

Free Flows

A Quarterly Publication

Summer 2016

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BIG HOLE RIVER
FOUNDATION

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.

Upcoming Events

July 16, 2016 Drift
Boat Raffle Drawing

July 16 - Big Hole
River Day

TBD - Sweetgrass Fly
Rod Raffle

Dear Friends of the Foundation

You are cordially invited to celebrate our 28th Anniversary at our Annual Fundraising Dinner on Saturday, July 16th at the firemen's hall in Melrose, Montana.

The evening will begin at 4 PM with social hour and live music followed by dinner and auctions. The highlight of the evening will be the drawing for the Hyde Drift Boat.

The limited number of tickets are \$25 each.
Please RSVP by July 11th.

Call 406-560-7089
Email bhrf@bhrf.org
BHRE, PO Box 3894, Butte, MT 59702
On-line at www.bhrf.org

Your support of our mission is deeply appreciated.

Big Hole River Day is an all-day event with pancake breakfast, vendors and artists, fly casting instruction, casting competition, kid's events, brew fest, live music and more.
Come early.

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President's Message

How quickly things change. When I wrote in the spring issue, I suggested that valley snow pack indicated we'd likely have a good water year. Then we had a long series of warm day-time temperatures that melted virtually all the snow from the lower elevations and seriously depleted the high-mountain snow pack. As a result the peak runoff this year was slightly less than 5,000 cfs at Melrose; whereas, 20 years ago peak runoff could be expected to exceed 7,000 cfs every year. Now we're half way through June. While we've had some rain this month the total rainfall has not been sufficient to brighten the outlook significantly. The numbers mean another low water year in all likelihood along with "hoot owl" fishing restrictions for much of the summer. As I've so often said in my June message over the last few years, think rain!

The other potentially big news concerns the Drought Management Plan (DMP) and outfitter fishing during the fall 'shoulder season,' which typically begins August 1. The DMP is a voluntary program begun by the Big Hole River Watershed Committee ('the Committee') to ensure that water volume adequate to protect the fishery remains in the River at all times. The Committee is a voluntary organization comprised of ranchers/irrigators and other landowners in the valley. Under the DMP the Committee has agreed that it will encourage its members to curtail water usage when low flows or high water temperatures endanger the fishery, both as determined by Montana Fish, Wildlife and Parks (FWP). There are flow and temperature 'triggers' spelled out in the DMP that activate the plan. When either trigger is reached, the Committee contacts the rancher/irrigators, who then voluntarily cut back their respective water usage to supplement flow levels and to limit further increases in water temperature, all for the benefit of the fishery.

FWP restricts the number of commercial guide days during the high-use months of June and July each year. The shoulder seasons bracket those high-use months. The spring shoulder season encompasses April and May, and the fall season encompasses August and September. The irrigation season generally begins in late May or June, and ends sometime in September.

The critical concept has been characterized as 'shared sacrifice.' The Committee says it is difficult to ask its ranchers/irrigators to curtail water use to protect the fishery when the guides are benefitting economically from the 'protected fishery' during the fall shoulder season. The spring shoulder season, of course, is not an issue because there is plenty of water and little irrigation demand at that time.

FWP has convened what amounts to an ad hoc group of stakeholders to look at the issue and try to arrive at an acceptable solution. Some months ago your Board discussed the issue and decided not to take a position on it or to participate in the stakeholder group. It seems that if the Committee prevails, presumably resulting in reduced guided fishing during the fall shoulder season, the fishery would likely benefit, but that is far from certain. At any rate our Mission is to "conserve, enhance and protect . . . the unique culture, fish and wildlife" of the valley. Guided fishing has been part of the culture of the valley since at least 1988 when the Foundation was established. Accordingly, the Foundation has conflicting interests in the dispute. Moreover, if the guides prevail, the Committee may elect to discontinue the DMP altogether, or it may have greater difficulty in getting significant commitments from its members to curtail water usage. This would certainly be detrimental to the fishery, virtually ensuring that FWP would close the River to all fishing during much of August and September most years. Non-commercial fishing has also been part of the culture of the valley since George Grant first fished it in the mid-twentieth century. Your Foundation cannot take a position that makes a fishing closure more likely.

