



# Big Hole Watershed Committee

Monthly Meeting Minutes  
 February 15, 2017 – 6:00 pm  
 Divide Grange

## In Attendance

Jennifer Downing, BHWC; Tana Nulph, BHWC; Pedro Marques, BHWC; Paul Cleary; Sandy Cleary; John Reinhardt, Rancher/BHWC; Sam Stone, Rancher; Susan Stone, Rancher; Cat Wiedmann, Watershed Consulting; Lindsay Wancour, University of Montana; Rob Macioroski, BVHD County; Roy Morris, GGTU/BHWC; Jim Hagenbarth, Rancher/BHWC; Mike Mosolf; Peter Frick, Rancher/BHWC; Rick Hartz, BVHD County; Michelle Anderson, University of Montana Western; Adam Braddock, USFWS; Liz Jones, Rancher/BHWC; Brittany Trushel, BHRF; Jim Magee, USFWS; Meg Smith, Rancher; Ed Scott; Jim Dennehy, BSB-Water; Andy Suenram; Bill Kempf; Sierra Harris, TNC; Paul Hooper, USFS; Jim Olsen, MFWP; Steve Hess, ADLC; Mark Rafferty; and Dean Peterson, Rancher/BHWC.

**Introductions**      *Attendees introduced themselves.*

**Meeting Minutes**      *November 2016 meeting minutes were reviewed, no additions or corrections.*

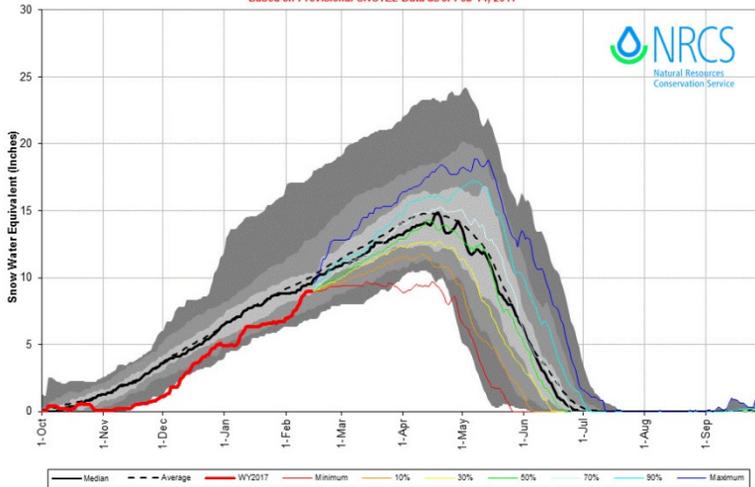
## Reports

### Streamflow/Snowpack Report –Mike Roberts, DNRC

- We are approximately two-thirds into the Big Hole snow accumulation period for the 2017 water year. In general, water year basin snowpack and precipitation are average (98%).
- Reported snowpack for mid-February is similar to 2015 and 2016 however the similarities stop there. The past two years saw mid-winter valley snowmelt resulting in record streamflows at the Melrose gage. This year, above average valley accumulations of snow have remained intact thanks to cooler than average temperatures.
- The gage at Melrose, the only year-round real-time streamflow gage on the Big Hole River, is not reporting flow at this time due to ice issues. This could bear for a much better runoff if temperatures remain cool and snow continues.
- The NOAA three-month outlook at this time is for average temperatures and above average precipitation; however, these forecasts are always subject to change (<http://www.cpc.ncep.noaa.gov/products/predictions/30day/>).
- The following data was compiled from the NRCS (<http://www.mt.nrcs.usda.gov/water.html>).

