

VOICE OF THE RIVER

Winter Newsletter 2022

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Photo Recap of 2022 Fishing Season

by TJ Powell, TroutHunter

Despite cold temperatures and some rain, fishing was good in the early season. Caddis and salmonflies provided good fishing even though cold temperatures threw things off a bit.




July and August were pretty darn good with grey drakes, green drakes, flavs, and then hoppers. Rainbows and browns on the lower river, but rainbows in the Box Canyon, too. We could've used more rain for the river, but dry weather and not much wind made for comfortable fishing.



The end of the season stayed warm longer than usual. Hopper fishing was fantastic because it never really got cold. The Ranch fished well with terrestrials, mahogany mayflies and BWOs.



Overall, I've seen better seasons, but we're lucky that there are a lot of fish in the river and I'm lucky to be able to make a living on this river. 🐟



Water Year 2022 Recap

**Water Year 2022 ran from October 1, 2021 thru September 30, 2022*

Climate

- Peak snow-water equivalent (SWE) was 71% of average and 3rd lowest in the 1989-2022 record (behind 2001 and 2015).
- Cold temperatures preserved that meager snowpack well into spring as SWE peaked on April 24, 12 days later than average.
- In the big picture, this spring's temperature was only 0.5 degrees below the 1989-2022 average, illustrating that even a seemingly cold spring by today's standards was warmer than the average year in the 1990s.
- The cold weather pattern broke at the end of June, and temperatures quickly exceeded average for most of the rest of the summer (mean July-September temperature was the warmest in the 1989-2022 record).
- Precipitation for the watershed as a whole ended the water year at 91% of average, but recall that unfortunately 91% of average is still 9% below average and, for fish, it doesn't matter how much it rains, it matters how much water is in the river (natural streamflow).

Natural Streamflow

- As measured by the factor most important for fish, natural watershed streamflow, water year 2022

was the driest in the 1978-2022 record (at 72% of average, or 28% below average).


- Furthermore, natural flow was above the 1978-2022 average in only 8 of the 23 water years since 2000—an indicator of long-term drought persistence in the West.

Island Park Reservoir Management

- Winter inflow to Island Park Reservoir was the second lowest in the 1934-2022 record, but the outflow of 220 cfs was higher than that in 14 other years.
- The reservoir reached its minimum for the year on September 20 at 45% full, compared with 45% full on average and 41% full last year.

Our Impact

Island Park Reservoir will end the water year at average, despite this being the driest water year in the upper Henry's Fork sub-watershed since 1937! That would not have been possible without water conservation and our collaborative efforts like Farms and Fish, Precision Water Management, and the lower Henry's Fork PhD research.

To read the full summary of the 2022 water year, including how Senior Scientist Dr. Rob Van Kirk's April 1 predictions held up, click [here](#). 

Upper Snake River Collaborative Farms and Fish Program Update



In the Henry's Fork Watershed, agriculture is both the biggest economic driver and biggest consumer of water resources. Island Park Reservoir is crucial to maintaining quality fisheries for the Henry's Fork, but the reservoir is solely an irrigation storage and delivery facility. Although HFF can't mandate flow level out of the reservoir, the Upper Snake Collaborative Farms and Fish Program is uniquely positioned to facilitate impactful projects that ultimately make a beneficial impact on a drought-stricken Idaho and trout populations.

This program is a partnership between HFF, Friends of the Teton River, Trout Unlimited and The Nature Conservancy. A first of its kind in Idaho, the collaborative program aims to find common ground and conserve water. It has already brought benefits to water resources and the health of the river at a more significant scale than ever before.

In the midst of very tough climatic conditions, 2022 became a test of this program. Farms and Fish projects provide benefits not only to water conservation, but to improved soil health, reducing wind erosion and sediment runoff, and benefits to water quality. Nearly 4,500 acres of farmland joined a portfolio of programs consisting of winter wheat conversion, irrigation deferment, cover cropping, soil testing, soil moisture monitoring, irrigation scheduling, and satellite imagery. This year, the program conserved 2,300 acre-feet of Island Park Reservoir storage through diverse Farms & Fish Program agreements. The impact is additional trout in the river and hope for even larger conservation outcomes in the future.

Looking ahead, HFF is partnering with the Conant Creek Canal Company and Fremont-Madison Irrigation District to improve the existing irrigation infrastructure that diverts water from Conant Creek, a tributary to the Fall River, and line the canal to eliminate seepage loss that isn't providing meaningful benefits to either farms or fish. In May of 2022, the project was awarded a U.S Bureau of Reclamation WaterSMART Water and Energy Efficiency Grant for \$1.095 million, approximately half the project cost. The project is now underway and HFF is gathering the necessary matching funds for the project.

