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ANNUAL
REPORT





BIGHORN RIVER ALLIANCE

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Front & back cover: Member Terry Bullington demonstrates a proper release. Photo by John Sindland.

THE MISSION OF

THE BIGHORN RIVER ALLIANCE IS TO PROTECT, PRESERVE AND ENHANCE THE LONG-TERM HEALTH AND VIABILITY OF THE BIGHORN RIVER RECOGNIZING ITS SIGNIFICANCE TO THE WILD TROUT FISHERY, THE AGRICULTURAL COMMUNITY, AND THE CROW NATION THROUGH WHICH IT FLOWS.



The Bighorn River Alliance is
donor-giving accounting

MESSAGE FROM THE EXECUTIVE DIRECTOR



The Bighorn River Alliance (BHRA) is proud to present its 2024 Annual Report showcasing the many ways we work to protect and preserve Montana's Bighorn River. This report not only highlights the

projects and programs that advance our mission but also stands as a testament to what our members and supporters make possible through their generous contributions.

The importance of your support is not lost on us. At a time when many watershed groups face programmatic cutbacks due to federal funding freezes, BHRA remains positioned to sustain and even expand programmatic initiatives, regardless of congressional decisions. This stability is possible because of the steadfast support of our members and our joint belief that building a strong system of support is vital to the well-being of the Bighorn River.

As you waded through this report, we hope you feel a deep sense of pride at what we have accomplished together. We also hope you feel a sense of inquiry and wonder, as we work to unravel the complex river processes and relationships that are unique and special to the Bighorn River. Your support is not just an investment in our programs—it is a commitment to the health of the Bighorn River and the future of those who rely on it.

Thank you for standing with us, for believing in this work, and for being a vital part of the Bighorn conservation story.

Anne Marie Emery
Executive Director



a true membership-based organization, with
for 86% of contributed revenue in 2024.

MEASURING IMPACT IN 2024

IN 2024, YOUR BHRA TEAM SPENT 230 CALENDAR DAYS IN THE FIELD AND AT IMPORTANT TABLES IN BENEFIT OF MONTANA'S BIGHORN RIVER.

1 FULL-TIME RESEARCH
ASSOCIATE HIRED

3 BIGHORN SIDE-
CHANNELS RESTORED

22 PRESENTATIONS
MADE TO FEDERAL
& STATE AGENCIES, NGO'S,
AND DONOR GROUPS

28 MACROINVERTEBRATE
SAMPLES COLLECTED

31 DRONE FLIGHTS
MONITORING
RAINBOW TROUT SPAWN

72 MILES OF WATER
QUALITY DATA
COLLECTED

365 DAYS OF REAL-
TIME RIVER
TEMPERATURES FUNDED

66K IN AWARDED
GRANT FUNDS

View BHRA's
Draft Sampling
& Analysis Plan



BIGHORN RIVER CLEAN-UP DAY

This past fall, BHRA continued its work to remove outdated fencing and old equipment from the Three Mile Access area. Collaborating with Bighorn Canyon NPS, Montana Fish, Wildlife & Parks and volunteers, over a mile of non-functional fencing was removed from the landscape, and a quarter of mile of functional fence retrofitted with smooth bottom wire to facilitate wildlife access. Over 1180 lbs. of material was removed from the effort and taken to a recycling facility to be repurposed. In 2025, BHRA will lead efforts to finish this multi-year effort, improving access and views for anglers, hunters and four-legged friends.



INCREASED RIVER MONITORING



In 2024, a comprehensive water quality monitoring plan was implemented to enhance understanding of the Bighorn River's seasonal variations. This plan involves monthly visits to Bighorn Lake, seven sites along the Bighorn River, and three significant tributaries. Additionally, quarterly grab samples are collected at these sites for laboratory analysis. Historically, data collection occurred only during the growing season, from late spring to early autumn. The new plan enables investigations into seasonal variability, providing a clearer picture of baseline conditions. This enhanced understanding of the river's annual changes establishes a solid foundation for identifying and addressing abnormalities through targeted projects.

