



The purpose of the Big Hole Watershed Committee is to seek understanding of the river and agreement among individuals and groups with diverse viewpoints on water use and management in the Big Hole watershed.

Newsletter of the Big Hole Watershed Committee August, 2009

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Letter from the Board

What a wonderful year we are having on the Big Hole. It has been a long time since we have had rain every day in June and every other day in July. The river looks good, as do the crops, range, livestock, and wildlife. With so many issues in modern day life competing for our attention, it is exhilarating to live in a rural setting where we can fully appreciate and enjoy a smiling Mother Nature. It is understandable why urban America wants to experience what we have.

The board is beginning to narrow down the search for the executive director position. We had good interest from a broad and talented group of individuals and are in the process of setting interviews to finalize our selection of a person who will bring additional talent and foresight to our efforts to enhance the watershed we live, work, and recreate in. The economic downturn has made this task more difficult and the board is looking for an experienced fundraiser who can mold our talents into a more effective watershed group that draws greater participation and support.

Dick Marshall has decided to step down as member of the governing board. Dick has given a lot to the watershed and has been paramount as a sounding board for the interests on the lower Big Hole. Dick is a man of few words, but great wisdom. What he said was always pertinent. At times, when I was expounding on various issues, I would look at Dick trying to get an impression as to his thoughts. He always held a poker face that I couldn't read. Those thoughts shared have provided guidance salted with experience that we all need on occasion. Dick, thanks for all the time, thought, and effort you have put into this group and the Big Hole Watershed. You have truly made a difference.

It is with great pride and privilege that I am allowed to participate in a group that has taken active management to enhance the watershed we live in. This action includes: managing weeds, development, recreation, riparian areas,

livestock, native and exotic fish, wildlife, water quality, water quantity, water efficiency, water diversion, water storage, return flows, drought and many other action items. This action is being taken and supported by various county, state and federal agencies, interest groups and individual interests. Agency representatives have developed personal interests that have been instrumental in achieving success. Landowners in the upper basin have participated in the CCAA in ways that benefit everything in the watershed. Sportsmen and their groups have supported us through some very tough water and political years. What is important is that we have all worked together with active resource management to make the watershed healthy, sustainable and economically viable.

I just finished reading "Gardeners of Eden" by Dan Dagget in which he analyzes man as being part of nature and not alien to nature as many have been led to believe. The Watershed Committee has spent the last 14 years working with the resource to make it healthier and sustainable and the ranchers have been working with nature for 150 years to make the Big Hole what it is today. We must have done something right because it seems everyone wants what we have. Dagget suggests a "leave-it-alone, protectionist, no-management model" does not recognize man and his ability to enhance through active management. I believe the people of the BHWC and the Big Hole, through their actions of enhancement rather than protection, exemplify this philosophy. Oh my, our work has hardly begun.

Jim Hagenbarth,
Vice-Chairman



Project Focus

Using PIT Tags to Track Fish Movement in the Upper Big Hole

(By Shane Vatland)

Where do grayling and other fish go when the flowing waters of the upper Big Hole are relatively low and warm? To answer this question and better understand how habitat conditions affect the distribution of fish in the upper basin, we are using passive integrated transponder (PIT) technology to monitor fish movement.

Each PIT tag is actually a small transponder (smaller than a .22 bullet) that contains a unique ID number, comparable to a bar code. Fish implanted with PIT tags can be detected by sensors, where a small computer records the PIT-tag ID number, location, and time of detection. This technology is similar to shop-lifting detectors installed at retail stores, where the transponder (the tag) needs to be relatively close to the sensor in order to be read.



PIT tag in relation to a quarter

Before tagging wild fish, we conducted a simple short-term experiment to evaluate the negative effects of PIT-tagging. We implanted PIT tags into several grayling from the Montana Fish, Wildlife and Parks brood stock in Green Lake, held them in enclosures, and estimated survival over a four-day period. All fish survived and showed no negative effects from the tagging. Our experiment agreed with several other studies that suggest PIT tagging is a safe technique for trout and grayling.

Since the autumn of 2007, we have worked in close collaboration with Montana Fish, Wildlife, and Parks to implant PIT tags in over 2,200 fish from the Big Hole River. These fish include Arctic grayling, brook trout, brown trout, burbot, longnose sucker, mountain whitefish, rainbow trout, and white sucker. We are collecting movement information from these fish at fixed stations located throughout the upper Big Hole. Five stations are located on the mainstem of the Big Hole, and eight are located at the mouths of tributaries. Stations are located throughout the basin from near Dickie Bridge upstream to Jackson.