The outcomes of this project will:

- Help regional farmers to create more efficient and resilient production systems
- Benefit Yellowstone Cutthroat Trout in the face of increasing pressures from lasting drought conditions
- Increase streamflow within the creek during July by an average of 13 cfs (39% increase over current conditions)
- Save an average of 1,987 ac-ft/year of storage water in Island Park Reservoir (1.5% of reservoir capacity)
- Improve aquatic habitat, connectivity, and ecological resiliency for cold-water species in Conant Creek, Fall River, and the Henry's Fork River, especially during the most thermally stressful summer months. 🐟




South Fork Initiative Update

The South Fork has also faced drought conditions this year. The good news is the South Fork Initiative continues to conduct more crucial work throughout the South Fork Watershed to benefit the fishery.

Water Quality Monitoring – Three sondes (in-river monitoring devices) collect data on water temperatures, turbidity and more and transmit that information to a website to view in real-time. View that data at henrysfork.org under “Resources -- River Conditions.”

Restoration – Phase 2 of Rainey Creek Restoration is underway as of this fall. Since 2018, the critical work on Rainey Creek has restored 1.56 miles (8,200 feet) of stream for Yellowstone Cutthroat Trout and other native species. Over 18 partners collaborated on this effort led by the Idaho Department of Fish and Game.

Aquatic Macroinvertebrate Monitoring – Each spring, aquatic insect monitoring takes place to collect baseline information and track changes in insect populations throughout the South Fork. Monitoring takes place in the upper, canyon, and lower reaches. View the most recent results on our [blog](#) under “South Fork.”

Education and Outreach – Local students have enjoyed field trips to restoration sites, learned about water quality and aquatic insect sampling, and have even contributed to restoration efforts through seedling propagation and planting of native willows grown in their school greenhouses. 

MAKE THEIR FUTURE YOUR LEGACY



Help secure the future of many generations to come of wild trout and the opportunities to enjoy them through gift planning. A bequest or beneficiary designation can do big things for our mission and your legacy.

For more information about the Henry's Fork Foundation Legacy Society and planned giving please contact:

Gordon L. Nelson, CPA, CFP®
Planned Giving Specialist
Email: legacy@henrysfork.org
Phone: 435-213-9986

Visit our new planned giving website at: www.HFFLegacy.org.



In Memoriam: Rear Admiral James Bernard Greene Jr.



Rear Admiral Greene left an immeasurable legacy at the Henry's Fork Foundation through his limitless generosity and ability to advise and lead. Jim was one of the founders and sponsors of the Rear Admiral Greene Colgate Internship at HFF. This internship has helped over 20 Colgate University students to receive invaluable professional experience at HFF while also aiding in HFF's mission for the last 22 years. Jim served as an HFF Board Member from 1994-2000, and as Board Chair from 1995-1998, where he devoted many hours to protecting the lands he loved so well and inspired others to do the same. Jim will be greatly missed, but his greatest legacy (his love of nature) will continue to influence others to protect and conserve the beautiful Henry's Fork watershed as they remember his sunny disposition and passion for the world around him.

Jim's obituary can be found [here](#).

FAQ - How does turbidity end up in reservoir outflow?



1. Heavy rain or snowmelt runoff that delivers sediment from tributaries into the reservoir (can happen at any reservoir volume).
2. Erosion of exposed shoreline sediment by rain (can happen when reservoir gets below around 70% full (95,000 ac-ft)).
3. Mobilization of exposed shoreline sediment by strong wind waves (happens at same elevations as rain erosion).
4. Mobilization of bottom sediments on the West End by rapid reservoir turnover (rapid cooling of the reservoir surface due to weather changes in the fall; can happen at any reservoir level).
5. Transport of suspended sediment from the West End by rapid cooling (same mechanism as above in the early autumn).
6. Erosion of sediment on the bottom of the reservoir by river inflow (happens when reservoir gets below around 35,000 ac-ft (26% full; average end-of-season volume is 44% full)).
7. High outflow through gates (total flow > 960 cfs OR power plant can't run at full capacity for some reason, e.g., can't meet dissolved oxygen requirement).

More information, including what HFF is doing about this, found [here](#).

WHAT ARE THE SOURCES OF TURBIDITY?

1. Mineral sediment mobilized from reservoir bottom or suspended in the reservoir water column (most common source).
2. Growth of algae and cyanobacteria (aka "blue-green algae") in the reservoir (dominant source during reservoir turnover in spring and fall and also during mid-summer blooms when reservoir conditions deteriorate, e.g. in 2016).



2022 Education and Outreach Year Overview

This year HFF has engaged in multiple education and outreach events, and there are more upcoming! HFF's education and outreach program helps community members and local youth feel connected to the local watershed.

