

THE VOICE OF THE RIVER



Henry's Fork Foundation

WINTER 2014

Fish Ladder Leads to More Wild Trout

Huge fish migration helps explain major increases in Henry's Fork trout

More than 8,000 2-year-old rainbow trout were added to the Henry's Fork Box Canyon population in the spring of 2013—about twice what can be explained by the high winter flows of 2011-2012. Could the additional 4,000 fish be coming from the Buffalo River? Preliminary evidence says yes, and the key to understanding why lies in the restoration of key trout migration routes.

We are all familiar with the great animal migrations: monarch butterflies, wildebeests, and emperor penguins, to name a few. After seven years of operating the Buffalo River fish ladder, HFF and its partners have documented another important migration: 20,000 fish per year moving between the Henry's Fork and the Buffalo River.

Why fish migrate

Animal movements can be short daily trips around a home range in search of food, dispersal of young away from the nest or den when they become old enough to fend for themselves, or migrations between different habitats.

Animals undertake seasonal migrations when the resources they need to complete their life cycle are not available in a single location over the entire year. For example, the swallows that feed along the Henry's Fork on summer evenings spend the nesting season here, where aquatic insects provide an abundant food source. Once the main hatches are done for the year, the birds leave to spend the winter in a warmer climate where more food is available.

Continued on page 4



Monitoring the fish ladder at the Buffalo River Hydro Project has revealed that 20,000 fish migrate between the Henry's Fork and the Buffalo River each year.

The fish ladder at the Buffalo River Dam passed its 130,000th fish this past summer. Of these, more than 30,000 were wild rainbow trout.



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Opening the Giving Season

Make your year-end gift on #GivingTuesday

Before the year draws to a close, I want to personally thank you one more time for being an essential member of the Henry's Fork Foundation. I know you'll be behind us as we plan our goals for next year, which will mark **30 years of the Foundation—and members like you—working together to protect the Henry's Fork and its legendary wild trout.**

Nestled within our 3,000 members is a wide array of people with distinct talents and interests, each of which adds to the Foundation's effectiveness. Simple actions like encouraging a friend to become a member or stopping by one of our offices to share your thoughts about the watershed **helps us all to better steward the Henry's Fork through the Foundation.** Your membership and participation is an investment in the Henry's Fork, one that draws you back to this wonderful place year after year.



To kick off our 30th Anniversary, **we're joining nonprofits across the nation to celebrate #GivingTuesday on December 3, 2013** (read below to learn more about #GivingTuesday). Help us start the giving season by making your year-end gift on #GivingTuesday and spreading the word about this giving day. **As a thank you for a gift of \$100 or more, we'll also send you a Montana Fly Company fly box valued at \$40.**

As I write, we've wrapped up the summer field season projects and fall has fully enveloped the Henry's Fork. Winter projects are now well underway, as snow does not stop our ongoing work. The synergy between the Foundation staff and board of directors, dedicated members like you, and businesses along the Henry's Fork ensures a can-do mentality permeates the watershed from Henry's Lake to the forks of the Teton. This partnership transforms our daily conservation work into healthy wild trout populations!

Thanks to your support in 2013, the Foundation has celebrated numerous successes, including establishing a link between increased wild trout populations in the Henry's Fork and overwintering and spawning habitat made available in the Buffalo River by a fish ladder at the Buffalo River Hydroelectric Project (cover article).

For 30 years, the Foundation has been the voice of the Henry's Fork, its steward, its public educator, its researcher, and its source of scientific expertise. Supporters like you have had our back every step of the way. Your year-end gift will help ensure the Foundation's essential work continues far into the future.

Sincerely,

Brandon Hoffner
Executive Director

#GIVINGTUESDAY™

#GivingTuesday is a new national day of giving added to the calendar last year on the first Tuesday following Thanksgiving, Black Friday, and Cyber Monday. More than 2,500 charities, volunteer organizations, corporations, and foundations came together in 2012 on the Internet in all 50 states with one common purpose—to give more, give smarter, and celebrate the American spirit of contribution.

This year, the online "opening day of the year-end giving season" will make its second appearance December 3, 2013. It began as a giving movement on Twitter (hence the hashtag #GivingTuesday), but quickly spread throughout the Internet and by word of mouth. Learn more about #GivingTuesday and make your gift at www.henrysfork.org. Find us on Facebook and Twitter to stay in touch during the giving season!