WATER QUALITY PARAMETERS

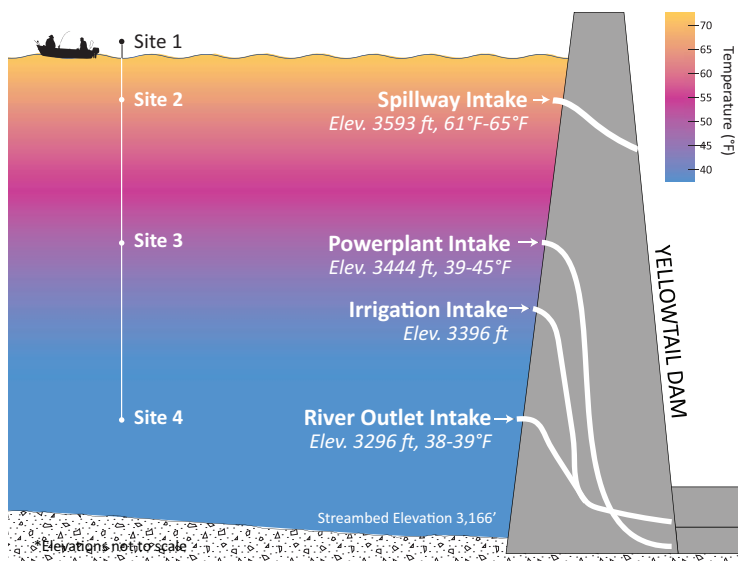
MONTHLY

- pH
- Temperature
- Conductivity
- Dissolved Oxygen
- Water Clarity

SEASONALLY

- Nitrate + Nitrite
- Total Phosphorus
- Chlorophyll α

BIGHORN LAKE STRATIFICATION



Non-scale representation of temperature stratification during the month of June.

BHRA monitors reservoir temperatures to learn how stratification of impounded water and its corresponding release from different outlets (Spillway, Powerplant and River Outlet) affect river temperatures. Seasonal data collected during the spring/summer since 2021 show that temperatures at the River Outlet remain consistently cold. The Spillway, near the surface, is affected by air temperatures, delivering warmer water during the summer. Temperatures at the Powerplant Intake are variable, especially in the month of July, as the thermocline (the narrow boundary between cold and warm water) deepens. From monitoring these patterns annually, BHRA calculates how the mixture of water between outlets will increase/decrease downstream river temperatures, informing water managers of best practice methods that can bring stability to the wild trout fishery during sensitive periods.

OUR RESTORED

After years of planning, interagency collaboration, and dedicated implementation, BHRA has successfully completed the reactivation stage of its multi-year Side-Channel Reactivation project on the Bighorn River. This milestone marks the largest multi-channel reconnection effort ever undertaken on a Montana tailwater fishery and stands as the most significant endeavor put forth by the organization since inception. After reactivation of three final channels in 2024, we are proud to share that nine Bighorn side-channels are flowing once again, returning 4.58 miles of complex river habitat back to the river and its wild trout.

The Bighorn Side-Channel Reactivation project is a story of how humans can work together to build river resilience.

Numerous studies conducted on the Bighorn River by federal and state agencies have documented that increased channelization of the river has, in the words of MFWP: “[decreased] side-channel habitat that is critical in maintaining the exceptional trout fishery of the Bighorn.” A 1990 thesis study found that the majority of wild trout spawning activity is associated with side-channels, which “account for 80.2% of redds counted.” Federal studies by USBR in 2010 and 2012 report “geomorphic complexity has decreased on the river since 1961 as side-channels have become abandoned” and that “mechanical opening of Bighorn side-channels serves as the best option to restore connectivity” as “Yellowtail Dam releases are not likely to reverse the trend on their own.”

BHRA has dedicated the past five years breathing action into the scientific recommendations cited above resulting in the nine restored channels we see today - five of which would be dry at the current river release of 2,250 cfs had action not been taken.

Now, we monitor if the connections sustain.

Will the side-channels maintain connection to the river over time? Will they function at minimum river flows? Will the designed channel entrances encourage sediment transport over accrual? Over the next five years we will work to answer these questions through annual geomorphic surveys, orthophoto documentation and frequent discharge readings,

monitoring that will require a heavy BHRA field commitment and sustained donor support.