Enjoy your summer, and don't forget Big Hole River Day on July 16th in Melrose. We'd very much appreciate your participation.

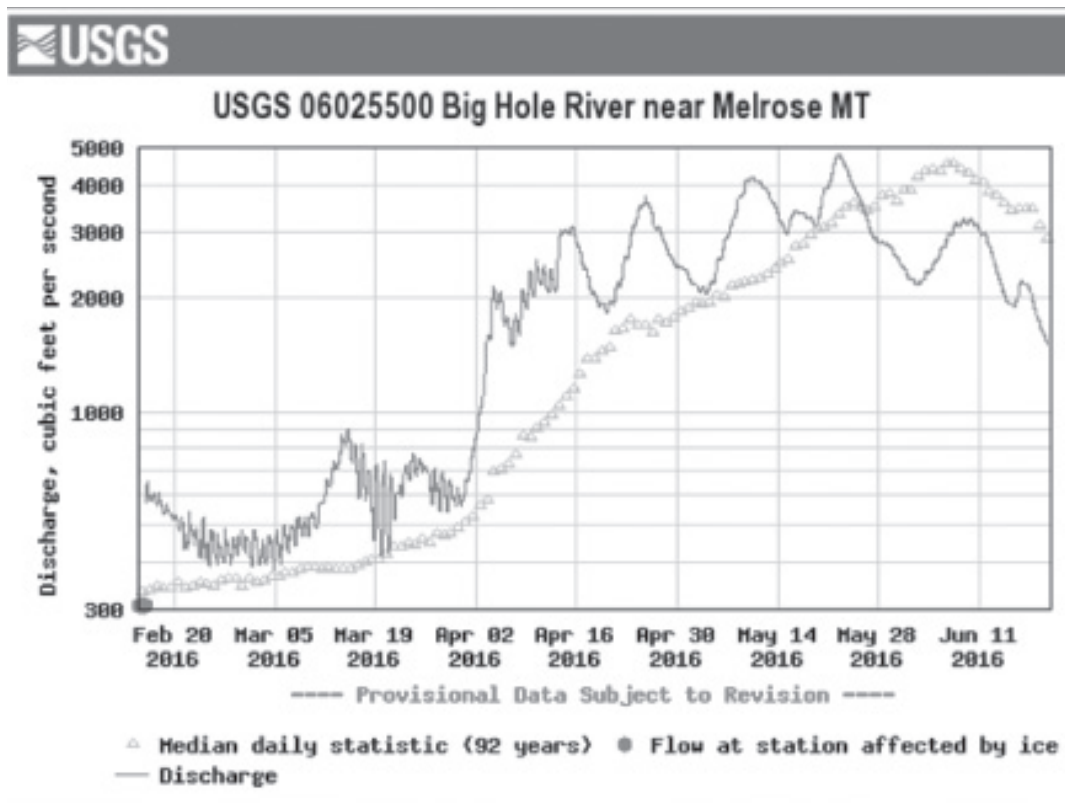
As always, we are interested in your thoughts on what we're doing and your suggestions on how to move forward, and thanks again for your continued support of our Mission.

Tom

Executive Director's Message

Dear Members and Supporters,

I write this on the first day of summer, and it sure feels like summer. Temperatures are climbing into the low 80s today. And, I suspect, what's left of the snow pack is melting fast. We have experienced an unusual snow melt this spring. Over the last few years it seems like every snow melt has been unusual and earlier. Big Hole River flow at Melrose today is 1,590 cfs (cubic feet per second), well below the median of 2,860 cfs over the last 92 years. Further, we have been above median flow since at least February 15th when the Melrose Gage became operational this year. Beginning the first week of April we went above the long-term median and have been above 2,000 cfs from April 9th until this week. Clearly, most of the snow melt started in April and continued through May. We are starting our summer flow as all the SnoTel sites in the Big Hole are at zero except for Darkhorse Lake, which only has 4.4 inches of snow water equivalent remaining. Let's hope for a cool wet summer.