Healthy River Offsets Hot Weather

Angling season in review by TroutHunter guide Pat Gaffney



2013 was a hot and dry summer for most of southeast Idaho, which meant irrigation demands from the Henry's Fork system were high. Consistent flows and bountiful mayfly and stonefly hatches in May and June gave way to a July torrent, and guides and anglers alike had to be resourceful and persistent to find feeding fish. Once irrigation demands lessened, lower flows brought regular insect activity and more fish to the net. August had its moments with ant swarms and PMD and Callibaetis mayflies, and the trico and mahogany mayfly activity in September was nothing short of spectacular. Cold weather through the early part of October brought a resurgence of the lower river below Ashton dam as strong Baetis mayfly hatches garnered the attention of some very hearty trout.

Though meticulous note-taking has never been a strength of mine, I feel as though the average number of fish caught by clients in 2013 was slightly down on any given day, but that was **offset by an increase in the average size of the fish caught**. I attribute the numbers of fish caught being down to higher flows and more difficult fishing conditions through a large part of the summer. **And I attribute the larger fish to a healthy river ecosystem.** This season, in addition to a handful of 24-inch trout, I also saw otters, beavers, muskrats, marmots, minks, raccoons, foxes, black bears, moose, elk, pronghorn, deer, coyote, golden eagles, bald eagles, hawks, owls, herons, sandhill cranes, trumpeter swans, countless waterfowl, and even an aggressive osprey which took a fish right off a client's line in Box Canyon. It isn't much of a stretch to say that none of these animals would be in the area if not for a healthy Henry's Fork.

As a resource, the Henry's Fork is truly amazing. It provides water for agricultural irrigation and cattle herds. It supports a fantastic wild trout population, as evidenced by the Idaho state record brook and brown trout (and mountain whitefish) being caught in the system. It provides recreational and economic opportunities for farmers, ranchers, boaters, rafters, and fishermen alike. It is the lifeblood of Island Park's national forests and the many animals that inhabit the area. The Henry's Fork is relied upon by many on an annual basis, and seemingly without fail, it provides. It's a resource and an ecosystem worthy of preservation, **and in need of the continued conservation efforts** of the Foundation and members like you and me.

Angling tip: Shorten your cast for a drag-free drift

After years of guiding anglers from all over the world, it has become apparent that outside of the Island Park area, the Henry's Fork is most well-known for the large rising rainbow trout on the placid waters of Harriman State Park and for the robust fish that prefer the faster pocket water of Box Canyon.

Part of the beauty of the Henry's Fork is that these two sections of river could not be more different. The diversity of the water types and fishing opportunities available to an angler of any ability level from beginner to expert vary greatly from section to section and even from put-in to take-out in many places, like Box Canyon.

When fishing these famous sections of river for the first time, it's common for anglers to be overwhelmed by their surroundings and the large trout therein. This leads to anglers trying to do too much, especially casting too far beyond their comfort zone. One of the most common instructions that I provide on a guide trip is to ask my clients to shorten up their cast. In the swirling pocket water of the canyon especially, it is difficult enough to get a good drift. The further away from the boat an angler casts, the more line needs to be controlled, and more drag-inducing currents are crossed.

Shorter casts allow an angler to more readily control his or her line, and obtain a more natural drift. This will inevitably result in more strikes due to more drag-free drifts, and more hookups due to better line and rod control provided by the shorter cast. The next time you find yourself nymphing in Box Canyon, try only casting ten or twelve feet at a time and methodically picking apart the pockets created by each large boulder.

(Fish Migration continued from cover)

Fish are no different. For example, trout need clean gravel and cool water for successful spawning, and newly emergent fry need cover in shallow water. In the Rocky Mountain region, young trout need complex wood/rock structure to provide them with cover during the winter. These habitat features are most often found in small headwater streams. But these headwater streams do not contain deep pools needed by large fish and generally do not produce enough food to support high growth rates.