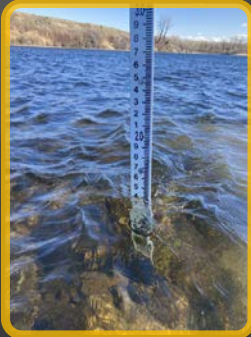
We may find we need to revisit some side-channels to make adjustments, discover some channels are not feasible to support, or that the urge of mainstem channelization is too strong to maintain certain connections. We may also find great success- leading to further channel enhancement projects, fish use studies and more restored channels.

For now, we celebrate with you the restored connections made possible through years of research, interagency collaboration and sustained donor support, while simultaneously mending our lines towards the monitoring stage of which we will work together to learn.



Between 2021-2024, over 5,000 cubic yards of material was excavated from 9 Bighorn side-channels, returning flow into channels during low-flow conditions and increasing complex river habitat by 4.58 miles.

CONNECTIONS



Staff gauges installed at channel entrances measure discharge/stage relationships over time.

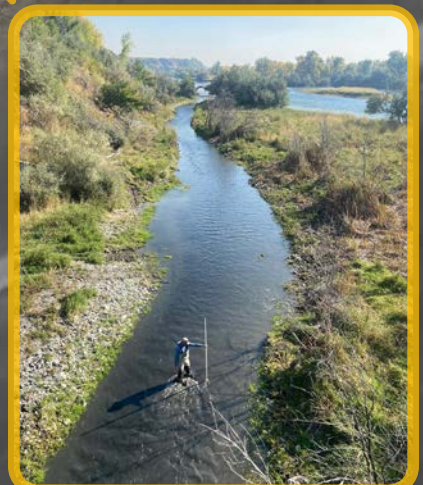


Field tours with state grant-funders showcase completion of reactivation phase.


*Learn more about
Bighorn River
Side-Channel
Reactivation.*



Annual drone orthophotography captures and compares the evolving responses of each side-channel post reactivation.



Annual post reactivation geomorphic surveys inform how side-channels adjust and settle following excavation.

An aerial photograph of a river. The water is dark, and the surrounding land is covered in dense, green and yellow vegetation. Numerous small, dark fish are visible jumping out of the water, creating a series of white splashes and ripples that form a diagonal line across the river. The fish appear to be small, possibly minnows or similar species, and their jumps are synchronized, creating a rhythmic pattern of white water against the dark river.

BHRA aims
to gain
insight into
how river
conditions
influence
the species'
ability to
establish
a robust
population.

COUNTING RAINBOWS

BHRA has taken to the sky to explore whether high-resolution drone technology can monitor the annual spawning activity of Bighorn River rainbow trout. By understanding the first stage of the rainbow trout reproductive cycle — where, when, and for how long the spawn occurs, BHRA aims to gain insight into how river conditions may influence the species' ability to establish a robust population. After several years of refining drone flight paths and image quality, BHRA successfully documented the rainbow trout spawn at three high use spawning complexes in 2024.

What is a Spawning Complex?

Spawning complexes, or spawning areas, are distinct locations on the river where wild trout congregate in large numbers to lay their eggs. These habitats are located along the banks of the main river or within side-channels where adequate spawning gravels, flows and water temperatures support egg rearing and development. From previous studies and angler observations, BHRA identified eleven major spawning complexes between the Afterday and Bighorn Access, three of which were monitored with a high-resolution drone in 2024.

2024 Drone Monitoring Effort

From the end of April through mid-July, BHRA floated the river every 5–10 days to collect photogrammetry and video footage of trout use at the three spawning complexes using a DJI Mavic Air 2 drone programmed with pre-determined flight paths. A total of 10–11 videos were collected per complex, which were later watched by two viewers to obtain average fish counts. The spawn was determined as “in process” by the presence/absence of fish within the complexes and “spawning peak” was determined by when fish numbers within complexes was highest.

Interesting Findings

From a total of 31 videos collected, BHRA found rainbow trout spawning activity as already “in progress” when monitoring began in late April, with a starting total of 52 fish counted within the boundaries of all three complexes. Subsequent videos collected through May showed a progressive increase in fish numbers with peak spawn observed on June 1st, with a total of 790 fish counted. Trout numbers remained high (>600 fish) within complexes until June 23rd, after which numbers decreased progressively until the monitoring period ended and cumulative fish numbers from all complexes decreased to 172 (Figure 1).