Unusually high runoff from April through mid-June threw a bit of a wrench into our spring benthic macroinvertebrate sampling as we were unable to sample most sites because of dangerous flows. Most years we've been able to sample adequately in April before flows got too high, usually this is about 1,500 cfs at Melrose. We did manage to get samples at long-term representative sites during a low flow period the first week of June. Typically, we sample about 27 sites before mid-May and we'll sample again during summer.

Conservation-wise we are looking at doing two Stewardship Fence projects by this fall. These projects, both on the mainstem Big Hole, will manage grazing and protect riparian habitat along nearly 1.5 miles of the river. We're also planning to again help fund one of several Fish, Wildlife & Parks and the Arctic Grayling Recovery Program's (AGRP) grayling conservation projects in the upper Big Hole this year. We're currently reviewing a list of potential projects to help conserve grayling in the last, best river.

We're preparing for our annual Big Hole River Day in Melrose and this year's event promises to be the best yet. Hope to see you all there!

Thank you for your help and support,

Mike

Thank You

We are grateful to the following members and donors who have renewed or made recent contributions and gifts in support of our mission as of June 30, 2016.

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

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Free Flows

Andrew Durkin
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Kid's Day Donations

Beaverhead Livestock Auction LLC

Big Hole River Day Agenda

8-11 4-H Pancake Breakfast at the Hitchin Post Restaurant

12-7 Vendor Booths Open

12-4 Smokestack & the Foothill Fury Band

12-6 Fly Casting Competition

1:30 Fly Casting Clinic

2-7 Brew Fest

4-7 Heather Lingle Band

6:30 Annual Fundraising Dinner

7:30 Live and Silent Auctions

9:00 Drawing for Hyde Drift Boat



2016 Montana Skiff Raffle



Thanks to Hyde Drift Boats, we have another Montana Skiff for our 2016 raffle. Tickets are \$20 each or 6 for \$100 and must be received in our office no later than July 14, 2016 if ordered via mail. Tickets will be available in Melrose up to time of drawing.

Big Hole River Foundation Drift Boat Raffle Ticket Order Form

Name _____

Address _____

City, State Zip _____

Phone _____

**RAFFLE TICKET ORDER
FORM**

*Mailed tickets must be received in our office
no later than July 14, 2016*

Trout in the Pond

Our Trout in the Classroom trout from the Melrose and Twin Bridges Schools are now trout in the pond. The Melrose School students and teacher, Roxie Bulen, traveled to the Bozeman Mall Pond during May to release the trout they raised during the school year. Roxie Bulen did an amazing job with her Kindergarten and 1st grade students raising their trout from eggs, reading books on trout ecology, keeping trout-growth journals, and learning what constitutes good water quality for trout.

The Twins Bridges High School science students released their 42 trout a week later at the same pond. Dr. Nancy Males, Science Teacher, led the program for the Twin Bridges School. The Twin Bridges School incorporated trout water quality and ecology into all their High School science class curricula.

We especially thank the Ennis National Fish Hatchery for providing the trout eggs, food, and the tanks and aerators necessary for a safe trout release at the pond. They provided expertise and advice as the students hatched the eggs and raised the trout throughout their school year.

Next year's Trout in the Classroom Program will move from the Melrose to the Divide School to introduce different students to the program and will continue at the Twin Bridges School. We are looking forward to next year's cohort of rainbow trout.



Mike Bias releases a bucket of trout fingerlings into the Bozeman Mall Pond as the Melrose students that raised the trout look on.

New High Road Bridge Fishing Access Site!

