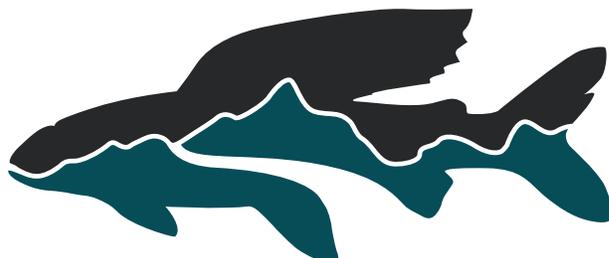


Free Flows

A Quarterly Publication

Spring 2015

This Issue



BIG HOLE RIVER
FOUNDATION

Last Chance Sweetgrass Rod Raffle
Board Member News
Kid's Day on the Big Hole
Annual Road Clean-up
Trivia Night at Quarry Brewing
Trout in the Classroom
Brown Trout Fungus on the Big Hole
Science Fair Award Winners

2015 Events

Nov 2014 to May 2015
- Sweetgrass Bamboo
Fly Rod Raffle

April - July 2015 -
Hyde Drift Boat Raffle

May 2 - Kid's Day on
the Big Hole

May 2 - Drawing for
Sweetgrass Fly Rod

May 13 - Annual Road
Cleanup in Divide

July 18 - Big Hole
River Day

July 18 - Drawing for
Hyde Drift Boat

The Big Hole River Foundation's mission is to conserve, enhance and protect the free-flowing character of the Big Hole River, its unique culture, fish and wildlife.

2015 Hyde Drift Boat Raffle

"Montana Skiff"

The Hyde Drift Boat Raffle for 2015 will be a "Montana Skiff" complete with trailer, seats, oars, locks, storage boxes and ready to fish. Raffle tickets for the Hyde Drift Boat are available now and can be ordered using the form on Page 8. Please adhere to any raffle laws in your state.

New this year is a Second Chance Drawing. For every bundle of 6 for \$100 boat raffle tickets purchased, you will receive one chance to win a 9' 5 wt. graphite fly rod courtesy of Zac Sexton and Rudy Ketchum at Montana Rodsmiths.



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President's Message

We call this our Spring issue of the Newsletter but generally spring has yet to arrive in southwest Montana by early April when this issue is normally published. This year is different. Spring has been here for weeks already – pretty much through the whole of March, with warm days, night-time temperatures that often remain above freezing on the valley floors, and little or no precipitation. We may be in for a long, dry summer.

Otherwise, the outlook is generally good for your Foundation and the Big Hole River. Planning for Kid's Day, to be held May 2 at Meriwether Ranch in Melrose is well under way and we already have commitments from many of its sponsors (see page 4.)

Mike Bias finished work on the latest pamphlet of our Technical Guidance Series addressing the life cycles of 'bugs' in the River and changes in their populations as indicators of the health of the River. The pamphlet has been well received and the data indicate that river health is good and has been improving over the last few years, although we haven't been able to determine exactly why that is based on the data to date.

Mike and Board member Bill Melvin are both angling for appointments to the panel that will be charged with reviewing the existing River Recreation Rules this year and making recommendations to Montana Fish, Wildlife and Parks for appropriate changes in the rules. With the work your Foundation has been doing to conserve, enhance and protect the River, and the work it's done to document, scientifically, the River's ecological profile, the hope is that both Mike and Bill will be seen as unselfish advocates for the River, and that both will be appointed.

The raffle for the 8'3" hexagonal bamboo fly rod, made by Sweetgrass Rods in Twin Bridges, has been going well. The drawing will be held at Kid's Day on May 2, so you have a week or two left to buy tickets and support our efforts on the River.

Finally, the planning for Big Hole River Day, to be held July 18 in Melrose is proceeding smoothly. We hope to expand the celebration this year with the addition of several brew pubs to the family of exhibitors. Please plan to attend. It's our biggest fundraiser of the year.

Thanks again for your continued support of the Foundation. We're using your contributions carefully, ensuring that the River benefits from each of them.

Tom Welsch

Executive Director's Message

Dear Members and Supporters:

Don't worry, be happy. At least that's what the popular old song said over and over. However, with these above average temperatures and watching the snowline crawl higher-and-higher on the mountains so far this spring, not worrying about August and September flows is a bit tough. Although the lower elevation SnoTel sites are out of snow – Calvert Creek, elevation 6,430', lost it's snow on March 31st; our higher elevation snowpack remains. In fact, SnoTel site Darkhorse Lake, elevation 8,600', was right at 112% of average snow-water equivalent on March 31st. As Mike Roberts, Hydrologist for the Montana Department of Natural Resources, always puts it, "we've lost our valley snow, but this higher elevation snow is what's responsible for carrying us through July." And, there is still time as we typically accumulate snow at higher elevations in the Big Hole Watershed into the second week of May. I remain hopeful for great summer flows.