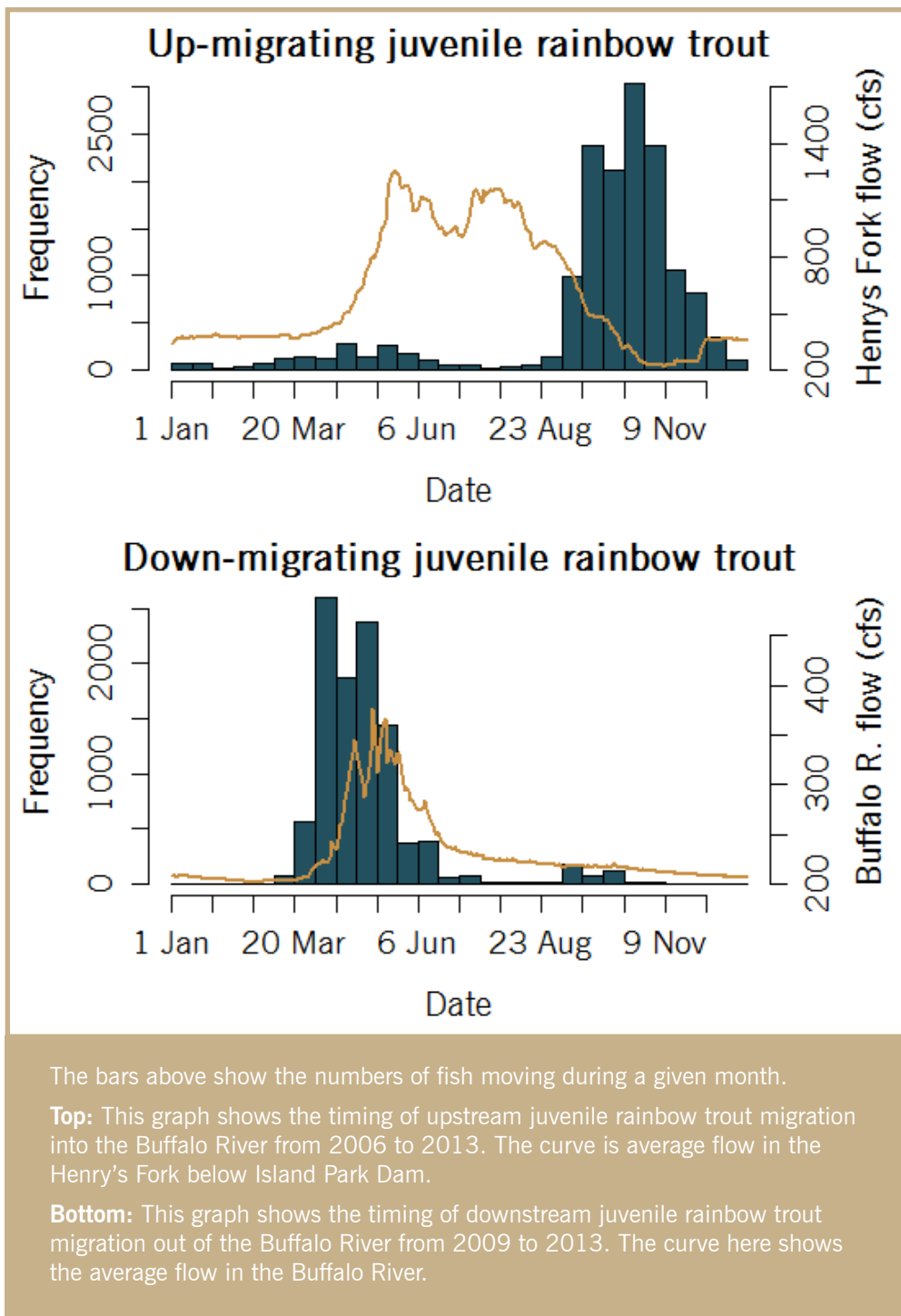
Maintaining abundant populations of large wild trout requires good spawning habitat, enough rearing and winter habitat to keep survival of juvenile trout high, lakes or river reaches where large numbers of adult fish can grow rapidly, and unrestricted migration among these habitats. When these pieces are in place, adult trout migrate upstream to spawn, juvenile trout migrate back downstream when they are big enough to survive well in the main river, and fish of all sizes will move as needed to find optimal food, cover, flow, and temperature.

Restoring migration means more wild trout survive

Before construction of dams in the upper Henry's Fork watershed, fish could migrate between the main river and headwater tributaries, including the Buffalo River and Big Springs. Then in the 1930s, construction of Island Park and Buffalo River dams blocked upstream fish migration to the Henry's Fork headwaters and to the Buffalo River, the only large tributary between Island Park Dam and Mesa Falls.