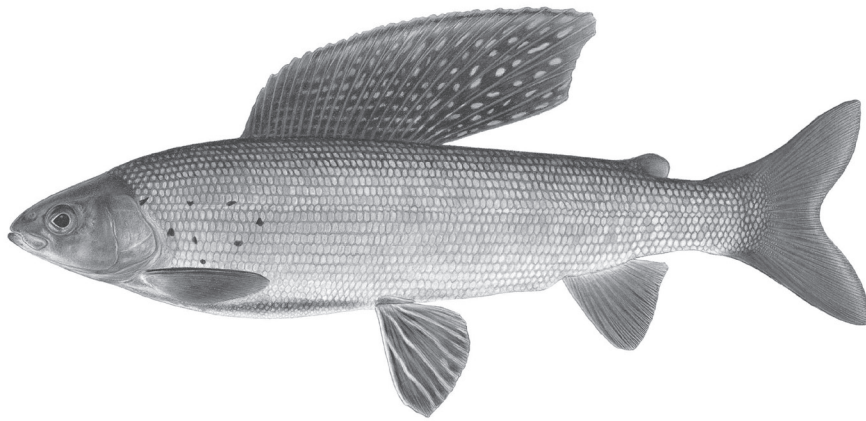
This week we confirmed with the owners of the Hamilton Ranch that the new gated ramp at the High Road Bridge on the lower Big Hole is open for public use! Sweet! Thank you FWP, Madison County, and Hamilton Ranch. Respect private land, keep the gate as you found it when using this ramp. The ramp is located on the downstream, river left side, of the High Road Bridge on the Twin Bridges-Melrose (High) Road.



Listing Status of the Grayling

By the end of this June - 34 years after the first status review by the US Fish and Wildlife Service (Service) - we may finally get our answer as to whether or not the Service's 2014 decision to not list the Arctic Grayling in Montana as endangered is acceptable. U.S. District Judge Sam Haddon is expected to make a decision sometime after June 2016 in a lawsuit over the Service's decision not to list the Arctic grayling as a threatened or endangered species.

The Service, Montana Fish, Wildlife & Parks and the two environmental groups and two private individuals who filed the lawsuit have been working on their final arguments before Haddon makes his decision. The plaintiffs led by the Center for Biological Diversity filed a lawsuit in 2015, saying rising water temperatures and irrigators reducing stream flows threaten the Arctic grayling's last refuges. The plaintiffs said in their argument, that the threats will be increased without protections by climate change,



Between 2010 and 2014, the Fish and Wildlife Service found the Arctic grayling had sufficient habitat and stable or increasing population trends. The fish "is neither in danger of extinction nor is likely to become endangered in the foreseeable future," wrote Nicole Smith, an attorney for the U.S. Department of Justice. Montana fisheries officials created a conservation agreement for landowners in the Big Hole River area meant to improve stream flows by reducing irrigation, improve the Arctic grayling's habitat, and remove barriers that prevent the fish's movement. More than half the eligible land in the Big Hole River Valley is enrolled in the program.

The Fluvial Arctic Grayling Workgroup – now the Arctic Grayling Recovery Group - was established in the 1980s to facilitate and coordinate grayling conservation efforts in Montana. Since 1995, State and Federal agencies, including the Service, have participated in a Fluvial Arctic Grayling Restoration Plan to conserve the remaining fluvial grayling population in the Big Hole River and re-establish four additional populations. The Service's Partners for Fish and Wildlife Program has been actively implementing restoration projects in the Big Hole River watershed for over a decade. Montana Fish, Wildlife & Parks, Montana Department of Natural Resources and Conservation, USDA Natural Resources Conservation Service, Big Hole River Foundation, Big Hole Watershed Committee, and Trout Unlimited have participated in ongoing efforts to protect and enhance grayling habitat and the remaining population in the Big Hole River area.

Species Spotlight - Pale Morning Dun

Pale morning duns (PMDs) are mayflies in the Family, Ephemerellidae; Genus, Ephemerella. There are 35 species of Ephemerella in North America and 12 in the West. Important western species are *E. infrequens* and *E. inermis*. Rick Hafele and Dave Hughes, in their book, *Western Mayfly Hatches: From the Rockies to the Pacific*, rate the pale morning duns second only to the Baetis or blue-winged olive complex of mayflies. The PMD hatch in the west lasts for as long as six months, almost as long as the Baetis hatches.