I was pretty psyched this late winter, as we were invited to present the results of our bug work at the Annual Meeting of the Arctic Grayling Recovery Program. Our bug work in the upper Big Hole is helping to show that all the ongoing grayling conservation work is improving river health in the upper Big Hole. Beginning in 2014 and with the cooperation of Montana Fish, Wildlife, and Parks (FWP), we began monitoring 15 additional sites to determine, specifically, the contribution of private-land conservation management practices on stream health. We will assess this by monitoring benthic macroinvertebrate assemblages among 'pristine' unaltered streams, degraded streams that are undergoing conservation management practices to improve their biological health, and degraded streams that are not undergoing any management practices. Field work on this project will begin mid-April this year.

We were also invited to present the results from the trout-tagging study at the Fishing Outfitters Association of Montana (FOAM) Annual Meeting in Bozeman during March. Through this work, we showed that most brown (61%) and rainbow (68%) trout remain within the same reach in which they were tagged. We also found that brown trout grow 1.6 times faster than rainbow trout and over twice as fast as the native trout in the Big Hole, westslope cutthroat trout.

Spring time also has us diligently writing proposals. We'll be submitting several proposals to help us fund the Moose Creek Meadow Stewardship Fence Project that will manage grazing through fencing riparian areas along the mile reach immediately upstream of Interstate 15. The Fish and Wildlife Service's Partners for Wildlife is onboard with helping us fund this project.

We will soon be helping the Twin Bridges School raise trout from eggs and release them into nearby ponds. We were successful in getting a grant from the Soil & Water Conservation Districts of Montana to purchase all the necessary equipment to bring the Trout in the Classroom Program to their school. We are awaiting word from other proposals to see if we can get the aquariums, chillers, and filters necessary to bring the same program to the Melrose School.

As always, THANK YOU for making it possible for us to "conserve, enhance, and protect" the Last, Best River. Thank you for your time and support!

Respectfully,

Mike

Thank You

We are grateful for the following members and donors who have renewed or made recent contributions and gifts in support of our mission as of April 13, 2015.

Every effort has been made to maintain accuracy. If we have made any errors, please call 406-560-7089 or email bhrf@bhrf.org.

Donations

Chris Gammons & Colleen Elliott
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Charles Schultz
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Drawing May 2, 2015

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Board Member Updates



Steve Clark

Board member Steve Clark recently resigned due to job commitments in Texas.

Steve is a physician and researcher and former medical school professor. He brought a unique view to the Board of Directors and will be missed.



Joe McBride

Board member Joe McBride also recently resigned from the board due to time constraints with his numerous activities and other board memberships.

Joe was our treasurer and with a unique knowledge of investments, he managed our cash and stocks with expertise increasing our funds greatly. Joe will also be greatly missed.

We wish Steve and Joe the best in their new endeavors.

Kid's Day on the Big Hole - May 2, 2015

The annual Kid's Day on the Big Hole is Saturday, May 2 at Meriwether Ranch north of Melrose. This fun packed learning event for 75 area youth ages 7-13 features fly casting lessons, fly tying lessons, river safety, trout identification and a short float down the river with area guides.

Many volunteers and donors come together each spring for this important event. We welcome help with lessons, river watch, and donations for prizes. If you would like to volunteer or donate cash or merchandise for the event, please give Corky a call at (406)560-7089.



Annual Road Cleanup Date Set

Please join the board and staff members of the Foundation on Wednesday, May 13 for the annual road cleanup in Divide, Montana. We will meet at the Divide Bridge at 5:30 PM and pick up trash along the three mile section from the bridge in to Divide at the railroad crossing.

We will then head to the Hitchin' Post in Melrose for dinner and short board meeting. Everyone is welcome to attend.

