



### DIGGING DEEP FOR THE BIGHORN

There is no question that the 2023 season was a challenging one for the Bighorn River. In this newsletter you will read how historic summer rainfall events challenged the work of water managers, the fishing experience of anglers, and the robustness of the wild trout fishery. While adapting to fluctuations in river flows, be it drought or high water, is inherent to the Bighorn/Montana fly-fishing experience, what sets this year apart is the action taken by BHRA to improve the river's response to such events. This year, we dug deep to improve the resiliency of the Bighorn River.

In September, BHRA restored 5 disconnected/low functioning side channels back to connection with the river main – our largest investment to the health and viability of the river to date. This work, which involved excavating 3,540 cubic yards of material from channel entrances and within their lengths, brings the total number of side channels restored back to the river by BHRA since 2021 to seven. For wild trout, this equates to 3.42 miles of new, accessible habitat between the Three Mile FAS and the St. Xavier Bridge.

The consequence of this work is substantial. By increasing complex habitat availability during low flow years and providing off channel spawning and rearing habitat during high flow years, BHRA works to improve the survivability of wild trout during challenging water years. Furthermore, we have plans to restore between 4-6 additional channels in 2024.

The magnitude and scale of work we are accomplishing together on the River is remarkable, the momentum exciting. Thank you for helping BHRA work within a complex landscape to preserve a river that is important to your experiences, memories, and legacy. Together, we bring resiliency to the Bighorn and to each other.



Scan to Learn  
More About  
Side Channel  
Restoration

### DIG DEEP FOR THE BIGHORN



**MAKE A YEAR-END DONATION TO THE BHRA  
& HELP US REACH OUR GOAL OF RAISING \$55K  
FOR THE BIGHORN!**





3333 2nd Avenue North #170  
Billings, MT 59101  
info@bighornriveralliance.org  
(406) 534-2915  
www.BighornRiverAlliance.org

#### BOARD OF DIRECTORS

<b>Board Chair</b> Harry Miller Billings, MT	Bob Dickens Smithfield, NC
<b>Vice Chair &amp; WTS Chair</b> John Sindland Fort Smith, MT	Rick Gehweiler St. Xavier, MT
<b>Secretary &amp; Governance Chair</b> Don Jackson La Grange, IL	Doug Haacke Billings, MT
<b>Treasurer &amp; Research Chair</b> Jim Chalmers Billings, MT	Tom Hansen El Paso, TX
Dante Bonanini St. Xavier, MT	Steve Hilbers Fort Smith, MT
Shane D. Colton Billings, MT	Mike Kelly Fort Smith, MT
	Rick Law Fort Smith, MT
	Mike Parnell East Sound, WA
	Scott E. Stevenson Boulder, CO

#### STAFF

Anne Marie Emery  
Executive Director

Melissa Lombardozzi  
Membership & Outreach Coordinator



Submit a year-end donation in the mail, online or by calling the BHRA office to be entered to win!

/BIGHORNALLIANCE

BIGHORNALLIANCE

@BIGHORNALLIANCE

## 2023 YEAR IN REVIEW

A successful wild trout experience on the Bighorn River is dependent on the environmental factors that impact it, decisions of the agencies that manage it, and the expectations of the anglers who fish it. Unlike the past two years, the 2023 season on the Bighorn was one of precipitation extremes, extremes that challenged managers and anglers alike. Below are summaries of the 2023 season from the water, fisheries, and fishing perspectives provided by our working partners from the Bureau of Reclamation (BOR), Montana Fish, Wildlife & Parks (MFWP), and local fishing guides.

### BIGHORN RIVER FLOWS



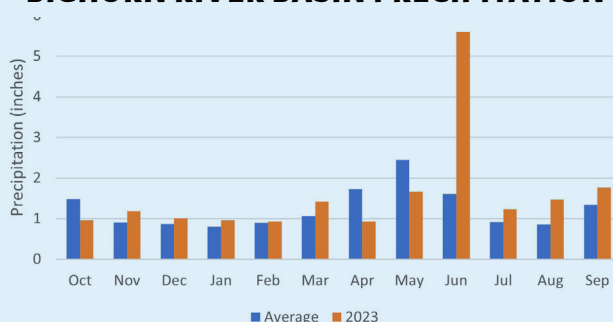
**Clayton Jordan,**  
Supervisor, Bureau of Reclamation

The biggest influence of the 2023 water year on the Bighorn River was precipitation, specifically rainfall received throughout the basin in the month of June. While snowpack levels and runoff forecasts were near average through June 1st, water operations and forecasts were challenged with concurrent spring storms that delivered record setting amounts of rainfall within a short 6-week period. In total, June of 2023 was the largest precipitation month on record for the Bighorn Basin since the period of record began 129 years ago.