Preliminary results suggest maintaining connection between different portions of the mainstem and tributaries is essential for allowing seasonal movement of stream fish, and several fish have been observed moving among numerous parts of the stream network during the summer and autumn. Cooler tributaries also appear to provide critical coldwater “safe zones” when the mainstem Big Hole becomes extremely warm in July and August (in most years).

In addition to monitoring fish movement with fixed stations, we are using portable sensors to relocate PIT-tagged fish. The portable sensors allow us to get information about what is occurring between fixed stations and to study the relationships between fish locations and habitat in more detail. The portable sensor data also aids in evaluating tag loss, because we can detect and record tags that were “lost” by fish.



Portable antenna

Several stream restoration projects in the upper Big Hole aim to increase summer flows and decrease water temperature because “hot” stream temperatures can be stressful or even lethal to coldwater fish. To better understand what water temperatures are available to fish, we are evaluating patterns in stream temperature throughout the Big Hole and monitoring how they change through time. To accomplish this task, we are assessing water temperature patterns throughout the Big Hole from an airplane and using a network of recorders to measure temperature 24 hours a day. We are also identifying potential “cool” spots by dragging continuously recording thermometers throughout the mainstem and tributaries. Initial results show that water at suitable temperatures for cold and cool water fish is scattered in small patches throughout the upper basin.

We are continuing to monitor fish movement and analyze how movement is affected by stream habitat conditions. Our ultimate goal is to better understand when and why fish move around the upper Big Hole River basin. In doing so, we will gain new insights for planning and evaluating conservation projects and managing the fishery.

This collaborative research project is part of Shane Vatland's PhD graduate degree program in Fish and

Wildlife Biology at Montana State University-Bozeman. As a graduate student, he is affiliated with the MT Cooperative Fishery Research Unit and the USGS Northern Rocky Mountain Science Center. This project has been supported by a number of government and non-government organizations (Arctic Grayling Recovery Program, Big Hole Watershed Committee, MT Trout Unlimited, Wild Fish Habitat Initiative – Montana Water Center, and the US Geologic Survey).

For more information on this research project, please contact Shane (svatland@montana.edu, 406-994-6643).

Addressing Climate Change

(By David McGinnis, Cathy Whitlock, Steve Running and Jediah Brodie)

The authors are members of the International Panel on Climate Change which was awarded the 2007 Nobel Peace Prize "for their efforts to build up and disseminate greater knowledge about man-made climate change, and to lay the foundations for measures that are needed to counteract such change."

Last month, a multi-agency report released by the administration provided the first nationwide snapshot of our vulnerability to climate change since 2001 and represents the best available climate science in the United States. It highlights the unequivocal reality that our climate is rapidly changing and impacts will be experienced by all communities and ecosystems, threatening our way of life, economy and biodiversity.

We know that global warming is damaging our planet, from the air we breathe to the water we drink, the medicines we use, the food we eat, the forests and fisheries we depend on, to the special places we take our children. It is also clear that the changes in climate we are experiencing are primarily caused by human actions and that the choices we make today will dictate the severity of the impacts of climate change for years to come.

Montana residents can expect to see regional temperatures rise between 3 and 10 degrees Fahrenheit during this century. This temperature rise will lead to a decline in available water, due to reduced springtime snow pack and therefore stream flows. It will also cause more precipitation to fall as rain instead of snow in the winter, leading to an earlier snowmelt and less available water in the warmer months.

Global warming is also changing, shrinking and threatening ecosystems and habitat in Montana. The number of glaciers in Glacier National Park has been decreasing from an estimated 150 in the mid 19th century

to about 50 today. It is estimated that if these trends continue, there will no longer be any glaciers in the park by the 2030s.

Warming temperatures also threaten the viability of native fish in the Clark Fork River basin and many others. Studies estimate that 5 to 30 percent of trout habitat in western Montana could be lost over the next century due to climate change. As species like trout and other cold water fish shrink in population due to loss of habitat from climate change, the Montana economy will suffer.

Anglers, hunters and wildlife watchers drawn to Montana for the opportunities our state provides generate \$1.1 billion annually with approximately 950,000 people participating in those activities each year.

This country has already made some tremendous commitments to protecting its vital natural heritage. But existing environmental laws are no match for the damage caused by global warming that we are already seeing and will continue to see for generations. At this time there are no opinions up for debate, only scientific facts to be dealt with.

