



# Big Hole Watershed Committee

Monthly Meeting Minutes

August 16, 2017 – 7:00 pm

Wise River Community Building – Wise River, Montana

## In Attendance

Jennifer Downing, BHWC; Tana Nulph, BHWC; Pedro Marques, BHWC; Jacqueline Knutson, MFWP; Jim Dennehy, Butte-Silver Bow Water Utility Department/BHWC; Rob Macioroski, BVHD County Planning; Jim Hagenbarth, Rancher/BHWC; Steve Luebeck, Sportsman/BHWC; Randy Smith, Rancher/BHWC; Dean Peterson, Rancher/BHWC; Scott Reynolds, GGTU; Sandy Frost; Bill Stock; Pamela Stock; John Jackson, BVHD County Commission/BHWC; Pat Donnelly, IWJV; Mary Donnelly; and Sierra Harris, TNC.

**Introductions**      *Attendees introduced themselves.*

**Meeting Minutes**      *June 2017 meeting minutes were reviewed, no additions or corrections.*

## Reports

*Streamflow/Snowpack Report – Jacqueline Knutson, MFWP*

- **Streamflows:** We nearly made it all the way through July without hitting DMP or CCAA flow targets in Section I (Upper Big Hole). However, lack of precipitation and warm weather have led to river restriction above the North Fork confluence and we are flirting with or below flow targets at multiple sites now. Cooler nighttime temperatures have contributed to the lifting of Hoot Owl restrictions in the Upper Big Hole this week. Upper basin streamflow contributions from CCAA landowners began in the last few weeks and enrolled landowners are complying with site plans. Sections II, III, and IV are maintaining flows and remain above DMP action levels. Streamflows in Section V reached 150 cfs today which is at the conservation level (phone tree etc.).

<a href="#">06023500</a>	Big Hole River near Jackson MT	25.0	22.8	1.14	--	08/16 07:15 MDT
<a href="#">06023800</a>	Big Hole River ab Spring Creek nr Jackson MT	35.0	15.8	1.78	--	08/16 07:00 MDT
<a href="#">06024020</a>	Big Hole River at Miner Creek nr Jackson MT	86.0	57.5	1.11	--	08/16 07:15 MDT
<a href="#">06024450</a>	Big Hole River bl Big Lake Cr at Wisdom MT	26.0	44.3	1.85	13.6	08/16 06:45 MDT
<a href="#">06024540</a>	Big Hole River bl Mudd Cr nr Wisdom MT	97.0	110	2.74	13.6	08/16 07:30 MDT
<a href="#">06024580</a>	Big Hole River near Wise River MT	292	209	2.60	12.5	08/16 06:30 MDT
<a href="#">06025250</a>	Big Hole River at Maiden Rock nr Divide MT	330	325	2.90	13.8	08/16 06:45 MDT
<a href="#">06025500</a>	Big Hole River near Melrose MT	390	285	1.35	14.6	08/16 07:15 MDT
<a href="#">06026210</a>	Big Hole River near Glen MT	250	324	2.30	15.3	08/16 07:30 MDT
<a href="#">06026420</a>	Big Hole R bl Hamilton Ditch nr Twin Bridges, MT	147	150	0.94	17.0	08/16 06:30 MDT

- **Precipitation:** Precipitation in Montana was below average for July due to a high pressure ridge that centered over the state early in the month. The first half of the month saw some thunderstorm activity but very little sustained precipitation. During the second half of July thunderstorms became more infrequent and conditions became drier creating severe fire activity that has continued to bring smoky conditions to the Big Hole Valley. Valley rainfall amounts in both the upper and lower Big Hole totaled a half inch or less for July (less than half the average). The high pressure ridge that dominated Montana in July began to break down in early August and thunderstorms and cooler weather have begun to return.
- **Temperatures:** July temperatures were above normal across the state. Montana recorded its 4th warmest July of record (138 years) and the warmest since 2007. This was due, in part, to the same high pressure ridge that settled over Montana and chased away the rain.

