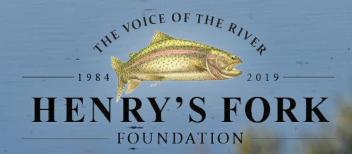
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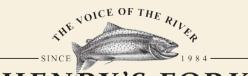
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Latest Economic Value Data is In





HENRY'S FORK

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This July, the Henry's Fork Foundation hosted the first annual South Fork Gala on the banks of the beautiful South Fork Snake River. Over one hundred people attended the Gala at the South Fork Lodge to enjoy a fantastic evening socializing with old and new friends, listen to retired Idaho Department of Fish and Game Director, Virgil Moore's keynote address, and help support the Henry's Fork Foundation - South Fork Initiative program. For a first time event, the South Fork Gala was a huge success! Thank you to all the sponsors, donors, and participants who made the event such a memorable evening!





Missed the South Fork Gala, but want to support the South Fork Initiative? Visit henrysfork.org/donate-south-fork-initiative to learn more.

How Can Improved Water Management Effect Both Biology and Fishing Experience?

Using new high-resolution predictions of water supply provided by HFF and strategies set by the Henry's Fork Drought Management Planning Committee, Fremont-Madison Irrigation District and the U.S. Bureau of Reclamation have managed the Henry's Fork irrigation system much more precisely over the past two years than in the past. Release from Island Park Reservoir and Grassy Lake is limited to only what is needed to meet irrigation demand and maintain a specific irrigation-season target flow in the Henry's Fork at St. Anthony.

This precision has increased the amount of water left in Island Park Reservoir at the end of irrigation season, resulting in the highest winter streamflow seen in consecutive years since 1999-2000. In 2018, the St. Anthony flow target was met to within 10 percent, saving 14,000 acre-feet of water in the reservoir and increasing winter flow by 70 cfs.

But, HFF's ultimate goal for precision management isn't the water itself; it is the fishery downstream of the reservoir, which depends on trout abundance, aesthetics of the fishing experience, and aquatic insects. How have those responded to improved management?

Rainbow Trout abundance, as measured by Idaho Department of Fish and Game's annual surveys in Box Canyon, was 4,924 fish per mile this year, compared with 2,796 in 2018 and 2,913 in 2017. This year's abundance was the fourth highest since record-keeping began in 1978, due primarily to high survival of juvenile trout during the winter of 2017-2018.

We know from angler survey responses that high streamflow and poor water clarity negatively impact the aesthetic qualities of fishing the Ranch and adjacent reaches. After 41 consecutive days of Island Park outflow in excess of 1,300 cfs in 2016, maximum outflow during irrigation season was 1,080 cfs in 2017 and 1,140 cfs in 2018. Lower outflows, in combination with high reservoir levels, resulted in turbidity (how "cloudy" the water appears) in the range of 3-5 turbidity units in 2017 and 2018, compared with 5-15 turbidity units in 2016.

Similarly, HFF's research has found that sediment is delivered from Island Park Reservoir during irrigation season when flow is high and reservoir level is low. This sediment is trapped by aquatic vegetation in the river downstream during the summer and can move out only when the plants have died back in winter. This means that sediment is accumulated when irrigation-season flow is high and subsequent winter flow is low and removed under the opposite flow conditions. Percent of total aquatic invertebrates made up of mayflies, stoneflies, and caddisflies is a relevant biological indicator of sedimentation. At Last Chance, this percentage increased from 47 percent in 2017 to 65 percent in 2018, indicating a decrease in fine sediment that can be attributed to lower irrigation-season flows in 2017 and higher flows the following winter.

At the midpoint of irrigation season 2019, improved water management is well on its way to providing a third consecutive year of good conditions for the Henry's Fork fishery.



Between 2016 and 2018, HFF, Friends of the Teton River, Weber State University, and Idaho Department of Fish and Game (IDFG) studied angler use and fishing-related expenditure on Henry's Lake, the Henry's Fork and tributaries, and Teton River, with the intent of comparing results with those of a similar study conducted by IDFG in 2003.

Although the 2003 and recent surveys differed slightly in methodology, we have converted results to be comparable between the two surveys. We report use figures in angler-days, defined as one angler fishing one day, regardless of the duration of the daily trip. We have also adjusted the 2003 dollar figures for inflation to be equivalent to 2017 dollars.

Compared with 2003, angler use dropped 78 percent on Henry's Lake, increased 5 percent on Henry's Fork and

increased a whopping 266 percent on Teton River. Inflation-adjusted spending per day of fishing per person decreased 45 percent on Henry's Lake and 20 percent on Henry's Fork, but increased 24 percent on Teton River.