Big Hole Watershed SNOTEL Stations						
Station	elevation	18-Feb	17-Feb	15-Feb	1981-2010	
		2015	2016	2017	median	2017
		inches	inches	inches	inches	% avg
Barker Lakes	8250	9.6	10.5	7.2	8.8	82
Basin Creek	7180	5.8	7.5	3.6	5	72
Bloody Dick	7600	9.9	10.1	9.3	8.2	113
Calvert Creek	6430	7.7	7.1	7	6.1	115
Darkhorse Lake	8600	25.5	23.7	21.6	19.5	111
Moose Creek	6200	15.1	14.6	11	12.1	91
Mule Creek	8300	12.3	11.4	10.8	9.8	110
Saddle Mtn.	7940	<u>21.4</u>	<u>20.3</u>	<u>14.7</u>	<u>17.2</u>	85
<b>TOTAL</b>		<b>107.3</b>	<b>105.2</b>	<b>85.2</b>	<b>86.7</b>	

Jefferson River Basin Snowpack with Non-Exceedence Projections  
Based on Provisional SNOTEL Data as of Feb 14, 2017



MONTANA SNOTEL Snow Water Equivalent Update Graph

As of WEDNESDAY: FEBRUARY 15, 2017

Basin	Snow Water Equivalent Percent of Median
KOOTENAI RIVER BASIN	94%
FLATHEAD RIVER BASIN	96%
UPPER CLARK FORK RIVER BASIN	90%
BITTERROOT RIVER BASIN	99%
LOWER CLARK FORK RIVER BASIN	93%
JEFFERSON RIVER BASIN	93%
MADISON RIVER BASIN	100%
GALLATIN RIVER BASIN	90%
MISSOURI HEADWATERS	96%
HEADWATERS MISSOURI MAINSTEM	93%
SMITH, JUDITH, AND MUSSELSHELL RIVER BASINS	68%
SUN, TETON AND MARIAS RIVER BASINS	119%
MISSOURI MAINSTEM RIVER BASIN	91%
ST MARY AND MILK RIVER BASINS	105%
UPPER YELLOWSTONE RIVER BASIN	127%
WIND RIVER BASIN (WYOMING)	181%
SHOSHONE RIVER BASIN (WYOMING)	160%
BIGHORN RIVER BASIN (WYOMING)	136%
TONGUE RIVER BASIN (WYOMING)	105%
POWDER RIVER BASIN (WYOMING)	87%
LOWER YELLOWSTONE RIVER BASIN	141%

Legend: ■ <70% ■ 70-90% ■ 91-110% ■ 111-130% ■ >130%

**Drought Management Plan – Jennifer Downing**

- Drought Planning Subcommittee met in November to talk about some of the problems in 2016, make recommendations for 2017, etc.
  - In general, we will let the DMP run as it is for the next year to see how it goes – no significant changes will be made in 2017.
  - A formal recommendation to not change the DMP in 2017 will be made at the next public meeting (March 15, 2017).

**Director’s Report - Jennifer Downing**

- Garth Haugland, long-time board member, passed away recently. Gath was a friend to many of us and a dedicated member of BHWC and our community. He will be deeply missed.
- Rick Hartz, Beaverhead County Planner, is retiring this month. Rick has been very supportive of the watershed committee for a long time. Thank you, Rick, for your service and congratulations on your retirement! Welcome Rob Macioroski, new Planner for Beaverhead County!
- Steve Hess now planning director for Anaconda-DL County.
- BHWC Annual Governing Board business meeting held January 18, 2017.
  - We made several changes to the governing board in January. In 2016, Bill Cain resigned from our board, leaving the Secretary position vacant. Roy Morris was elected to fill the secretary position at the January meeting.
  - Will add additional governing board members in May – they will serve introductory/temporary terms until official board elections are held next January.
    - Guiding/outfitting representative candidates: Eric Thorson and Bill Kempf.
    - Landowner candidates: Paul Cleary and Andy Suenram.
    - Rancher candidates: Mark Rafferty.

**Steering Committee – Jim Hagenbarth, Roy Morris**

- Steering Committee is happy with the progress BHWC is making.
- Roy is glad to join BHWC’s steering committee. He congratulates everyone who has proceeded him on the governing board and steering committee. Roy is the President of George Grant Trout Unlimited (GGTU). GGTU supports any group that promotes cold, clean, fishable waters, and BHWC is certainly one of those groups.
  - Thank you, Roy, for taking on this extra responsibility! We appreciate your support of and dedication to BHWC.