An unintentional consequence of this study was the docu-

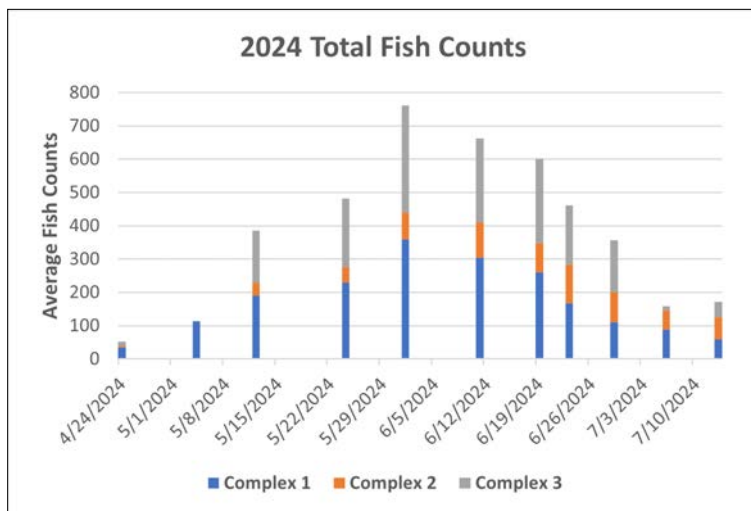


Figure 1: Rainbow trout observed within three spawning complexes from April 24–July 13, 2024.

mentation of angling pressure on complexes. From videos watched, BHRA observed anglers actively wading on redds or fishing to spawning fish 41% of the time.

Implications for Water & Fisheries Management

While the rainbow trout spawn is long and staggered, drone data in 2024 found that 48% of spawning activity occurred during the month of June, when flows are most variable. Interestingly, the peak spawn coincided with when a portion of flow was released from the Spillway Outlet of the Yellowtail dam, increasing river temperatures by 5 degrees for 11 days. Did the influx of warmer water encourage trout to move to spawning complexes, or does peak spawn happen annually in June despite flows and river temperatures? BHRA will repeat this study in 2025 to answer these questions, while sharing data with water and fisheries managers that can aid in management of the species, along the way.



Certified drone pilot Dennis Fischer collecting imagery during the 2024 spawning period.

2024 FINANCIAL RECAP

REVENUE

*CONTRIBUTED REVENUE	426,929.04
*EARNED REVENUE	92,625.00
TOTAL REVENUE	519,554.04

EXPENSES

PROGRAMS	286,713.03
ADMINISTRATIVE	57,429.45
FUNDRAISING	54,738.20
TOTAL EXPENSES	398,880.68

TOTAL NET INCOME	120,673.36
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CUMULATIVE NET ASSETS	722,007.81
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*Contributed Revenue= donations, grants & matching gifts

*Earned Revenue = license plate sales, merchandise sales, & boat raffle

2025 BHRA SURVEY

BHRA wants to hear from our members who fish Montana's Bighorn River. We want to learn what makes the Bighorn fishing experience important to you – what you value when on the water and what keeps you coming back to the resource. We also want to hear about your concerns regarding the river's future, to aid in discussions pertaining to BHRA's growth and direction.



PLEASE TAKE A
FEW MINUTES TO
COMPLETE THE
SURVEY



The strength of the Bighorn River Alliance lies in the commitment of our members and donors. Your support enables us to carry out our mission to protect, preserve, and enhance the Bighorn River. We're pleased to share that 2024 was another year of financial growth, with total revenue reaching \$519,554.04. Of that total, non-grant contributed income increased 11.8% over the previous year! Our total expenses were \$398,880.68, with fundraising and administrative costs making up only about a quarter of that total.

Most importantly, 72% of our expenses went directly to programs, demonstrating our commitment to Bighorn River conservation and the continued expansion of projects that protect the river's future.