Brain Rock Trivia Night at Quarry Brewing-April 7th

1. What is the source of the Big Hole River?
 - a. Storm Lake
 - b. Echo Lake
 - c. Bloody Dick Creek
 - d. Skinner Lake
2. The National Park Service manages an historic area on the Big Hole River. What is it?
 - a. The Lewis & Clark Expedition campsites near Glen
 - b. Jackson Hot Springs
 - c. The battlefield where the Nez Perce and U.S. army fought in August 1877
 - d. The 1820 mountain men rendezvous
3. The Big Hole River is home to many aquatic insects, including an insect that is somewhat rare in the river, though it exists along most of the length of the river. The immature form of the insect is called a hellgrammite. What is the adult insect called?
 - a. Green drake
 - b. Mother's Day Caddis
 - c. Dobson Fly
 - d. Salmon Fly
4. Which of these fish is native to the Big Hole River system?
 - a. Rainbow Trout
 - b. Brook Trout
 - c. Brown Trout
 - d. Sculpin
 - e. All of the above
 - f. None of the above
5. George F. Grant, founder of the Big Hole River Foundation, is remembered for many things. Which of these is not one of them.
 - a. Making billions on the stock market
 - b. Getting a patent for a fly-tying technique
 - c. An early leader of Trout Unlimited in Montana and founder of the Butte TU chapter
 - d. Fighting for stream access, conservation and environmental cleanup
 - e. Writing books and articles about fishing
6. Lewis & Clark named what we know as the Big Hole River the Wisdom River. Where does the name "Big Hole" come from?
 - a. The phosphate mines at Maiden Rock Bridge?
 - b. The massive crater near Jackson where a meteor struck in 1809
 - c. The volcanic caldera east of the Notch Bottom Fishing Access Site
 - d. Mountain men liked to refer to large open mountain valleys as a "hole"
7. In the 1930s, George F. Grant experienced, in his words, "a wonderful thing," he lost his job and spent much of the next few years renting a cabin along the Big Hole River and doing a lot of fishing and thinking of fishing and conservation. Where was his cabin?
 - a. In the village of Glen
 - b. Beautiful downtown Melrose
 - c. Wise River
 - d. Dewey
8. If you had lots of time and decided you were going to float the Big Hole River from its source in southwestern Beaverhead County to its confluence with the Beaverhead River, how many miles would you travel (as the crow flies).
 - a. 217
 - b. 122
 - c. 153
 - d. 174
9. For extra credit, if you did the trip in early July, how many mosquito bites would you pick up in the process? Round your answer to the nearest million.
9. The famous novella (and movie of the same name), A River Runs Through It, by Norman Maclean, tells the story of a father and his two sons, who loved to go fishing. Most of the fishing depicted in the story takes place on the Big Hole River. True or False
10. Montana's Last Best River: The Big Hole and its People, is a book published by Lyons Press and sales of the book benefit the Big Hole River Foundation. The author of the book is:
 - a. Mike Bias
 - b. Chad Okrusch
 - c. Matt Vincent
 - d. Pat Munday

See answers below

1. D. Skinner Lake is the official source of the Big Hole River
2. C. The NPS administers the Big Hole Battlefield
3. C. The Dobson Fly is the adult form of the hellgrammite.
4. D. The sculpin is the only one of these fish native to the Big Hole River system
5. A. George Grant was definitely not a wealthy person from playing the stock market. In fact, he raised the money to start the foundation by selling his personal collection of bamboo fly rods and fishing books.
6. D. It was the mountain men who came up with the Big Hole.
7. C. George Grant's cabin was at Dewey, and the Fishing Access Site at Dewey is now named the George Grant Fishing Access Site in his honor.
8. C. The length of the Big Hole River is 153 miles, and possibly not even God could count the number of mosquito bites you might pick up if you made this trip without adequate protection.
9. False. The river where the fishing takes place in the novella is the Big Blackfoot River, though most of the fishing scenes in the movie were filmed on the Yellowstone, Gallatin and Boulder Rivers.
10. D. Pat Munday, professor at Montana Tech, wrote the book.

Answers to trivia questions

Schooling Trout by Michael Bias, Ph.D.

We were successful in getting a grant from the Soil & Water Conservation Districts of Montana to purchase all the necessary equipment to bring the Trout in the Classroom Program to the Twin Bridges School. Principal Eldon Johnson of the Twin Bridges School said, "As you may know, our students and community are strongly tied to the rivers that run through the Ruby Valley. Increasing awareness of the life-cycle of trout and the quality of water needed in order for them to thrive will help our students become the next stewards of this area. This is why we are so excited to work together with the Big Hole River Foundation to create a large scale community project centered on the Trout in the Classroom."



Trout in the Class-room (TIC) is a

conservation-oriented environmental education program originally developed by Trout Unlimited for elementary, middle, and high school students. Through the school year students raise trout from eggs to fry and then release them into a state-approved cold water pond. The process of raising, monitoring, and caring for young trout fosters a conservation ethic within participating students and promotes an understanding of their shared water resources.