### *Wildlife Report – Jim Hagenbarth, Tana Nulph*

- Livestock Loss Board funding held up in 2017 Legislature. SB73 (bill proposing to extend sunset of LLB funding for nonlethal predator management programs and direct reimbursement to producers for livestock loss) has passed through the Senate and is currently in committee review under the House of Representatives. BHWC staff, board members, and partners testified this spring in support of SB73. This funding supports our range rider and carcass management programs.
- Carcass Removal: Will be offered spring 2017 to upper Big Hole livestock producers beginning early March. Contact BHWC Conservation Programs Coordinator, Tana Nulph, (406-267-3421 or [tnulph@bhwc.org](mailto:tnulph@bhwc.org)) for more information or Wildlife Programs Technician, Kim Bingen, (406-660-2158) to schedule carcass removal.
- Carcass Composting: BHWC's carcass compost facility will open mid-March. Carcasses picked up through the carcass removal service will be hauled to the compost facility once operational. Carcasses removed prior to the facility's opening will be taken to the Beaverhead County Landfill. Tash T Diamond Post & Pole will donate wood chips to be used in the composting process. People and Carnivores and the Wildlife Conservation Society – Community Partnerships Program are assisting with site development and setup.
- CVA/Centennial Valley Carcass Removal: BHWC will partner with the Centennial Valley Association spring 2017 to provide carcass removal at Sage Creek in the Centennial Valley. The USFWS will provide the fuel and salary for the Centennial portion of this year's carcass removal. BHWC's Wildlife Programs Technician, Kim Bingen, will operate the carcass removal dump truck in both the Big Hole and Centennial Valleys this spring.
- Big Hole Sage Grouse Working Group meeting: Tuesday, February 21, 2017, 3pm-5pm at Dillon NRCS office.
  - Not a lot of sage brush above the snow in the upper Big Hole currently; it will be interesting to see where the birds wintered this year.
  - We may be able to get some funding from the sage grouse program this year to buy collars and enhance habitat.
  - Jim Magee, USFWS; Vanna Boccadori, MFWP; and Lindsay Schmitt, NRCS, have put a lot of effort into visiting leks in the spring.

### *Land Use Planning Report – Pedro Marques*

- Trying to be creative on expanding and continuing the Big Hole River Incentive Program; so far it's going very well.

### **New Business**

- Floodplain permit just above Wise River – the permit has been approved by the county but there has been an appeal. It's now in the County Commissioners' hands.
  - Received application spring 2016; second since county adoption of new floodplain regulations.
  - It was a difficult process to approve this permit; received a lot of public comment.
  - Proposal to build 5,000 square foot residential structure and 6,000 square foot accessory building on compacted land within floodplain.
  - After review, BVHD County issued floodplain permit with several conditions and an access road required.
  - There have been 2 appeals:
    - One by the landowners, asking for allotted time period for construction to be increased from 1 year to 2 years.
    - Another by a concerned citizen, stating that the permit should not have been issued in the first place.
  - There is an administrative appeal process that will be available and people will be able to provide their opinions.
  - *Discussion:*
    - *Ed Scott: Rick (Hartz) has done an excellent job and I appreciate his hard work on this. One of the landowners is now talking about putting some teepees or wigwams on the*

*island property within the section he has purchased. He represents groups that work with injured veterans and ill children. He has suggested that some airstream trailers be put on the island as well. I am part of the appeal process along with Schiffer; I love that area and I want to protect it. Anyone who has any interest in salvaging or protecting this land, please contact me (Ed Scott) on my cell phone at 406-491-0274; I'd love to hear your point of view.*