Recognizing the importance of long-term sustainability, BHRA implemented an investment strategy in 2022 to ensure future research and project opportunities are well-funded. When cash holdings exceed operational needs, we allocate surplus funds into a short-term special project account and a long-term endowment, allowing us to act on emerging conservation opportunities while maintaining our ongoing research commitments.

The Bighorn River Alliance is dedicated to the river's health today and for generations to come. This is an exciting time of growth, and we invite you to explore the many ways you can support this vital work. On behalf of our board and staff, thank you for your continuous support—we hope you take pride in all we are accomplishing together. See you on the river!

John Sindland
Board Chair

EXPLORE ALL THE WAYS TO GIVE

STOCK SHARE TRANSFERS avoid capital gains and increase your charitable deduction.

DONOR ADVISED FUND (DAF) via our website or through your grant administrator.

IRA QUALIFIED CHARITABLE DISTRIBUTIONS (QCD) for those 70 ½ and older, you can meet your Required Minimum Distribution (RMD) & receive credit for a charitable contribution.

LEGACY GIFTS by naming BHRA as a beneficiary of your estate plan.

MATCHING GIFTS from an employer can double or triple your impact.

Wild Trout Society



HONORING OUR TOP SUPPORTERS

Every donation plays a vital role in the success of the Bighorn River Alliance, but the generous contributions from members of the Wild Trout Society (WTS) are essential to the organization's growth and sustainability. The WTS is a group of dedicated donors who commit a minimum of \$1,000 annually to support BHRA's general operations and research pro-

grams. In 2024, the below WTS donors collectively contributed an incredible \$275,000—accounting for 60% of BHRA's annual budget. We extend our deepest gratitude to these steadfast supporters who provide the foundation upon which BHRA continues to grow and increase its impact on the Bighorn River.

2024 WILD TROUT SOCIETY MEMBERS

\$50,000 +

Sam & Barb Jampolis

\$20,000 - 49,999

Ryan Majerus *w/Stryker Match*

\$10,000 - 19,999

James & Josie Chalmers

Holdfast Collective

Jim Lyon

Parnell Family Foundation

Allen & Michelle Neelley

Dee Rolph

\$5,000 - 9,999

Jim Brownlie

Jim Graham

Jamie Greene

Don Jackson & Beverlee Nelson

Simms

\$2,500 - 4,999

Brad Boone

John & Michelle Chalmers

The Charles Piper Cost Foundation

Clay Crawford

Mary F. Emery

Wink & Libba Hartman

David Hawes

Steve & J.J. Hilbers

Sam & Carol Mavrakis

Randy & Alice Randolph Jr.

Edward Rossi

Toby Swank

Michael White

\$1,500 - 2,499

Big Horn Valley Ranch

Joe Bruno

Steve Buterbaugh

Carolyn Chalmers & Eric Janus

Jerry Connolly

Dave Cottengim

Dwight Duncan

Mike Engel

Mari Hill Harpur

Tom Holtz

Gordon Keane

Mike Kelly

Steve Lerner

Clowie McLaughlin

Paul Mesack

Harry Miller

Matthew Nicoll

Refuge Foundation

Jack & Pat Shelton

John & Debbie Sindland

Edward Spalty

Dale Spartas

Stuart & Danny Tanner

Steve Whisler

\$1,000 - 1,499

Brian Aamlid

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Peter Bachman

Bighorn Trout Shop

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Camp 6X

Pat Cathey

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Confluence Consulting, Inc.

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William McMaster

Larry Pollard

Don & Elizabeth Rogers

Mike Stevens

Dan Stockton Jr.

Hal Tearse

Michael Thomas (SigEp

Brothers of the Bighorn)

Michael & Shirley Trapp

Neil Trask

Dan Vermillion (Sweetwater

Travel Company)

Tom Welsch & Stephanie Dubravac

Steven Zuckerman

For a complete list of 2024 donors see our digital Annual Report at www.BighornRiverAlliance.org



BIGHORN RIVER ALLIANCE.ORG



THANK YOU TO EVERYONE WHO HAS SHOWN SUPPORT FOR
THE BIGHORN THROUGH THEIR CONTRIBUTIONS OF IDEAS,
CONCERNS, AND BOTH PHYSICAL AND FINANCIAL RESOURCES.