The immediate goal of TIC Program is to increase student knowledge of water quality and cold water conservation. The long-term goal is to connect a population of youth to the system of streams, rivers, and watersheds that sustains their culture.

To get the TIC Program started, Foundation staff met with administrators and teachers from the schools. Both were enthusiastic to incorporate the TIC Program into their curricula. The Big Hole River Foundation will fund staff time necessary to establish the TIC Program in the school. One complete aquarium setup and all necessary equipment and supplies will be needed for the school. Foundation staff will liaison with local fish hatcheries, state fisheries biologists, and local pond owners to obtain eggs and to prepare fish for release.

We are pretty excited to get this program started in the Big Hole. We are awaiting word from other proposals to see if we can get the aquariums, chillers, and filters necessary to bring TIC to the Melrose School.



BIOLOGISTS: RECORD BROWN TROUT POPULATION CONTRIBUTED TO SPREAD OF FUNGUS ON BIG HOLE

(Bozeman)—An outbreak of a fungal infection known as *Saprolognia* occurred on the Big Hole River in the fall of 2014. The outbreak was centered on a stretch of the Big Hole from Jerry Creek to Brownes Bridge affecting mainly spawning brown trout. Through their spring population surveys, fisheries biologists have recorded a notable drop in the brown trout population in that area. However, they conclude that the previous record high brown trout population in the river likely contributed to the spread of the fungus in 2014.

Saprolognia is a naturally occurring fungus present in nearly all waters at all times of the year. The immune system of healthy, non-stressed fish is able to combat the disease and these fish are not affected. Generally *Saprolognia* infects fish that are already diseased, stressed, or otherwise weakened. The infection appears as large, white, cotton-like blotches on the skin and fins.

Big Hole brown trout population surveys conducted in the spring of 2014, prior to the fungus outbreak, indicated numbers of fish in the Melrose area were at record levels of 1,871 per mile (compared to long-

term averages of about 960 per mile). The 2015 surveys show the population declined 824 brown trout per mile.

Biologist Jim Olsen says it's important to keep the numbers in perspective.

“While the decline from 2014 to 2015 was notable, the population is still only slightly below the long-term average for brown trout density. At the same time, rainbow trout density actually increased in that area from 291 fish per mile in 2014 to 436 fish per mile in 2015,” said Olsen.

Olsen also stressed that the high number of brown trout in the river likely contributed to the spread of the *Saprolognia* fungus in the fall.

“High population densities lead to close proximity of fish and higher spore production from the fungus, particularly at spawning areas leading to increased transmission of the disease between individuals. The high density of fish also likely lead to poorer condition of the fish going into the spawning season, and thus greater susceptibility to the disease.”

Big Hole River Foundation Drift Boat Raffle Ticket Order Form

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City, State Zip _____

Phone _____

RAFFLE TICKET ORDER

Species Spotlight ~ Wilson's Phalarope - *Phalaropus tricolor*

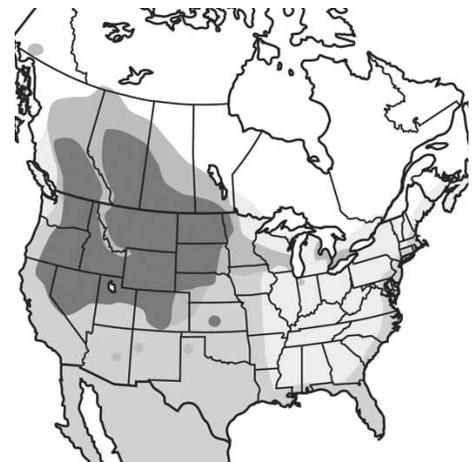
The Wilson's Phalarope is a slender shorebird in the Sandpiper family. The phalarope prefers shallow prairie lakes, fresh marshes, mudflats and in migration, salt marshes. They nest mostly at shallow fresh-water marshes in open country. During migration they may stop at ponds, coastal marshes and sewage treatment plants. They winter mostly on salty lakes in South America. Many of their nesting areas have been lost due to draining of prairie marshes but are still quite numerous.

Wilson's Phalarope is an odd shorebird that swims and spins on prairie marshes to stir up small invertebrates, mostly aquatic insects and crustaceans. They eat a variety of flies and their larvae, beetles, true bugs, and other insects, shrimp, copepods, and seeds of marsh plants. During autumn and winter on salty lakes, they may feed mostly on brine shrimp and brine flies.

Non breeding birds are pale gray above and white below. Breeding females have a gray cap, black stripe through the eye and side of neck, peachy-orange neck, and gray and rufous back. The males are duller with pale gray upperparts, orangey neck and white throat.