- *Forecast:* Forecasters are increasingly coming to the conclusion that this winter will be ENSO-neutral meaning that there will neither be a La Nina nor El Nino event. While forecasters are confident in neutral ENSO conditions through February of 2018 this makes it very difficult for forecasters to be confident of anything else. There are plenty of other patterns influencing weather conditions but without a clear El Nino or La Nina event it is very difficult for forecasters to make predictions months in advance.
- The three-month outlook: For the next three months, we can expect a continuation of above average temperatures in Southwest Montana. Precipitation is proving more difficult to forecast but we will likely see average fall precipitation through October.

*Drought Management Plan – Jennifer Downing, Executive Director*

- It's been a pretty good summer, thanks to several things: a cold spring, good snowpack, the DMP, and all of the work that has gone into making the watershed more drought resilient.

*Director's Report - Jennifer Downing, Executive Director*

- In the summer time we're focused on summer project work, including Mount Haggin.
- BHWC held a pint night at Beaverhead Brewing in Dillon on June 24<sup>th</sup>. Thank you to everyone who attended in support of BHWC!
- Butte-Silver Bow Water Utility Department hosted BHWC for a tour of the new Basin Creek Water Treatment Plant in Butte, which is important to BHWC because it decreases the amount of water needed to be pumped from the Big Hole River to supply Butte.
- BHWC "We dig for charity" Pint Night coming up Thursday, August 31, 2017, 5-8pm at Quarry Brewing in Butte. Quarry Brewing will donate \$.50 per pint purchased to BHWC.
- French Gulch and Moose Creek project tour coming up – Friday, September 15<sup>th</sup>. An announcement is attached, and you can RSVP to Tana if you'd like to attend (so we can get a headcount for lunch).

*Steering Committee – Randy Smith, Chairman; Jim Hagenbarth, Vice-Chairman; and Steve Luebeck, Treasurer*

- The steering committee is happy with the progress BHWC is making.

*Wildlife Report – Jim Hagenbarth, Vice-Chairman and Tana Nulph, Conservation Programs Coordinator*

- **Carcass Management:** BHWC offered carcass removal to Big Hole ranchers March-May, 2017. Removed 46 carcasses from 7 ranches; transported them to the new carcass compost facility at the MDT shop near Wisdom.
  - Removing and composting carcasses removes predator attractant to reduce predator-livestock conflict and help manage predator populations by limiting food supply.
  - BHWC also provided carcass removal for the Centennial Valley this spring. USFWS provided fuel and the carcass removal dump truck; CVA paid our driver's salary for the Centennial portion of this year's carcass removal.
- **Range Riders:** BHWC's Upper Big Hole Range Rider season started July 1 and runs through September 30. We have been working on developing a 2<sup>nd</sup> range rider program to serve the middle watershed (between Wisdom and Wise River), but lack funding to start the program this year.
  - Wildlife depredation has occurred recently in the Pioneers/Horse Prairie this summer; Wildlife Services removed 11 wolves.
- **Landowner-led Conflict Reduction:** BHWC has been meeting with other conservation groups and landowners to discuss wildlife-livestock conflict issues, potential solutions, funding sources, etc. through a landowner-led conflict resolution group initiated by the Blackfoot Challenge. If you are a landowner/livestock producer and would like to get involved with this group, please contact Tana.
- **Sage Grouse:** BHWC applied for funding to coordinate sage grouse conservation efforts and provide sagebrush lands restoration. Important to manage sage grouse locally rather than management by Federal government; local solutions to local issues.

## Land Use Planning/People

- Big Hole River Channel Migration Zone maps recently updated: The new maps will be presented and discussed at our November monthly meeting. Channel Migration Zone maps identify the corridor where the Big Hole River channel is likely to move.
- Big Hole River Incentive Program:
  - 5 contracts out; 2 more to create.
  - Next step is permitting.
  - Hopefully some of these projects will be completed this fall.
  - Receiving free material (root wads) from the USFS to use for these projects; excellent example of collaboration between groups.
- Society for Ecological Restoration conference: Pedro to attend the 7th Global Conference of the Society for Ecological Restoration in Iguassu Falls, Brazil from August 27th to September 1st to present information on innovations in steep slope erosion control that we've been developing on Mount Haggin over the last 5 years. He'll be sure to highlight all the great collaborative conservation going on by the BHWC over the last 20 years.
  - This is the 2<sup>nd</sup> time this year that Pedro has brought BHWC to a global audience and conducted some important networking.
- Purchased a drone this year to help with monitoring and telling our story.