The authors are all doctorate-level scientists in the Montana University System — Article printed in the Montana Standard on July 22, 2009. Reprinted by permission of the authors.



To learn more about Climate Change, please visit: <http://www.climatescience.gov/Library/Literacy>.

Dr. Running will be presenting at the September 16th meeting of the BHWC. All are invited to attend and join us for a potluck and informal conversation with Dr. Running before hand – see upcoming events.

BHWC Hires Operations & Communications Manager



Emma MacKenzie joined the BHWC staff in March and is our Operations & Communications Manager. She is a relative newcomer to Montana, having moved west from Massachusetts in October of 2007. She is also a graduate student at Montana Tech in the Technical Communications department, specializing in Environmental Communications and Ethics.

Emma brings her 25 years of experience in project and event management to assist in the operations of the BHWC. She also brings technical and communications skills to our website and public relations/education.

"I'm delighted with the opportunity to work with the BHWC. I enjoy bringing my talents to groups that are making a difference. This group is unique in my experience. The people are so clearly committed to the river, the community, and the future."

The BHWC is lucky to have such a talented and personable professional join our staff.

Weed Group Briefs

(by Jeanne Caddy, BHWC Weed Group Coordinator)

This has been a busy weed fighting season for the Big Hole Watershed Weed Group (BHWVG.) Part of what we continue to do is rally Big Hole Watershed residents for county area weed days. And, of course we are always good for bringing doughnuts to those events.

Once the river receded, our Big Hole Watershed Weed Project got into full swing and some sections are almost finished up for this season. The project is funded by the Montana Noxious Weed Trust Fund. To date, \$750,000 has been spent to control noxious weeds on this project. The project covers 84 miles of the River beginning at the Mudd Creek Bridge and ending at the confluence with the Jefferson River. The landowners along the river continue to be wonderful partners on this project by allowing our commercial applicators onto their property to gain access to the project area.

The Divide Creek Weed Management Area Project, funded by the National Fish and Wildlife Foundation, is still going strong this season with many landowners getting after the noxious weeds on their property. The project area begins at the I-15 Feely exit and follows Divide Creek for a distance of 12 miles to where it empties into the Big Hole River. Landowners benefit from a cost share program and county spray days. A commercial applicator will be conducting weed management work in the sensitive riparian area surrounding Divide Creek. Work is expected to continue through October.

On June 27th, we hosted a Noxious Weed Awareness Program for Anglers. This project, funded by the Montana Department of Environmental Quality, took place simultaneously at the Jerry Creek, Divide Bridge, and Salmon Fly fishing access sites. BHWVG members,



Weed Pull at Divide School

along with technical advisors from agencies which work closely with us, handed out noxious weed education materials to anglers. We also explained the effects noxious weeds can have on water quality and how weeds can spread when they 'hitch a ride' on boats, trailers, and vehicles. And while there weren't any doughnuts involved, there were cookies to help lure the anglers in!



Catherine and Bill Cain at the 2007 Weed Whacker's Ball

We held a three-county weed day in Melrose at the end of June and had a terrific turn out. County employees, agency employees, residents, and volunteers worked diligently to whack noxious weeds in the Melrose area. It was estimated that 63 people showed up to support the effort. Go Melrose!

The end of the weed fighting season will be marked with the Fifth Annual Weed Whackers Ball on September 12th in Wise River. This is our annual fundraiser and the money raised at this event funds our operations for the year. We'll have a huge feast of roasted pork, chicken, and beef, along with salads and desserts. The evening includes a live and silent auction, a full service cash bar, and live music. We would love to have you join us; there is something for everyone!

Wildlife Committee

(by Jim Hagenbarth)

The Wildlife Committee met in Jackson on June 16. We had a good meeting with a lot of input from all interests. Craig Fager (MFWP Wildlife Biologist, Dillon) gave a report on the elk brucellosis surveillance project and there were no positive elk west of I-15.

Vanna Boccadori (MFWP Biologist, Butte) presented a preliminary plan to address the concerns of the livestock interest in the upper Big Hole. This plan explores the idea of changing district boundaries so elk moving from private to public land during the hunting season would be more accessible.



An early hunt was discussed, but the ranchers had concerns over meat spoilage. There was some discussion about limiting the archery season making elk more available for a better harvest at the beginning of rifle season. Brendon Burns representing the Montana Bow Hunters Association had concerns about limiting archery hunting opportunities.