The females compete for males and one female may mate with more than one male during the season, leaving each of her mates to care for a set of eggs. In courtship, the female stretches her neck, puffs out her neck feathers, and makes a chugging call. The nest site is usually on the ground near water, sometimes a couple of inches above ground in marsh plants. The typical nest is a shallow depression with a slight lining of grass. The female may take the lead in choosing a nest site, but the male finishes the nest.

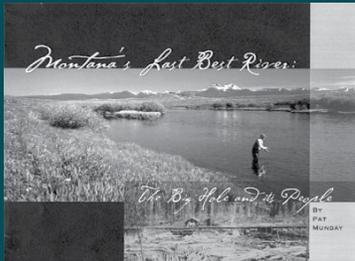
The downy young leave their nest within a day after hatching. The male tends to the young and broods them while they are small, but young find all their own food. Males may try to lure predators away from the nest or young by performing a broken-wing act. The age of young at first flight and age at independence is unknown.



BHRF Merchandise

The Big Hole River Foundation has books, logo fishing shirts, vests and hats for sale. To order, please visit our website at www.bhrf.org.

Montana's Last Best River: The Big Hole and it's People by Pat Munday.
George Grant signed edition \$59.95
Dave Whitlock print edition \$49.95
+ S&H



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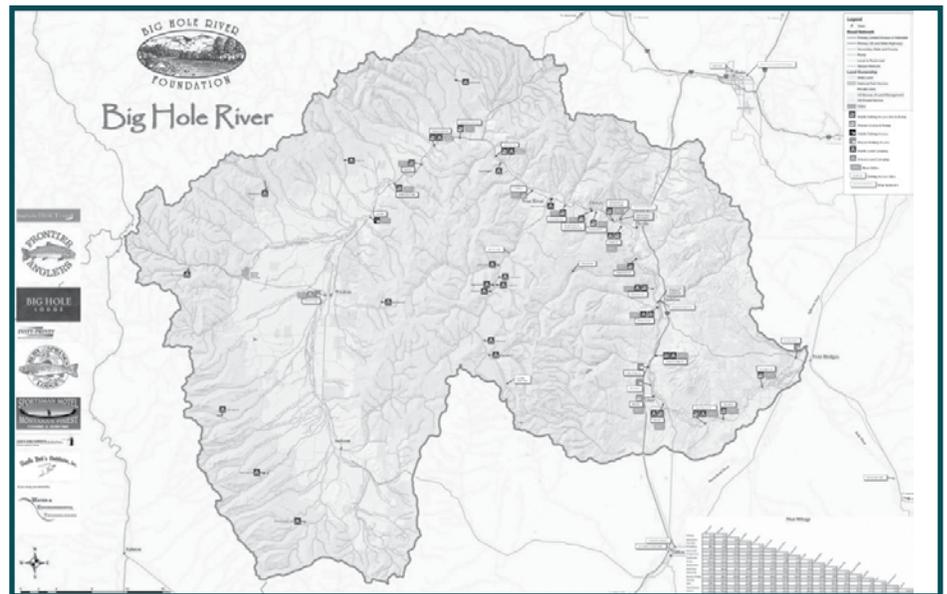


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These beautiful posters of Arctic grayling are worthy of fine framing
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Annual Science Fair Awards

Each year, Montana Tech hosts the annual elementary, middle and high school science fair. This year board member Sheila Youngblood and Sarah Sexton spent two days judging the projects for best aquatic habitat related topics. Each of the the three winners is presented with a \$25 cash award and a one-year membership to the Foundation.

The 2015 winners are:

Name: *Ella Prigge*
Level: *Elementary School*
Grade: *6*
School: *Whittier Elementary, Butte*
Topic: *Evaporation*



“I did my project on evaporation. I predicted that out of my 6 liquids, water would evaporate the fastest but actually, it was acetone!”

Name: *Nathan Popwell*
Level: *Middle School*
Grade: *7*
School: *Sacajawea Middle School, Bozeman*
Topic: *Finding the Best Fishing Lines*



Name: *Brenna DeMarois*
Level: *High School*
Grade: *11*
School: *Sentinel High School, Missoula*
Topic: *Use of Tertiary Algae System to Remove Pharmaceuticals from Wastewater*



“For my project I used an algae treatment system to remove pharmaceuticals from wastewater. I really enjoyed participating in the science fair, there is nothing like being able to share and learn new information from professionals in environmental fields. I am honored to be the recipient of your award this year.”

Congratulations Ella, Nathan and Brenna. And, thank you to Sheila and Sarah for your time spent judging this year.

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