## New Business

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### **Meeting Topic: Sandhill Cranes in the Big Hole Watershed**

*Patrick Donnelly, Intermountain West Joint Venture*

*Background:* Patrick Donnelly is a spatial ecologist with Intermountain West Joint Venture (IWJV) out of Missoula. IWJV is funded by the USFWS and is similar to BHWC in that it's a multi-entity collaborative group serving a large region. Board members include private ranchers, State conservationists, Federal government representatives, etc. Patrick is also research affiliate to the University of Montana – he has lab space, students, and technicians there, which allows him to conduct research and get products out efficiently. He also works with the Sage Grouse Initiative. His fundamental understanding of landscape ecology, field experience, and spatial modeling skills provide the expertise needed to develop and execute broad scale habitat conservation strategies necessary to meet continental avian population goals.

#### Sandhill Cranes

- Why do this work?
  - Precipitation is so erratic in the West, and it has a dramatic impact on Sandhill Cranes and other migratory birds.
- Lesser and Greater Sandhill Cranes
- 3 distinct populations: Lower Colorado River Valley, Central Valley, Rocky Mountain.
- Rocky Mountain Population (RMP) Sandhill Cranes are the cranes that inhabit the Big Hole watershed.
  - 90% of these birds (about 20,000) winter in the Rio Grande Valley in New Mexico.
  - The San Luis Valley in Southern Colorado is another important place; the cranes congregate here for about 5 weeks before continuing south.
  - Each fall, this population is monitored using aerial surveys.
    - There is a hunting season for this population to regulate depredation (i.e. birds feeding on crops), so aerial monitoring is necessary to insure the population remains stable.
  - Sandhill Cranes are long-lived birds; some cranes banded in the 1970s are still alive today at about 45 years old.
  - Crane chicks are called colts.
  - Sandhill Cranes are very traditional – they have a territory of about 40 acres in size, and return to the same location each year.

- Flood irrigated habitat is their preferred territory.
- Low recruitment rates.
- Breeding areas (like the upper Big Hole Valley), pre-staging (pre-migration feeding) areas (like Dillon). These birds are lazy – they will go from their breeding area to the closest pre-staging area. They prefer cut fields with waste grain on the ground.
- Patrick studies landscape ecology: how changes in the landscape effect bird behavior.
  - Capture birds and put GPS trackers on them to study migration patterns.
  - Changes in irrigation practices and subdivision of landscape affects water availability and timing, which affects Sandhill Crane habitat selection and recruitment rates.
  - Looking at historical data to assess how these changes affect Sandhill Cranes.
    - 30 years' worth of satellite data – a giant stadium-size building full of servers to run this model.
    - Partnered with Google to get this information.
- Effects of subdivision on Sandhill Cranes:
  - In the Teton Valley, there was once about 7,000 birds; now that number is closer to 700-1,000. This is due to the extreme subdivision and development of this area along with a drastic reduction in agricultural lands, which provide habitat for Sandhill Cranes.
  - In the upper Big Hole Valley, we have experienced a much lower rate of subdivision and development and a large amount of agricultural land remains. There are far fewer habitats like the Big Hole left in the West compared to areas like the Teton Valley.
- Timing of water:
  - Ecological synchrony: birds and other animals often move in relation to water availability.
  - Patrick builds models to show when waterfowl come through a system; some waterfowl migrate early (or late), which can help to strategize conservation decisions to benefit certain species. The best bang for your buck is to invest conservation dollars in areas where timing of water and migration coincide.