Prior to the rain events of June, basin conditions were on average, nominal. Winter release rates at the beginning of the water year began at 2,410 cfs and increased to 2,750 cfs by the end of February. In April, flows were increased to 6,000 cfs based on forecasted inflows into Bighorn Lake. In May, forecasts were showing drier than average conditions, and snowmelt was melting out earlier than normal. As snowpack decreased, so did inflow forecasts, and those factors in combination with drier than average conditions, led to river flows decreasing to 3,000 cfs.

In June, significant precipitation events occurred weekly. Upstream reservoirs (Boysen and Buffalo Bill) quickly approached full storage capacity and started passing more water. This raised inflows into Bighorn Lake above 12,000 cfs in early June, with inflows peaking at 23,300 cfs on June 25th - the highest daily average inflow into Bighorn Lake since 1967. With all that inflow occurring in a short time, releases on the Bighorn River were increased to 16,000 cfs for a seven-day period on June 26th - the highest release rate the river has experienced (post dam construction) since 1967. On July 3rd, BOR (Bureau of Reclamation) started decreasing river flows, with decreases continuing throughout July until the flood control pool was evacuated and a river flow of 4,000 cfs was reached by months end.

### BIGHORN RIVER BASIN PRECIPITATION



Throughout the summer, much water was released through the Yellowtail Dam spillway (top of reservoir) and river outlet works (bottom of reservoir) due to high releases, and several maintenance activities. Western Area Power Administration

(WAPA) is performing ongoing transmission line upgrades that limited power generation throughout the summer, and repair work on the Yellowtail Dam spillway has kept the Afterbay Reservoir lower than normal for an extended period.

Currently, river flows remain at the 3,500 cfs release

rate and all reservoirs in the Bighorn Basin have ended the water year (September 30th) with above average storage. With forecasted inflows, winter releases for the Bighorn River (defined as the period between November and February) are expected to remain greater than 3,000 cfs.

## THE BIGHORN FISHERIES



**Demi Blythe,  
FWP Fisheries Biologist**

Montana Fish, Wildlife and Parks (MFWP) monitors the Bighorn River at two sites to assess the population dynamics and trends of wild trout downstream of Afterbay Dam. We performed our annual spring survey below the Three Mile Access site

in April and estimated abundances of brown and rainbow trout greater than 7" to be 1,033 trout-per-mile and 508 trout-per-mile, respectively (Figure 1). While these estimates are lower than 2022, we did observe high body condition, meaning healthy, beautiful trout and sampled a large number of spawners in the 15-19" range. We completed the Mallard's Landing Fishing Access site survey in October, and like the upper section, observed slightly lower numbers for rainbow trout compared to 2022, but also observed a slight increase in brown trout numbers compared to 2022. We estimated the abundances brown and rainbow trout greater than 7" in the Mallard's section to be 642 trout-per-mile, and 619 trout-per-mile, respectively (Figure 2). We observed evidence of good recruitment for brown trout, capturing many under 6", but did not capture any juvenile rainbow trout (<6") during the fall survey. However, we captured many available spawners of both species, especially in the 8-11" range.

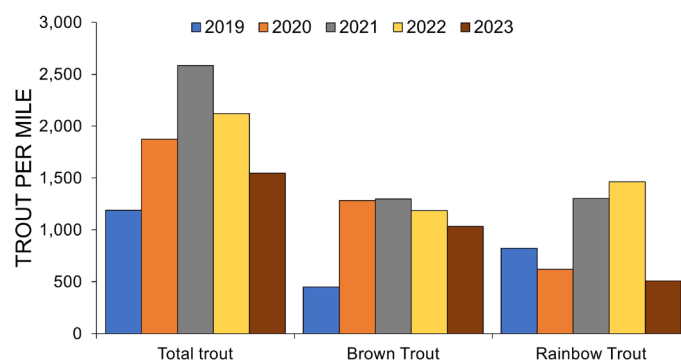
The lack of rainbow trout less than 6" in our recent fall survey and the lower population estimates in both sections suggests either increased mortality or that a proportion of the trout population had moved out of the MFWP monitoring sections during the sampling period. These effects could be combination of high flows scouring important spawning areas during the rainbow trout spawn, warmer than average summer/fall water temperatures, and potentially increased fishing pressure.