Lack of winter habitat for juvenile trout is the single factor limiting the size of the Henry's Fork wild trout population. This type of habitat is present primarily in canyon reaches of the main river—where it is dependent on winter flow—and in tributaries.

The two key components in our approach to increasing the wild trout population are improving winter flow management at Island Park Dam (see fall 2013 newsletter) and restoring fish migration to the Buffalo River. The current Buffalo River fish ladder became operational in 2006 and replaced a smaller ladder built in 1996.



HFF and its partners have monitored upstream migration at the Buffalo River Dam since early 2006 and downstream migration since mid-2009. Species using the ladder include rainbow trout, brook trout, whitefish, dace, shiners, and sculpin. During the summer of 2013, the ladder passed its 130,000th fish. Of these, more than 30,000 were wild rainbow trout, ranging in size from one to 30 inches long.

Over 75 percent of the rainbow trout that have migrated through the fish ladder were smaller than eight inches, confirming that the new ladder is meeting its design objective of allowing young fish to migrate into the Buffalo River.

Over 85 percent of the juvenile trout using the fish ladder migrated upstream between September 1 and the end of December (top panel of graph). This period of peak migration coincides with the period of lowest river flow—and the least amount of winter habitat—in the Henry's Fork. Low flows appear to cue the young fish to move up into the Buffalo River, presumably to find winter habitat.

Over 85 percent of juvenile trout migrating downstream occurred between March 1 and June 15, coinciding with snowmelt (bottom panel of graph), and higher river flows. High flows in the Buffalo River provide a cue for young fish to move downstream to the Henry's Fork, where they will have access to more food in the spring and summer.

Buffalo River may contribute thousands of wild trout to population

At the beginning of this article we asked if the Buffalo River could be adding so many wild trout to the Henry's Fork fisheries. It seems the answer is "yes." We estimate that as many as 25,000 young rainbow trout migrate downstream out of the Buffalo River each spring. Around 4,000 of these would survive until age two, when they can be included in Idaho Fish and Game's spring population estimates in the Henry's Fork. That is not all. The number of spawning-sized fish migrating up the Buffalo River each year has grown from about 50 to 250 fish per year since 2006, suggesting an increase in the Buffalo River spawning run.

The offspring of 250 spawners could contribute around 4,000 2-year-old fish per year to the Henry's Fork population. So, the number of young fish moving down the Buffalo River—

Lack of winter habitat for juvenile trout is the single factor limiting the size of the Henry's Fork wild trout population.

and the number of spawners moving up—are consistent with the number of wild trout observed in the Henry's Fork in 2013. This provides plausible evidence that the Buffalo River is contributing thousands of wild rainbow trout to the Henry's Fork fishery.

But questions remain. How many of the young fish migrating down to the Henry's Fork are offspring of spawners that moved upstream the previous year? How many of these young fish were hatched in the Henry's Fork and used the fish ladder to find better winter habitat in the Buffalo River? Future management of the ladder and restoration of habitat in the Buffalo River depend on the answers. In the fall of 2013, we began the next phase of our monitoring work, which will use tagging and genetic markers to answer these questions.

Regardless of the answers, we can conclude that the Buffalo River fish ladder has restored a major migration route used by fish of a variety of species and sizes. While maybe not as spectacular a sight as the migration of wildebeests on the Serengeti, this fish migration may prove to be a key component in maintaining the wild trout population of the Henry's Fork.

Rob Van Kirk & Anne Marie Emery

Riffles: Notes From the Field

Water quality remains good below Island Park Dam

Suspended sediment concentrations below Island Park Dam remained low during the last seven weeks of the irrigation season, as reservoir volume dropped from 41 to 26 percent of capacity (55,000 to 35,000 acre-feet). Excessive amounts of fine sediment can degrade wild trout habitat by filling in spaces among rocks on the stream bottom, reducing spawning success and abundance of mayflies and stoneflies.

Monitoring conducted by HFF and the U.S. Bureau of Reclamation showed that suspended sediment concentration was about 100 times lower between August 12 and September 27 than it was over the same time period during a well-known sediment release in 1992, when the reservoir volume dropped from 24 to 0.2 percent of capacity (33,000 to 270 acre-feet). In the photo at right, Stanford intern Chau Ho collects water quality samples below Island Park dam.

A review of data from 1992 indicated that the largest sediment concentrations in the river occurred when the reservoir fell below 6,000 acre-feet (4.4% of capacity). Although there was little possibility that such levels would be reached in 2013, levels as low as 10,000 acre-feet were projected based on water conditions early in the summer, motivating HFF to undertake the study.