#### Sage Grouse:

- Do wet areas matter as much to sage grouse as lek locations?
  - Yes. Patrick modeled 30 years of data, mapping drought resiliency in the late summer throughout the entire U.S. and comparing it to the distribution of sage grouse, wanting to understand which areas have the most resiliency relative to drought, because that's where conservation dollars will make the most impact. Results of modeling exercise show that sage grouse choose their leks based on proximity to wet/drought resilient areas.
- Three different sage grouse habitat regions in the west: Great Basin, Rocky Mountains, and Great Plains. In the Rocky Mountains, we experience pulse-driven rain, which keeps the surface of the soil wet, and snowpack, which recharges the aquifer/ground water. Water supply is not as consistent in the Great Basin and Great Plains regions, resulting in the Rocky Mountain population having 3x the drought resiliency (and it lasts later in the year) and a much larger sage grouse population.
- Limiting factors to sage grouse:
  - Conifer encroachment: limits access to wet areas.
- Ranching (availability of habitat/irrigated lands) and availability of water (river conditions, etc.) greatly impact bird species like sage grouse, Sandhill cranes, and pintails, who depend on floodplains and irrigated habitat. So the success and survival of these birds is directly related to things like Arctic grayling recovery, drought resilience, etc.

#### Demonstration

- SGI Interactive Map: <https://map.sagegrouseinitiative.com/>
  - Zoom into Big Hole watershed, map shows various colors of polygons, representing persistence of mesic (wet) resources from 1984-2016. Color represents the percentage of years the mesic resource was productive in the late season. Click on a specific resource to view a time series chart of late season productivity.
    - Can click on a polygon and create a graph to show normalized vegetation index. Green is productive for cows and sage grouse, brown is not. In areas that are flood irrigated, we

- see a different kind of graph (drought resiliency is much higher than in non-irrigated areas).
- Can also access data based on year to see how wet an area was in a particular year.
  - Can select multiple years and the map will cycle through to show the difference between those years.
  - Can do a custom layer to assess areas that are not included in a polygon.
- Can assess cultivation risk, tree canopy layer, fence collision risk, and ecosystem resilience and resistance, in addition to mesic resources.
- The map is user friendly – has a lot of detail to explain graphs, etc.
- Map layers are updated each year.

### Discussion

- *Has IWJV been able to translate this information into County land management decisions?*
  - *Not yet, some of the sage grouse work may be getting close to that, but with the sage grouse work we work through NRCS at the local level. Meetings like this are ways that we can facilitate use of this information for county level planning. This information is fairly new, and we haven't had much of a chance to use it for county decision making, but we see a lot of opportunity for that in the future.*
- *Did I hear you say the current population of all Sandhill cranes is 20,000?*
  - *That's the Rocky Mountain Population of Greater Sandhill Cranes.*
    - *Has that number increased or decreased?*
      - *Over the last 30 years, it's increased dramatically, but over the last 20 years it has remained fairly stable.*
- *One of the examples you had for populations that are staying the same or decreasing, one was the Henry's Lake flat and the other was the Centennial. We have a cattle allotment right on the Continental Divide. The area has been logged and has a lot of aspen. There are quite a few nests up there – the little ones must take some pretty big tumbles when they start to learn to fly. Is it normal for them to be in mountainous areas like that?*
  - *Yes it is, they're not afraid of much and their only real predator is the Golden Eagle, which mainly feeds on juvenile cranes.*
    - *Urban Americans don't realize how important the public lands rancher is. Some of the extremists are trying hard to get us off the land, but like [Aldo] Leopold said, "Conservation will ultimately boil down to rewarding the private landowner who conserves the public interest."*
- *What do you do if you find GPS collars or if hunters take birds with WPS collars on them?*
  - *They can be reused if they are recovered. We've had a few birds meet their fate, but mostly not from hunting.*
- *Do you have any information on how the cranes did before ranching?*
  - *In Oregon, where the pintail study was conducted, we had general land office maps from the 1870s, and we reconstructed the entire landscape. Some of the GLO surveys were great at documenting wetlands. Where we're seeing most of our hay ground today is where historically there were wetlands. For the most part, ranching took over places that were already well irrigated. If you look at the West, it's about 70% public land, with about 80% of wetlands on private land.*
- *I worry about conservation groups that have moved to water leasing or maintain in-stream flows in the river. This is good for streamflow, but doesn't do much for wetland/aquifer recharge. Do you think we're going down the wrong path in certain landscapes?*
  - *Sprinkler irrigation is not bad, but it has its place on the landscape and isn't appropriate everywhere. When you're storing water underground, you're not evaporating water – you're keeping it cool – and as we see the runoff come down from the mountains, recharging streams which helps the fishery and raising groundwater elevation. It has to be a win-win for both the rancher and wildlife. There are always complexities with local hydrology and geology, but in general if you can keep water in the floodplain, you're building drought resiliency.*