As a result, total spending decreased dramatically on Henry's Lake and increased four-fold on Teton River. Decreased use and spending on Henry's Lake reflect angler reports of poor fishing there in recent years, whereas increased use and spending on Teton River reflects greatly increased population—both year-round and seasonal—in Teton Valley since the early 2000s.

Meanwhile, angler use and total spending on the Henry's Fork were the same as in 2003 to within statistical margin of error, suggesting that the Henry's Fork fishing experience, reputation, and angler population have stayed relatively constant.

Location	Annual Use (angler days)		Daily Spending per Angler		Total Annual Spending	
	2003	2016-18	2003 Inflation-adjusted	2016-18	2003 Inflation-adjusted	2016-18
Henry's Lake	56,829	12,366	\$289.92	\$158.93	\$16.47 million	\$1.97 million
Henry's Fork & Tribs	118,330	124,492	\$352.34	\$283.60	\$41.69 million	\$37.28 million
Teton River	9,144	33,492	\$100.24	\$124.72	\$0.92 million	\$4.21 million
TOTAL	184,303	170,350	\$320.56	\$255.12	\$59.08 million	\$43.46 million





From the very beginning, the success of this Foundation has relied upon the commitment of a community of people who believe the Henry's Fork is worth protecting. That spirit of commitment, passion, and dedication was reflected in the

founding members, the first staff members, and now in a growing staff of sixteen people from across the country, all drawn here by a common goal – to ensure the fisheries and waters we love are thriving for decades to come.

We are proud of what has been achieved for the Henry's Fork over the years; the Foundation has leveraged donations of time and resources for positive results beyond expectations. However, we faced a harsh reality in 2016 when we learned that our approach was not enough in the face of record drought. Your support has brought great value to this river, but now we must do more.

We must be innovators and leaders to find lasting solutions to the challenges posed by an ever changing water supply. Our experienced, driven staff is up for the challenge, pioneering programs and building partnerships that will bring benefits to our fisheries at a scale greater than ever before. But we need your support and commitment to this river now more than ever.

Please help us bring the next level of meaningful conservation and programs to life on the Henry's Fork.

Below are the updated donor recognition levels:

Green Drake Bronze Level - \$2.500 +

- Green Drake Society Membership for One Year
- Green Drake Society Vest and Pin
- Your Choice of a Sage X Freshwater (3wt.-11wt.) or Saltwater (5wt.-11wt.) Fly Rod

Green Drake Silver Level - \$5,000 +

- HFF Life Membership
- Custom Life Member Hat and Pin
- Green Drake Society Membership for One Year
- Your Choice of Sage X Freshwater (3wt.-11wt.) or Saltwater (5wt.-11wt.) Fly Rod
- Matching Sage Spectrum Reel

Green Drake Gold Level - \$10,000 +

- HFF Wild Trout Club Member
- Receive Wild Trout Club Plaque and Matching Fly Box
- HFF Life Membership
- Custom Life Member Hat and Pin
- Green Drake Society Membership for One Year
- Your Choice of Two Sage X Freshwater (3wt.-11wt.) or Saltwater (5wt.-11wt.) Fly Rods
- Two Matching Sage Spectrum Reels





Every angler has, at one time or another, looked around, with their feet (or boat) in the river, and wondered, "What is going on?" Maybe the river is a funny color or the fish are particularly slow and sluggish that day. HFF has collected data on water temperatures, dissolved oxygen, and turbidity for years, but now that information is at your fingertips anytime, anywhere -- even out on the river.

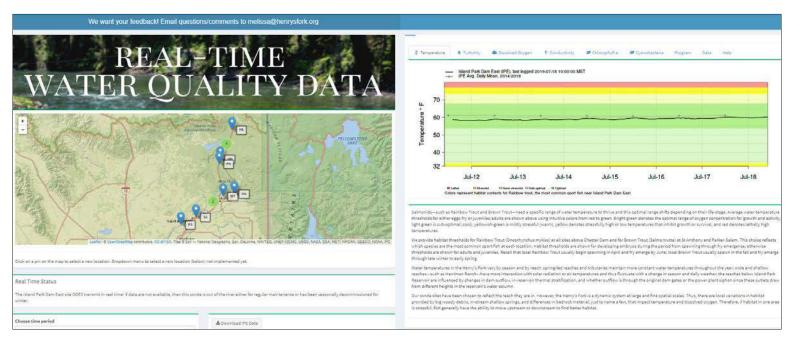
The process began in 2013 when HFF took the first steps towards creating what is now one of the largest water quality monitoring networks in Idaho. HFF was collecting millions of data points each year, but still lacked the ability to put that data in the hands of anglers in real-time.