Rob Van Kirk



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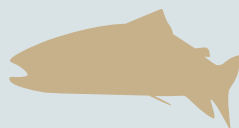
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Special thanks to Sage for providing rods and reels to recognize major contributions. Their sponsorship has helped raise well over \$100,000 to support the mission of the Foundation.



Thank you



Lifetime Giving Club Honors Donors

Next year, we will mark 30 years of conservation, protection, and restoration of the Henry's Fork and its legendary fisheries. As part the Foundation's 30th Anniversary celebration, we will recognize our most loyal members with a new life-time giving program. The **Wild Trout Club** honors those who have given cumulative gifts of \$10,000 or more to the Henry's Fork Foundation. Many of these people have been with the Foundation since its very beginning.

Giving levels have four benchmarks, and individualized plaques will be given for each level achieved, **along with a matching custom Montana Fly Company fly box and a dozen René Harrop green drake pattern flies.** This is just another way to say thank you for your continued commitment to the Henry's Fork and its wild trout!



Robert Dotson, www.robertdotson.com

Idaho Master Naturalists Fill Critical Need in Watershed

Naturalists top 300 hours of service

The Henry's Fork Chapter of the Idaho Master Naturalists contributed more than 300 volunteer hours to HFF projects and events this past summer, helping us achieve our monitoring and project goals. The naturalists were certified under the Idaho Master Naturalists state program.

Their dedicated service has included creating and installing monofilament recycling stations at angler access sites, monitoring resident trumpeter swan nesting sites, monitoring the Sheridan Creek restoration site, providing shuttle service and photos for Youth on the Fly, monitoring the Buffalo Dam fish ladder, and fixing riparian fences in Pinehaven. Naturalists also helped out at the HFF satellite office in Last Chance, HFF's large annual Henry's Fork Day fundraiser, and our spring and fall highway cleanup. We are grateful for our local chapter of certified naturalists and look forward to another productive season in 2014.

Anne Marie Emery



Jeff and Cathy Dufault of the Henry's Fork Master Naturalist program install monofilament recycling stations at river access points throughout the watershed.



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Connecting Local Kids to Local Waters

A day on the river by Colton Orme

This past year I did Trout in the Classroom with Mr. Lyon and Ms. Emery from HFF. I liked observing the fish and learning about them. My favorite part was when we released them into a stream, learned about the fish ladder, measured fish, and dissected big fish.

In August I had the opportunity to go on a guided fly fishing trip on the Henry's Fork thanks to the Youth on the Fly fishing program. Youth on the Fly is a unique program that lets kids learn about fly fishing. First, we learned about trout in our fifth grade class and got to visit the Buffalo fish ladder with the Foundation. Then we wrote an essay on why we would like learn how to fly fish. I was chosen to go and had a great experience. When we finished fishing, we got off the boats and our guides gave us all our own flies to take home! My guide, Rance Dye even gave us a little round tackle box to put them in. My total for the day was 13 fish!

The Henry's Fork Foundation also let us use their fly rods that we can borrow for free at anytime to fish. Since this trip, I have gone out to the same river, and caught fish on my own. I see lots of fly fishing in my future and think fly fishing is a great way to get out doors and be active. I think people with the Henry's Fork Foundation spend a lot of time and money on us and I really appreciate that. I love that we can do stuff like fly fishing and that we even have the Henry's Fork and how it is so close.

Special thanks to the guides and fly shops for their commitment to keeping kids connected to local waters: Tyler Treece, Andy Jenkins, and Alex Kohn of Henry's Fork Anglers; Kevin Darby, Rance Dye, and Carlos Chavez of TroutHunter; Logan Martindale and BJ Gerhart of Three River's Ranch. Also special thanks to Ashton Elementary School and fifth-grade teacher Mr. Matt Lyon for encouraging positive recreation with academics, the Henry's Fork Chapter of the IMN Program for shuttle and picture support, and Patagonia and Redington for sponsoring Youth on the Fly.



Upcoming Events

Salt Lake City Reception
Friday, February 21, 2014
Radisson Hotel, Salt Lake City

Boise Reception
Friday, April 11, 2014
Stueckle Sky Center,
Boise State University

Henry's Fork Day
Saturday, June 14, 2014
Last Chance, Idaho



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