- *In the Centennials, they haven't allowed much logging or prescribed fire in the forest. There's 100% more trees there than there was in the 1800s. Do you think it's important that we start managing for water yield? There's not a lot of biodiversity in some of these areas.*
  - *Yes – having healthy systems up high allows us to maintain drought resiliency down low. So while sage grouse and Sandhill cranes mainly inhabit the lowlands, the forest ecosystem is also really important for these species.*

### **Upcoming Meetings**

- August 31, 2017, 5-8pm @ Quarry Brewing – Butte, MT. “We dig for charity” Pint Night. *For each pint purchased, Quarry Brewing will donate \$0.50 to BHWC.*
- September 15, 2017, 10am @ Sugar Loaf Lodge – Anaconda, MT. French Gulch and Moose Creek Restoration Tour. RSVP to Tana Nulph by 9/8/2017. RSVP by email: [tnulph@bhwc.org](mailto:tnulph@bhwc.org) or telephone: (406) 267-3421.
- September 20, 2017, 7-9pm @ the Divide Grange. BHWC Monthly Meeting. Topic: Sage Grouse.
- October 18, 2017 – 7-9pm @ the Divide Grange. BHWC Monthly Meeting. Topic: Mount Haggin Restoration Projects.
- November 15, 2017 – 6-8pm @ the Divide Grange. BHWC Monthly Meeting. Topic: Big Hole River Channel Migration Zone Maps. \*Notice the time change from 7pm to 6pm due to daylight savings time.

### **Adjourn**



**BIG HOLE**  
**WATERSHED COMMITTEE**  
*Conservation Through Consensus.*



**Join us on August 31<sup>st</sup>, 5-8pm**  
**for a PINT NIGHT at**  
**QUARRY BREWING**  
**in Butte!**

**Quarry Brewing will donate \$0.50**  
**per pint purchased back to BHWC to**  
**support the Big Hole River stream**  
**gauges, so come on down to enjoy**  
**some great brews and support a**  
**good cause.**

***We Dig for Charity!***

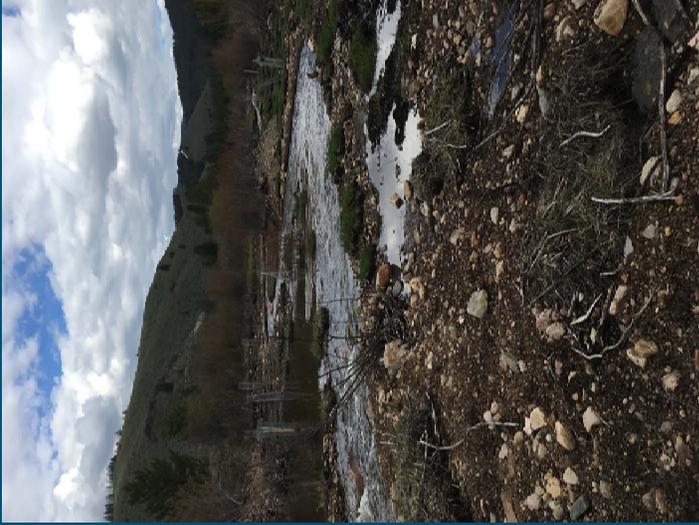
# Big Hole Watershed Committee Restoration Project Tour

French Gulch & Moose Creek Restoration Project

Sugar Loaf Lodge—Mount Haggin Wildlife Management Area

10800 Mill Creek Road, Anaconda, MT 59711

**Friday, September 15, 2017—10am-3:30pm**



Projects to improve water quality, fishery and wildlife with restoration of historic placer mining. Visit the recently completed French Gulch & Moose Creek project and the Mill Creek Road re-location project.



**Tour is open to anyone.**

**Tour is free and includes lunch. RSVP required by September 8, 2017.**

**RSVP to: Tana Nulph, [tnulph@bhwc.org](mailto:tnulph@bhwc.org) or 406-267-3421.**

**Visit our website at [bhwc.org](http://bhwc.org) for a full Agenda**