All that changed in 2017 when the first remote data

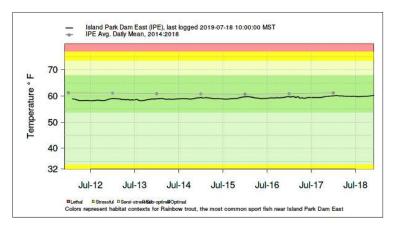
transmission equipment was connected to an in-water sonde, allowing that data to be sent via cell signal to a computer at the HFF office. At the same time, an HFF intern from Stanford built the foundation for a website that would host those millions of data points in a user-friendly way.

Over the past two years, Research Associate, Melissa Muradian has refined and added to this website that has now been built, from the ground up, by HFF staff and interns, specifically with anglers in mind.

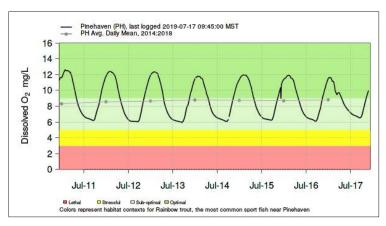
To view the new data website, visit henrysfork.org or henrysforkdata.shinyapps.io/scientific website/.



HFF's data website features graphs of water temperature, turbidity, dissolved oxygen, conductivity, chlorophyll A, and cyanobacteria for 13 sites along the Henry's Fork.



This year's April-June mean temperature was 0.36 degrees below the 30-year average. Water temperatures followed suit this spring and summer. View real-time water temperatures at Island Park Dam East inlayed over colors representing Rainbow Trout temperature tolerances on HFF's new data website.



A graph from HFF's data website plots dissolved oxygen (DO) at Pinehaven over Rainbow Trout DO thresholds. Variances in DO come from activity of aquatic plants as they absorb and then release oxygen throughout the day.





An essential aspect of the Henry's Fork Foundation is the summer internship program. As HFF facilities expanded in 2018, the internship program became even more established, providing opportunities for six undergraduate students to live on the HFF campus while they worked on various projects for ten weeks. HFF's undergrad internships are funded through generous contributions from individual donors and are either tied to specific universities or limited to certain student populations as specified by the donors.

The internship program provides valuable, professional work experience for selected undergraduate students, as they assist with fencing, water quality field work, recreational use surveys, and independent work among many other projects. Ilinca Popescu of Stanford University worked on a statistical evaluation of the impact second homes have on the economic value of river recreation in the Henry's Fork Watershed. Caryn Dawson of Iowa State University participated in the Farms and Fish internship, where she monitored fields enrolled in HFF's irrigation demand reduction program by collecting data in a field plot experiment to test the effectiveness of LESA irrigation technology, and measured groundwater levels and stream flows. Ashly Loibman of Colgate University assisted Christina Morrisett with her Ph.D research on the lower Henry's Fork, between St. Anthony and Parker. Using an Acoustic Doppler Current Profiler to collect depth, velocity, and discharge data at various cross-sections at various flows, they aimed to describe how streamflow impacts aquatic habitat in order to suggest a low-flow target for this reach.

Washington and Lee University's Bella Fucigna worked with PhD student Jack McLaren to find out what chemical or physical factors might be limiting macrophyte growth in the upper Henrys Fork River, in hopes of eventually increasing macrophyte growth to provide more trout habitat and yield a better fishery. Don C. Byers intern and BYU-Idaho student Amber Roseberry worked on water quality projects, gathering water samples, and programming sondes to remotely transfer data. Natalie Pontikes of St. Lawrence University worked alongside Jamie Laatsch in communications and media to produce high quality images for social media, newsletters, and website use.

In addition to their individual research and projects, interns contribute to the HFF intern blog weekly, and attend weekly HFF seminar series presentations. The seminar series presentations aimed to provide valuable context on the region for interns and the HFF community, while also providing the opportunity for interns to present on their individual projects from their summer work.



Left to right: Amber Roseberry (BYU-Idaho), Bella Fucigna (Washington & Lee), Ilinca Popescu (Stanford), Ashly Loibman (Colgate), Natalie Pontikes (St. Lawrence), and Caryn Dawson (Iowa State).

What Are the Local Students Saying About HFF's Youth Programs??



"Fishing is one of my favorite things in the world, and it is fun doing it. I have always wanted to catch a big one and show my parents" - Joshua Heiner



"Trout in the classroom inspired me to do more research and helped me to discover that I love fish" - Kayson Sweat

"I want to do youth on the fly because I have never been fly fishing, but I live in the perfect place" - Jack Rowbury



"Learning about the ecosystem of fish was fun and I learned alot. I respect fish much more now. I will look at fishing holes, rivers, and lakes in a whole new way" -Corbyn Hooper



Contributions: April 1, 2019 - June 30, 2019

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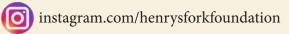
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