Surveys indicate that the cow/calf ratio in the Bitterroot is very low and requests were made to limit the North Big Hole cow permits. There was discussion by the Big Hole contingent that "we feed them and you shoot them" was not too equitable. Any change in the hunting districts would begin in 2010 and would have to be approved by the commission late in 2009.

Ranchers were reminded of the deadline for damage hunt permits. This committee has generated a lot of interest from all parties and appears will be very useful in developing workable wildlife management strategies and promoting landowner/hunter relations which may lead to responsible hunter access to previously closed lands.

Our next meeting is scheduled at 6:00 pm on Tuesday, September 22, 2009 at the Jackson School to organize our requests being presented to the commission.

Once there were brook trout in the streams in the mountains. You could see them standing in the amber current where the white edges of their fins wimpled softly in the flow. They smell of moss in your hand. Polished and muscular and torsional. On their backs were vermiculite patterns that were maps of the world becoming. Maps and mazes...In the deep glens where they lived all things were older than man and hummed of mystery.
Cormac McCarthy – *The Road*

BHWC Upcoming Events

Meetings

Monthly meetings: 3rd Wednesday of each month at the Divide Grange Hall

September 19th, 6:00 pm potluck, 7:00 pm Topic: Climate Change with Dr. Steve Running

Wildlife Committee: September 22, 6:00 pm, Jackson School

Weed Whacker Ball

The Big Hole Watershed Weed Group cordially invites you to attend our fifth annual fund raising banquet, the Weed Whackers Ball on Saturday, September 12, 2009 at the Wise River Community Building.

The Big Hole Watershed Weed Group is dedicated to promoting awareness and management of noxious weeds in the Big Hole Watershed. All funds from this event remain in the watershed to continue our community education and cost-share programs.

Schedule of Events

4:00 pm ~ Aquatic Invasive Weeds Presentation by Matt Wilhelm (Federation of Fly Fishers)

5:00 pm ~ Social hour (featuring a no-host bar) & Silent Auction begin

6:00 pm ~ Open-pit BBQ with salads and desserts

7:30 pm ~ Live auction ~ followed by live music featuring Specfire

Weed Whacker Bus

Need a designated driver for the Ball? Ride the Weed Whacker Bus roundtrip from Butte OR Dillon. Call to reserve your seat.

For tickets,

Visit our webpage at:

http://www.bhwc.org/bhwc_wwb2009.html

Call (406)267-3354 or (406)491-1929, or

Email: jcaddy@bhwc.org

Governing Board Profile

(By Emma MacKenzie)

Scott Reynolds

"I went fly fishing as a kid ... mostly wade fishing and we floated the Big Hole in canoes sometimes. I was involved in other things, but came back to the Big Hole to fish again in the early 80s. I spent a lot of time on the Big Hole, it carries a lot of memories."

I sat with Scott Reynolds and his wife Billie at the Hummingbird Café in Butte to chat about his experiences on the Big Hole, his involvement with the BHWC, and his vision of its future. He grew up in Butte and has lived at Fairmont Hot Springs since the early 70s. He and Billie raised their two children on her family's ranch. Katie is now a teacher in Butte and Sam is an apprentice electrician and living on the ranch. Scott is a retired electrician and Billie has also retired from teaching elementary school. They have strong ties to the community and to the river.

"We started BHWC in a big drought. We wanted to see what we could do to help solve some of the problems. There was a lot of conflict of interests in thinking at the beginning, but we decided we needed to get a group together to deal with the problems on the Big Hole and better the community." Scott has been involved with the BHWC since the beginning, and has also been a long term member of Trout Unlimited (he's their representative on the Committee) and was involved with the Big Hole River Foundation in the past.

"It has been successful. It takes a lot of time, but the watershed is in better shape now than when we started. The relationships are also in a better shape now. We're definitely more on top of things,

and we communicate a great deal better. We've learned to work together as a group to help, to understand, and to learn." Scott sees education as an important aspect of BHWC. He realizes that everyone cares deeply about the Big Hole and its resources, but that we need to learn the different perspectives about the river, as well as the information that's available. *"We can usually come to a good consensus on what needs to be done to help."*

The future that Scott envisions for the Big Hole includes the recovery of the Arctic grayling. He does think that it's possible to see the recovery within the next five to ten years. The work of the Committee is to continue to keep our focus on flows and water quality and to work on ways to keep the watershed similar to how it is now with an agricultural basis and wise development choices. Scott would also like to see the Committee continue to be educated on issues so they can make informed decisions. For example, he believes that the Forest Jobs and Recreation Bill may play an important role in the future of the Big Hole.