PMD hatches can go on for weeks and even months on the same stream, sometimes in great numbers but for a short daily period, causing trout to feed for several hours each day. On some streams the hatch can begin as early as May and ends in September or October. PMDs begin hatching through June on the Big Hole and lasts through August.



Pale morning dun nymph.
From Jason Neuswanger of troutnut.com

Hatches of the important PMD species (*E. inermis* and *E. infrequens*) overlap. The nymphs are well-adapted to spring creeks and tail waters because the temperatures and flows are typically more stable than freestone rivers. Most PMD hatches begin an hour or so before noon. As day warm through the summer, hatches begin earlier as early as 9:00 am. If weather is cool, they will emerge later during the warmest hours of the day. If weather is bright and warm, their hatches are typically short in duration, an hour or less. If weather is cool and overcast, hatch duration can be longer up to three hours.

Trout feed extensively on the nymphs and take emergers readily. The dun stage of the PMD is most famous, largely because they float for some time while their wings dry. Spinner falls can occur in the morning or evening of the same day, and cause selective sipping by trout that can be difficult to notice.

Body color of emerging duns are brighter and more olive-yellow when first emerged, and slowly changes to pale reddish-brown after the dun has been exposed to air for some time. PMD spinners display sexual dimorphism with males and females typically being different colors. Both sexes fall onto the water after mating, with females typically outnumbering males.

PMD nymphs live on and among the bottom rocks and vegetation, thriving in riffles and runs. They are vegetarians browsing on the thin layer of photosynthetic growth that covers the bottom rocks where sunlight strikes and on decaying vegetation that gets trapped on the bottom. The PMDs are crawling nymphs that have adapted

well to microenvironments in more-stable stream environments where plants have taken root, including meadow reaches of freestone streams, spring creeks, and tail waters where stable flows allow plants to grow.

Though PMDs on freestone rivers can be heavy, the most prolific populations live in spring creek and tail water currents that are vegetated and well oxygenated. The nymphs do poorly in streams with poor water quality, but come off in great numbers on clean waters with spring sources or below dams that reduce scouring spring floods without degrading water quality or allowing water to become too warm. A perfect local example are the PMD hatches on the Big Hole compared to those on the Beaverhead rivers. While the Big Hole has robust PMD populations and nice hatches, they do not match the abundance or longevity of the hatches experienced on the Beaverhead.

PMD nymphs molt 20 or more times in the course of their one-year life cycle. Nymphs ready to emerge will have wing pads that are nearly black. Nymphs will migrate from fast riffles and runs to pools and slower water edges before emerging into duns. When ready to emerge, PMD nymphs swim feebly or are buoyed to the surface. The nymphal skin splits along the back between the wingpads just beneath the surface film, the dun struggles through the surface film to emerge. They arrive at the surface with their wings wet and must wait on the water for some seconds, or minutes, before they are dry enough to fly.

Trout often concentrate on emerging duns struggling to make their exit from their nymphal shuck. PMDs remain vulnerable to trout in the dun stage until they leave the water. PMD duns fly to streamside vegetation where they make a final molt to the spinner stage one to two days later.

Mating males swarm over pools and glides. Females fly into the mating swarms and mating occurs in the air. Females may return to streamside vegetation for a short period before returning to the water to lay their eggs by releasing egg clusters just above the surface or by flying just above the surface and touching the water with their abdomen releasing their eggs. Spinner flights end with both males and females lying spent on the water and can occur that evening or the next morning.

-Adapted from Hafele, R. and D. Hughes. 2004. *Western Mayfly Hatches: From the Rockies to the Pacific*. Frank Amato Publications, Portland Oregon.