- *County line is middle of the river – permits would be issued by Beaverhead County.*
- *You might talk to a title company. They generally have someone that can answer questions about this kind of thing. They might have an interesting viewpoint since they have to write title insurance.*
- *2 permits required: development standard permit (not in channel migration zone or avulsion zone), 200 feet above high water mark (which meets 150 setback requirement).*
- *When the floodplain rules were originally introduced, landowners were concerned about regulations on their private land and land use. But, they understood that the 100 year flood is critical for irrigation, etc. We understand that some folks will want to build within the 100 year flood plain; we are not a litigious group, but prefer to influence people through education and peer pressure. The value of our land in the Big Hole is incredible – if we can encourage people to build up, out of the floodplain, we can preserve that wetland habitat and the character of the Big Hole. It's not fair to say I have my place, but you can't have yours. But it's important to approach new comers and befriend them; they have skills and knowledge that we don't have, and we have to continue including all interests within this group. As newcomers move into the area, we need to welcome them into the group and to the community. Welcome them on our terms, not on theirs.*
- *Another important consideration here is the wetlands; thanks to Rick's hard work, the construction will be primarily outside of the wetlands; only 0.008 acres of wetlands will be affected.*
- *Anaconda-Deer Lodge County will be adopting new floodplain maps/regulations in 2017.*

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## **Meeting Topic: Flood-irrigated Habitats and the Big Hole Watershed**

*Presentation by: Michelle Anderson, University of Montana Western*

*Background:* Michelle is a professor of Biology at the University of Montana Western. She teaches biology, ecology, fisheries, and more. She is currently on sabbatical from teaching and is looking into some projects to work on with students in the future.

### **Goals:**

- Overview of wildlife and flood-irrigation habitats (FIH) research.
- Discuss potential Big Hole Watershed FIH project.
- Learn from you about Big Hole Watershed flood-irrigation.

### **Flood-irrigated lands in the West:**

- Intermountain West Joint Venture (IWJV) is very interested in the importance of FIH to various bird species.
  - As the largest of the U.S. Habitat Joint Ventures, IWJV was established in 1994 to catalyze bird habitat conservation through the collaborative power of diverse public-private partnerships.
  - IWJV operates across all or parts of 11 western states and encompasses some of the most diverse and intact landscapes in the West.

- Important habitats in this region include wetlands, sagebrush-steppe, cottonwood-lined riparian galleries, grasslands, aspen woodlands, and Ponderosa pine woodlands and savannahs.
  - The mission of IWJV is to conserve priority bird habitats through partnership-driven, science-based projects and programs.
- There has been a lot of research conducted lately regarding the conversion of irrigation from flood to pivot and how this affects habitat for migratory birds, especially waterfowl.
- Since 2000:
  - 17% overall decrease in flood-irrigated acres.
  - 10% of flood-irrigated acres in Intermountain West converted to sprinkler irrigation (generally a unidirectional change – once you go pivot, you don't go back).
  - Other losses from urbanization, water transfers.
  - 1.5 million acres of potential wetland habitat lost.
- Flood-irrigation methods vary in the West based on:
  - Climate
  - Elevation
  - Soils
  - Producer objectives
  - Water availability and rights
  - Irrigation infrastructure
  - Conservation practices
- What are Flood-irrigated Habitats (FIH)?
  - Habitat created by surface flow dispersal of water across a floodplain.
    - Birds – water birds
    - Mammals
    - Invertebrates
- Expected conservation values of FIH:
  - Growing season persistence of wet habitats
  - Soil hydration
  - Aquifer recharge
  - Stream temperature regulation
  - Nutrient cycling
  - Food for wildlife (migration)
  - Wildlife breeding areas
  - Invertebrate pest/disease control (e.g. mosquitoes)
- Landowner incentives in studying FIH:
  - Managing flood-irrigation efficiency, distribution, and season
  - Pasture production and complexity
  - Conservation incentives programs
  - Maintaining historic landscape structure
  - Socioeconomics of flood-irrigation
- Bird migration and FIH:
  - Waterfowl band recoveries – bands are recovered most heavily in areas that are flood-irrigated.
- Studies:
  - Long-billed Curlew in Nevada:
    - Chick survival higher in wet year with > hay field FIH.
    - Tall, dense vegetation cover and food for chicks.
    - Some nest loss due to predation, flooding, irrigation, raking.
  - Waterfowl in Wyoming:
    - Wetland mapping using geospatial data: irrigated lands vs. duck density.
    - Higher density where flood-irrigation occurs.
  - Black Rails in California:
    - Black rails were positively associated with larger PEM1 wetlands that had flowing water, dense vegetation, and irrigation water as a primary source.