We talked about the future of the Committee, as most of the members have been involved since the founding in 1995 and the group is aging. *"I know that's something we need to talk about. It's hard to get younger people involved. There's a big learning curve and it's time consuming. I don't know what the answer is."* Like many other groups, BHWC is looking for people that have a deep personal interest in the future of the Big Hole. He has confidence that the right people will find their way to being involved.



photo courtesy of glenn bodish

Project Inventory

The Big Hole Watershed Committee is dedicated to accomplishing on-the-ground projects that improve stream flow, enhance the fishery and riparian habitat, preserve or enhance water quality, and recover imperiled fluvial arctic grayling. We manage projects directly and we support the efforts of the many other individuals, organizations and agencies that are doing

this important work on the Big Hole. In each of our quarterly newsletters, you will find a project featured. Listed below is a partial list of some of the projects and research the Watershed Committee supports and which we will feature over the coming months and years.

| Project & Location | Project Type* | Lead** | Status |
|---------------------------------------------------|--------------------|---------------------|-----------|
| Spring Creek Restoration–near Glen | RE; FH; WQ; SF | BHWC | Current |
| Landscape Thermal Study–Upper Big Hole | R&M | FWP/MSU | Current |
| Willow Bank–Jackson to Wisdom | RE; WQ; FH; SF | USFWS | Current |
| Big Hole Ditch–near Twin Bridges | WM; SF; FH; WQ | BHWC | Current |
| Well Drilling–Jackson to Wisdom | WM; SF; WQ; RE; FH | USFWS | Current |
| Grayling PIT Tag Study–Upper Big Hole | R&M | MSU/FWP | Current |
| Gallagher I & II Infrastructure–Melrose | WM; SF; FH; WQ | BHWC | Current |
| Deep Creek Riparian Enhancement–near Wise River | WQ; FH; RE; SF | FWP | Completed |
| Governor Creek Culvert replacement–near Jackson | FH; WQ; RE; | Beaverhead Co. | Current |
| Wise River Assessment & Prioritization–Wise River | WM; SF; FH | BHWC | Pending |
| Schindler Reach Restoration–near Jackson | RE; FH; WM; WQ; SF | FWP/USFWS/DNRC/NRCS | Current |
| Avian Monitoring–Upper Big Hole | R&M | UM | Current |
| McDowell Reach Restoration–near Wisdom | RE; FH; WM; WQ; SF | FWP/USFWS/DNRC/NRCS | Completed |
| Macro Invertebrate Monitoring–Upper Big Hole | R&M | BHRF | Current |
| Floy Tag Study–Upper & Middle Big Hole | R&M | FWP | Pending |

* RE – Riparian Enhancement; FH-Fish Habitat; WQ-Water Quality; WM-Water Management; R&M-Research & Monitoring

** BHWC-Big Hole Watershed Committee; FWP-Montana Department Fish, Wildlife & Parks; MSU-Montana State University; USFWS-US Fish & Wildlife Service; BHRF-Big Hole River Foundation; UM-University of Montana; DNRC-Montana Department of Natural Resources Conservation; NRCS- USDI Natural Resources & Conservation Service

While this category lists only the lead organization or agency, each project includes many partners including landowners, counties, non-profit organizations, and state and federal agencies.



photo courtesy of Cathy Cain

BHWC Governing Members

Bill Cain - Landowner/Guide, Glen
Art Christensen - Conservation Dist. Dillon
John Dooling, - Rancher, Jackson
Jim Hagenbarth - Rancher, Dillon
Andrew Hanson - Guide, Wise River
Garth Haugland - County Commissioner, Dillon
Marty Hovan - Municipal Water, Butte
Hans Humbert - Rancher, Wisdom
Liz Jones - Rancher, Wise River
Mark Kambich - Rancher, Divide
Nathan Korb - The Nature Conservancy, Helena

Steve Luebeck, - Sportsmen, Butte
Steve Parker - Big Hole River Foundation, Butte
John Peck - EPEEP, Melrose
Harold Peterson - Rancher, Wisdom
Phil Ralston - Rancher, Wise River
John Reinhardt - Rancher, Wise River
Scott Reynolds - Trout Unlimited, Butte
Randy Smith - Chairman/Rancher, Glen
George Trischman - Rancher, Twin Bridges
Ray Weaver - Rancher, Wisdom

Please visit our newly revised website at www.bhwc.org to learn more about our organization. Memberships and donations are easily available now with PayPal. We thank you for your continued support.