. She has graduate degrees in natural resource policy and economics from Utah State University and Washington State University. You can reach Amanda at [amanda@henrysfork.org](mailto:amanda@henrysfork.org).



# Help Us Remain the Voice of the River

## *Support the 2011 Year-end Appeal*

For the Henry's Fork Foundation, the past year brought change and opportunity, but many things remain the same, including the tremendous support of HFF members like you.

*We hope you will once again help us gather momentum for the next year's important work in the Henry's Fork watershed by supporting the 2011 Year-end Appeal, which you should have just received in the mail.*

The past year saw HFF continuing important work on the Caldera Project, a comprehensive undertaking that is currently connecting fisheries research with habitat restoration and fish passage to improve one of the world's most famous fly fishing locales: The Ranch.

Fish passage is not only important in the Caldera, but in the lower stretches of the Henry's Fork, where work is nearly complete on the Chester Dam Hydroelectric Project. This project includes many firsts on the Henry's Fork: fish screens on irrigation canals and a fish ladder that connects fish to habitat above and below the dam for the first time since 1938.

The year 2011 also saw a final flow test that will complete eight years of work on the Henry's Lake Outlet Restoration Project. While a controversial project, the results include one mile of enhanced Yellowstone cutthroat trout habitat and reduced sediment flowing into the upper Henry's Fork. In the end, a great project was achieved to the satisfaction of all parties involved, and it has contributed much to the health of the watershed.

A La Niña weather pattern ensured there was plenty of water in the river in 2011. High flows and full reservoir levels late into the year simplified the process of federally mandated Henry's Fork drought management planning for all of the partners.

Despite plenty of water right now, HFF staff continues to build and maintain the research and relationships necessary to ensure that when drought conditions strike, as they inevitably will, adequate flows remain in the river to support the survival of juvenile fish.

Drought management planning, along with HFF's contribution to Fremont County land use planning, river access and protection, and educational programs like Trout in the Classroom really do make HFF the voice of the river.

**We can only remain the voice of the river with your support of the 2011 Year-end Appeal. Thank you for your continued support of HFF!**



Your contributions support the Caldera Project, which combines research with improved fish habitat and passage. The result is better fishing on the world-renowned Harriman State Park. In photo, Jake Chutz nets juvenile rainbow trout at the fish weir on Thurmon Creek in December 2010.

## *Fish Passage* (continued from first page)

The 12-foot high dam, owned by Fall River Rural Electric Co-op, is located a few hundred yards upstream from the Buffalo River confluence.

HFF, Idaho Department of Fish and Game, and the Caribou-Targhee National Forest actively participated in the relicensing of the project, resulting in a commitment by Fall River REC to design and construct a fish ladder that would allow passage of young-of-the-year rainbow trout upstream and install finer screening of the turbine intake to improve downstream fish passage.

A 270-foot long ladder at the dam was completed in November 2005, with an upstream fish trap installed at the top of the fish ladder in March 2006. The fish trap was operated by Fall River REC for the first three years and by HFF since 2009. Over 11,000 young-of-the-year rainbow trout (less than or equal to 7 inches) have passed upstream through the fish ladder, mostly during September through December, over the past five years.

Juvenile trout go upstream through the fish ladder, overwinter in the Buffalo River, and return to the Henry's Fork in the spring. A downstream fish trap has been operated by HFF on the dam spillway for the past three years to track the number of trout moving downstream. A fish screen with quarter-inch openings covers the turbine intake to prevent fish from entering the delivery pipe and turbine, where mortality can occur, enhancing the movement (and decreasing the mortality) of fish as they move down into the Henry's Fork.

**HFF's monitoring of the downstream fish trap shows that fish passage improvements have increased the winter survival of trout, resulting in increased numbers of trout in the Henry's Fork.**

### Connecting Fish to Habitat in the Lower Henry's Fork

With the completion of a fish ladder on the Chester Dam, fish will have unobstructed access to habitat above the dam for the first time since 1938. Fish passage improvements were made as part of the Chester Dam Hydroelectric Project, which is being built and will be operated by Fall River REC. The project includes a new hydropower facility on an existing 13-foot high irrigation dam.

## *Fish passage projects pay big returns to anglers and ultimately to local economies...*

The 288-foot long fish ladder was installed at the Chester Dam Hydroelectric Project, with the overall design coming from the Buffalo River fish ladder. Fish will have access to about 100 miles of river and streams (most in the Fall River drainage) above the Chester Dam. HFF conducted preliminary monitoring of the fish trap on the fish ladders this autumn and found juvenile rainbow trout and whitefish successfully navigating the fish ladder. The fish ladder will be fully operational when other features of the hydropower project are completed in 2012.

The \$487,000 needed for the design and construction of the Chester Dam fish ladder was raised by the conservation groups involved in the settlement agreement: HFF, Trout Unlimited, and the Greater Yellowstone Coalition. A grant from the Fisheries Restoration and Irrigation Mitigation Act program of the U. S. Fish and Wildlife Service provided the majority of funding, with the remainder coming from a variety of federal, state, and private sources (see Acknowledgements on facing page).

As part of the settlement agreement for this project, the licensee (now Fall River REC) committed to installing fish screens in the two irrigation canals that originate at the dam. The first fish screen on any Henry's Fork of the Snake River canal was installed in the Last Chance Canal in 2010, with a screen on the Cross Cut Canal installed in 2011. The total price tag for the fish screens was approximately \$1 million.

### The Future of Fish Passage on the Watershed

HFF, Caribou-Targhee National Forest, and Idaho Fish and Game are currently evaluating the potential to provide upstream fish passage on Thurmon Creek at Silver Lake Dam. The Thurmon Creek Overwintering

Assessment will continue this winter. Young-of-the-year rainbow trout are captured with a weir near the mouth of Thurmon Creek.