- White-faced Ibis in Nevada:
  - Preferred alfalfa fields.
  - Flood-irrigation made earthworms available for food.
  - Feeding sites constantly moved with changing irrigation water (i.e. Ibis followed the irrigation).
- White-faced Ibis in Idaho:
  - 89% of foraging ibis were in natural wetlands and agricultural fields not irrigated by center-pivots, even though 70% of the agricultural landscape was in center-pivot irrigation (i.e. they prefer flood-irrigation to pivot).
- Water birds in Central California:
  - Estimates of birds found in FIH was significantly higher than in non-irrigated locations. Grain also was a factor.
- Southern Oregon-Northeastern California (SONEC):
  - What is SONEC? SONEC is a priority landscape that is continentally significant for migratory birds and is an important agricultural region for livestock production on working lands. Southern Oregon-Northeastern California (SONEC) is one of the Intermountain West Joint Venture's highest priority landscapes for conservation for a number of reasons. It is a rich mosaic of rural wetlands, wet meadows, and irrigated pasturelands that provide critical migration and breeding habitat for a myriad of North American bird species.
  - Socioeconomic values:
    - SONEC is ranching country and livestock production has sustained rural communities here since the late 1800s.
    - Flood-irrigated pastures and wet meadows provide valuable livestock forage through haying and grazing management practices.
    - The abundance of wildlife makes the region a preferred destination for outdoor enthusiasts and this supports rural economies.
  - Ecological values:
    - SONEC is one of the most important areas for migratory birds in North America. This region supports up to 70% of the Pacific Flyway's bird populations that pass through during migration.
    - Private and public wetlands here serve as a crucial migration hub between wintering and breeding areas across the hemisphere and regionally important breeding habitat for many priority species.
    - Flood-irrigation on hay pastures and wet meadows mimic historic hydrologic patterns and functions, providing valuable ecological services, such as groundwater recharge and habitat diversity.
    - The region has also received national attention due to its value for greater sage grouse. Wet meadows on public lands provide critical late-summer habitat for these sage grouse and their broods.
  - May have to negotiate a balance between salmon and water birds (pivots keep more water in the rivers for fish, flood-irrigation better for birds).
- FIH in the Big Hole Watershed – possible goals:
  - Describe flood-irrigation systems currently used in the historic Big Hole River floodplain.
    - A lot of information exists, but much of it is in landowner's heads, etc., not written down or mapped.
  - Define types of FIH created by different flood-irrigation systems.
  - Assess occupancy and density of bird species in FIH.
  - Determine what variables influence bird occupancy in FIH.
  - Study FIH management options to maintain or increase bird and agriculture production.
  - Other goals of interest to the community?
    - Groundwater
    - Pivot irrigation
    - Restoration

- Other wildlife
- Socioeconomics
- Regional comparisons (Centennial, Ruby, Beaverhead, etc.)
- Resources needed for multiyear FIH study:
  - Human resources: Michelle, students, BHWC?
  - Equipment (some already at UMW)
  - Travel and lodging (UMW vehicles and trailer, fuel)
  - Community-based plan (education & outreach, access)
- Possible funding sources:
  - Student research grants (UMW, NASA, professional societies)
  - Intermountain West Joint Venture (IWJV) Capacity Grant
  - NRCS:
    - Environmental Quality Incentives Program (EQIP)
    - Conservation Innovation Grants
    - Conservation Stewardship Program (Flood-Irrigation)
    - Wetlands Reserve Enhancement Program
    - Regional Conservation Partnership Program: SONEC, ID Water Resource Board
  - Foundations
- Flood-irrigation practices in the Big Hole?
  - Timing:
    - Open floodgates until end of season (May-June)
    - Closely monitoring and alter flows across channels
    - Mix of approaches
  - Spatial arrangement:
    - Reservoirs and river source waters
    - Uncontrolled (wild, free) flooding
    - Contoured irrigation ditches
    - Graded border strip flooding?
    - Gated pipes/surge valves?
    - Furrows? Other?