In September, MFWP used data from the BHRA water quality program and the BHRA real-time river temperature gage to work with BOR to release flow gradually from between the penstock intake and the river outlet (~150 feet

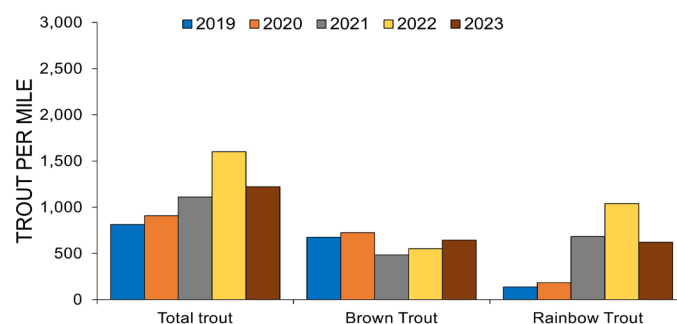
lower) to prevent water temperatures from abruptly changing 25 degrees during the BOR's maintenance shutoff of the turbines. These coordinated efforts were beneficial in reducing additional stress from wildly fluctuating water temperatures to the wild trout population and are an important example of good communication with partnering agencies.

Although it is too early to predict how the 2023 high flow event affects Bighorn River wild trout, MFWP will continue monitoring trout populations, assess harvest regulations, growth and carrying capacity moving forward. We also hope to establish a roving creel survey, which will increase understanding of trout population dynamics and angler pressure. Working with partnering agencies is important for fisheries management such as the Bureau of Reclamation on adaptive water management and the Bighorn River Alliance on side channel habitat restoration and trout use of those habitats.

### THREE MILE ACCESS (upper section)



### MALLARD'S LANDING (lower section)





## THE FISHING ON THE BIGHORN



**John Sindland,  
Guide & BHRA Vice Chair**

To be frank, I found it challenging to put into words my thoughts on the angling this year. It had its fair share of highs and lows, and it could even be described as a year of extremes that led to both exceptional and challenging fishing conditions. It was a year that required anglers to adapt to warm-

er than average water temperatures, swift currents, and an abundance of aquatic vegetation.

Initially, everything seemed on track for a typical year, but Mother Nature had other plans. A significant 9-inch down-pour in the basin drastically altered our river flows, particularly in June. Flows that were once normal quickly surged to 16,000 cfs. This rapid increase in water flow presented an excellent opportunity for boat nymphing, with anglers using San Juan worms and adding substantial weight. Many guides believed it to be some of the best fishing of the season, lasting until mid-July. However, for those who preferred wading and dry fly fishing, the conditions were

undeniably challenging. Nevertheless, if you were keen on spot and stalk fishing, the period from the second half of July through September provided excellent opportunities for dry fly fishing, featuring black and tan caddis and tricos.

On a positive note, the fishing on the lower sections of the river, from Bighorn to Mallards and Two Leggings offered some rewarding experiences. I had the chance to speak with several long-term guides and anglers including Hale Harris, Pete Shanafelt, Mike Kelly, Paul Fitzgerald, Thor, Bryen Venema, and Rick Gehweiler, and when asked to rate the fishing on a scale from 1 to 10, we all collectively shrugged our shoulders and settled on a rating of five. It was a year filled with both enjoyable and challenging moments and really depended on the timing and duration of when you happened to be on the water. Some clients had great success, some not so much, but then again, that's fly-fishing.

In summary, when reflecting on the fishing year of 2023, it's safe to say that it remained quite rewarding. The condition and health of trout caught remained high, and even though the rainbow trout spawn probably didn't equate to much recruitment, the late season catches of lots of fish between the 8"- 10" range and the strong winter flows the river is set to have, offer encouragement for next year.

## RECOGNITION OF SERVICE

Great progress on the river stems from great leadership in the board room. The Bighorn River Alliance recognizes Harry Miller for his exceptional leadership as board chair of the organization from 2021-2023. Miller, who served as past president for National Trout Unlimited, Montana State Council of TU and the MT Trout Foundation, used his expertise in nonprofit leadership to steer the BHRA to success with unwavering dedication, strategic vision, and devoted mentorship. Miller will pass the reigns and responsibilities of board chair to John Sindland (current vice chair) in 2024, but looks forward to remaining active on the board of directors. On behalf of the Bighorn, thank you Harry!

GIVE A YEAR-END GIFT &  
BE ENTERED IN THE RAFFLE

All gifts \$50 or more receive a custom BHRA Christmas ornament from the shop of Bighorn River Guide, Brady Hefner.