These fish are individually tagged and then released to either Thurmon Creek just above the weir or upstream of Silver Lake Dam, which is a complete barrier to upstream fish passage.

The number of fish returning to the weir during the spring from the two different release areas will then be compared. Based on these results, a decision will be made as to whether and how to provide upstream fish passage at Silver Lake Dam.

Fish passage projects are typically complex and costly, but these long-term investments pay big returns to anglers, and ultimately to local economies through enhancement of these valuable fisheries. The Henry's Fork Foundation, along with many partner organizations, will continue to assess, implement, and monitor important fish passage projects in the watershed.

- Jim DeRito, Research and Restoration Director



Matt Cahoon, the Don C. Byers Memorial Scholar for 2011, holds one of the first young-of-the-year rainbow trout to pass up the Chester fish ladder this past fall.

*Acknowledgements: The Buffalo River fish passage monitoring has been completed by Doug Cutler, Lee and Phyllis King, Jake Chutz, Jim Mullen, Laura Sass, Chris Schaller, Matt Cahoon, Anne Marie Emery and numerous Henry's Fork Master Naturalists, volunteers, and HFF interns. Fall River REC has made large investments in fish passage at to of their hydroelectric projects and continues to support ongoing fish passage monitoring. The design and construction of the Chester Dam fish ladder was funded by a U.S. Fish and Wildlife Service program, Jackson Hole One Fly and National Fish and Wildlife Foundation Conservation Partnership, U.S. Department of Agriculture Resource Advisory Committee, Trout Unlimited, Greater Yellowstone Coalition, HFF, and Trout and Salmon Foundation. In-kind contributions for the design and construction of the Chester Dam fish ladder have been provided by numerous individuals and organizations, with special thanks to Paul Bezzant (Project Manager, Symbiotics) and Dave Kennington (Design Engineer, Sunrise Engineering). Harriman State Park has provided permission and logistical support to conduct the work on Thurmon Creek.*



Volunteers Kathy Boone (left) and Ellen Kirch check the outmigrant fish trap at the Buffalo River Hydropower Project for fish moving downstream.

# Riffles

## Notes From the Field

### Fish Salvaged on Cross Cut Canal

HFF coordinated volunteers from the Henry's Fork Chapter of the Idaho Master Naturalists, Brigham Young University, and local communities to help salvage fish on the Cross Cut Canal at Chester Dam in October (see photo below). Fish that entered the canal were not diverted back to the river for most of the past year because the new fish screens were not fully operable until September (see *Fish Passage* on cover).

HFF salvaged 2,936 fish from about 300 yards of canal. Salvaged fish included 2,340 native whitefish, 213 rainbow trout, 29 brown trout, 1 native cutthroat, and over 300 non-game fishes (sculpin, dace, etc.).

HFF has salvaged the Cross Cut Canal every fall since 2009 and has returned 4,554 salmonids (whitefish and trout) to the river as a result. The number of fish salvaged represents just a small portion of the fish that enter the canal every year. The new fish screens will return fish back to the river in the future, which means more fish in the river for anglers.



Volunteers salvaged fish from the Cross Cut Canal near Chester Dam in October. Since 2009, HFF and volunteers have returned 4,554 salmonids to the river from fish salvages in this canal.

### Prevent the Spread of Pondweed

Several large infestations of Curlyleaf pondweed (pictured below) were found in the Henry's Fork downstream of St. Anthony in July. Curlyleaf pondweed is an invasive aquatic plant and is a noxious weed in Idaho.

The weed forms dense stands that crowd out other species, impede water flow, and potentially impact fish by altering oxygen levels.

As a partner in the Henry's Fork Cooperative Weed Management Area, HFF assisted with aquatic plant surveys on the lower Henry's Fork in July.

Brief inspections of aquatic vegetation since then found Curlyleaf pondweed growing near Ora Bridge, upstream of Ashton Reservoir, and near McCrea Bridge. Fortunately, intensive aquatic plant surveys completed by HFF in the Harriman Ranch section of the Henry's Fork did not find this plant. There is no effective treatment to eradicate this weed once it becomes established in a river.

Preventing this weed from taking hold is crucial. Please take care to ensure you do not spread this weed to other water bodies. The weed spreads through pieces of aquatic vegetation stuck to equipment. CLEAN, INSPECT, and DRY all boats, trailers, and fishing equipment when you are done fishing each day.



Curlyleaf pondweed crowds out other species, impedes water flow, and potentially impacts fish by altering oxygen levels.

# Thank You for Your Contribution to HFF

August 1 to October 31, 2011

## \$5,000+

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Damon Zaylor

Thank You





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## Great News for Trout

High flows out of the Island Park Reservoir will support juvenile rainbow trout survival in the Henry's Fork this winter. The reservoir stood at about 84 percent full during drought management planning at the end of October.

The Bureau of Reclamation and Fremont-Madison Irrigation District do not want to store additional water this winter in Island Park Reservoir, welcome news for the fishery. Outflow from the reservoir is set to match inflow at about 500 cfs—**the highest winter flows in over ten years!** These flows will be maintained into the new year when the snowpack and water outlook will again be evaluated. With a La Niña weather pattern developing for this winter, similar to last year, there is a high probability of another year of above average snow pack. If these conditions materialize, then it's possible the Henry's Fork flows will further increase, providing additional support for survival of juvenile rainbow trout this winter.



## HFF's Upcoming Events

**Salt Lake City Reception**  
Radisson Hotel Downtown  
March 9, 2012

**Boise Reception**  
Riverside Hotel  
April 14, 2012

**Henry's Fork Day**  
Last Chance, ID  
June 16, 2012