Harriman Field Trip

On 9/26 Harriman and HFF staff taught students from the Exploring Idaho class at Madison Jr High about conservation, water quality, and fish. Senior Scientist Rob Van Kirk spoke about water quality, macroinvertebrates, and how to interpret scientific graphs.

Youth on the Fly 2022

In August, 12 upcoming 6th graders from Ashton Elementary participated in Youth on the Fly! Students learned about macroinvertebrates, tied their own flies, learned how to cast, played engaging games, and practiced fishing the Warm River!

Fall River Clean-Up

Thanks to the volunteers who helped with our fall river cleanup! Volunteers floated the Big Springs Water Trail and removed trash from access sites as well as helped remove canned corn at Big Springs.

Rigby Cub Scouts

On 8/3 HFF staff met with a Rigby Cub Scout group at the Buffalo Fish ladder to teach the scouts about water quality, the fish ladder, and conservation!

Don C Byers Memorial Internship

This year marked the 25th anniversary of the Don C. Byers Memorial Internship! To mark the occasion, the Byers family, led by Don's nephew Evan Byers, hosted 2 interns throughout their experience (Hailey Philipps and Nathan Nadal), as well as made a \$2,500 donation to Eric Billman, a standout professor in the Wildlife and Fisheries program at BYU Idaho! 🐟

DID YOU KNOW?


HFF has over 35 projects or programs ongoing on the Henry's Fork this year. A few of those include:

- Water sampling, water quality monitoring, and live data website
- Aquatic insect monitoring
- Farms & Fish Program
- Precision Water Management
- Fish habitat and nutrient PhD research on the Upper Henry's Fork (Big Springs to Island Park Dam)
- Lower Henry's Fork groundwater analysis PhD research
- Weekly ADCP flow measurements below Island Park Dam
- River clean ups
- Conant Creek Canal project
- Youth Education: Trout in the Classroom, Youth on the Fly and local school field trips
- Fish ladder monitoring and maintenance
- Riparian fence monitoring and maintenance
- River access and other Voice of the River work

To learn more about these and other projects, watch our [Annual Membership Meeting](#) on YouTube.

Impact for Fisheries

Water conservation -- via programs like Farms and Fish, Precision Water Management and the lower Henry's Fork PhD research -- has increased winter outflow from Island Park Dam by an average of 115 cfs since we began our efforts in 2018. This increased the number of two-year old fish entering the Box Canyon population by 775 (16%) in 2019, 855 (23%) in 2020, 310 (8%) in 2021, and 380 (13%) in 2022. Tracking these cohorts of fish through time, water conservation has increased the total population by 7% in 2019, 14% in 2020, 11% in 2021, and 21% in 2022. Even at the current level of water savings, the long-term average contribution to the population is 980 fish, which will increase the population by an average of 15% relative to pre-2018 levels.



Contributions: July 1, 2021 - September 30, 2021

\$10,000+

Gary and Cathy Gross
Jackson Hole One Fly Foundation
Sandy Pfisterer
US Fish and Wildlife Service

\$5,000+

Greg Benedict
Sarah and Jeffrey Bridich
Flat Rock Club
Shane and Lorre Fleming
Friends of the Teton River
Jon and Karyn Hodge
Elliot Hulet
LambWeston
Stuart and Frances Lange
David and Sally Long
Todd Martindale
Ron and Mary Miller
Susan and James O'Neill
Lon and Zoe Richardson
Thomas Stredwick
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\$2,500+

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Maunsel and Ann Pearce
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\$500+

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Brian Schmidt
Rob and Sheryl VanKirk
Paul Waldon
Jonathan Williamson
WorldCast Anglers

E. Paul Wood

In Memoriam

Rear Admiral James Bernard Greene Jr.
Jack Roberts

Congratulations and Thank You to our 2020-22 HF Day Award Winners

2020

Gary and Cathy Gross
Manlove Award Recipients

Friends of the Teton River
Conservation Award Recipient

Tim Hopkins
Volunteer Award Recipient

2021

Jack and Janet Roberts
Manlove Award Recipients

Joselin Matkins
Conservation Award Recipient

Tim Hopkins
Volunteer Award Recipient

2022

**Stephen G. & Susan E.
Denkers Family Foundation
and Willard L. Eccles
Charitable Foundation**
Manlove Award Recipients

Murdock Charitable Trust
Conservation Award Recipient

John and JoAnne Gaynor
Volunteer Award Recipient

Support the Henry's Fork Foundation by giving a **YEAR-END GIFT**

Together we are the Voice of the River and together, we will ensure the incredible experience of fishing the Henry's Fork and South Fork is available to the next generation of anglers yet to discover it.

With a donation of \$50 or more, you will receive gifts that will make your time on the river even better!

Visit henrysfork.org/year-end-giving today.



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