*Discussion:*

- *I think this is one of the last strongholds for flood-irrigation, because pivot irrigation, especially in the upper Big Hole, is not always feasible. One of the problems with flood-irrigation is that it's labor intensive. We welcome you to look at the birds, but you'll find more curlews out on the Hogsback than on the flood-irrigated ground.*
  - *We also have some ground in Idaho that might interest you, on the South side of the Centennial range (Jim Hagenbarth).*
- *We (USFWS/CCAA) have a lot of information that may be helpful to you (Jim Magee).*
- *With climate change, we may begin to irrigate earlier than we traditionally did.*
  - *From the birds' perspective, if they're shifting along with you, that might not be bad.*
    - *But it might be difficult to make that change in your water right because it will affect the total amount of water you use – unless you shut off earlier, too. That will be an issue down the road.*
- *Another issue will be water marketing and metropolitan areas using more water.*
  - *That's part of SONEC's work, they're trying to show that the water has more value where it is (providing habitat) rather than being sent to metropolitan areas.*
- *You're going to find that your water will go out faster as the beetles kill the trees. The dead trees are changing the landscape and you'll have to work around them.*
- *Could the Big Hole River Incentive Program provide funding for headgate updates and other things that could affect flood-irrigation practices?*
  - *Pedro: Potentially, the difficult part is assigning values and making a translation to the value we would lose if flood-irrigation were to stop. People want to invest in cold, clean water, habitat, birds, etc. But you have to "package your widget" first (i.e. figure out the values).*

- *What about Mount Haggin – MFWP doesn't irrigate?*
  - *Pedro: Beavers will be our irrigators up there.*
    - *That can be a problem too because beavers will chew up the wetlands.*
- *I think this is an important story to tell.*
- *Coming from my Master's program in the Missoula valley, I would always hear about the importance of pivot irrigation. You just don't hear this story (the story of flood-irrigation and its benefits). I'd be curious to know if there are areas with flood-irrigation and pivots side-by-side where a comparison could be done.*
- *In the Upper Big Hole, you're not going to see a lot of pivots. They're expensive, for one thing. I don't expect to see a lot of conversion to pivot up there.*
- *IWJV is very interested in FIH in the Big Hole watershed. If we could show the importance of flood-irrigation in this area and show that it doesn't have to compete with other goals (like grayling restoration), we can show flood-irrigation may still be feasible (and preferable) in other areas.*
- *Flood-irrigation is important to multiple bird species.*
- *If you use a pivot and use less water, do you lose the part of your water right that you don't use?*
  - *Potentially, but it depends on the program.*
- *Pivot irrigation is not necessarily bad; it can be used in higher areas and still get the water efficiency benefit while flood-irrigation is used in the low lands. A mixed strategy may be best.*
- *For more information, contact Michelle Anderson: [michelle.anderson@umwestern.edu](mailto:michelle.anderson@umwestern.edu)*
  - *Michelle is going to try to get out in the field for a few weeks in May to familiarize herself with the area and irrigation practices in the Big Hole.*
    - *If you want an eye-opener, just get in an airplane and fly over the valley; you'll be amazed at what you see.*
- *Would you (Michelle) be the one applying for this grant?*
  - *That depends on the grant, for some of them, BHWC would need to be the lead and Michelle would be a subcontractor.*
  - *That's why Michelle is here, this isn't the kind of project she could (or would want to) do on her own.*

### **In Summary:**

- Are BHWC and Big Hole landowners interested in this?
- Would landowners let Michelle onto their land to study birds/migration as relates to irrigation practices?
- Should BHWC support/collaborate on this?

### **Upcoming Meetings**

- March 15, 2017, BHWC public meeting, 7pm @ Wisdom Community Building. Topic: Upper Big Hole Arctic Grayling Recovery Update.
  - *\*Note time change from 6pm to 7pm due to daylight savings time.*
- April 19, 2017, BHWC public meeting, 7pm @ Divide Grange. Topic: Big Hole Watershed Weeds.

### **Adjourn**