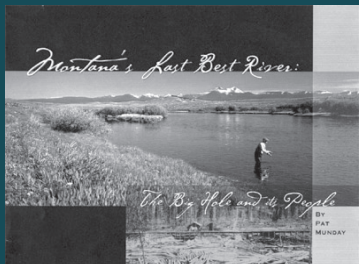


Pale morning dun adult spinner.
From Jason Neuswanger of troutnut.com

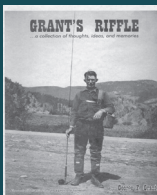
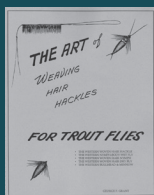
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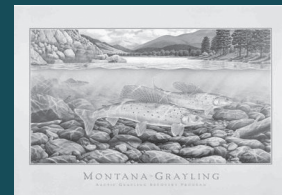
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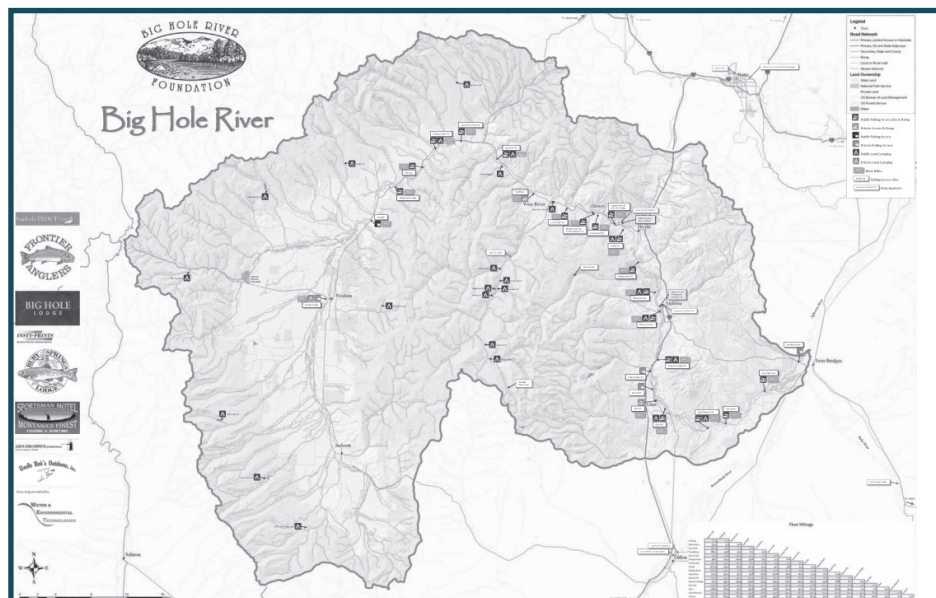
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Montana artist, Monte Dolack's
"Montana Grayling" posters
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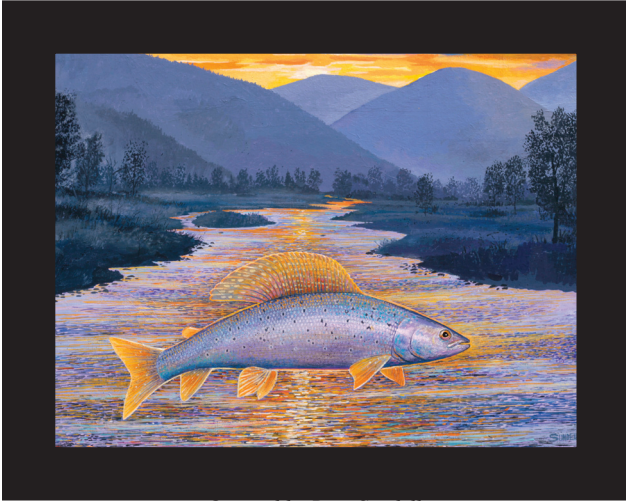


Newsletter and Corporate Sponsors - Thank you!



Big Hole River Day Live Auction Item Preview

We have been receiving many beautiful donated items for our live and silent auctions at Big Hole River Day. Below are a few of the items received to date and slated for the live auction. If you are unable to attend the dinner and would like to bid on any of our live auction items, please contact Corky at (406)560-7089 and she will put you in touch with the auctioneer who will arrange to take and place your bids for you. For a complete listing of our auction items, please visit our website at www.bhrf.org and click on the Big Hole River Day Event links.



Original by Bern Sundell



Original by Peggy Ryan



Bamboo Fly Rod by Ted Anderson



3L Cab by Salvestrin Wine



Maple fly box by Red Dog Woodworks

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