



Big Hole Watershed Committee

Monthly Meeting Minutes
 May 15, 2019 – 7:00 pm
 Divide Grange – Divide, Montana

In Attendance

Pedro Marques, BHWC; Tana Nulph, BHWC; Ben LaPorte, BHWC; Craig Fellin, Big Hole Lodge; Hans Humber, BHWC/Rancher; Julia Nave, TNC/BSWC; Liz Jones, BHWC/Rancher; Jim Hagenbarth, BHWC/Rancher; Jacqueline Knutson, MFWP; Randy Smith, BHWC/Rancher; Jim Dennehy, BHWC/BSB Water; Murray Strong, Pioneer Technical Services; Jarrett Payne, MFWP; Betty Bowler; Tom Bowler; Chris Edgington, Montana TU; Jim Olsen, MFWP; and Roy Morris, GGTU.

Introductions Attendees introduced themselves.

Meeting Minutes April 2019 meeting minutes were reviewed, no additions or corrections.

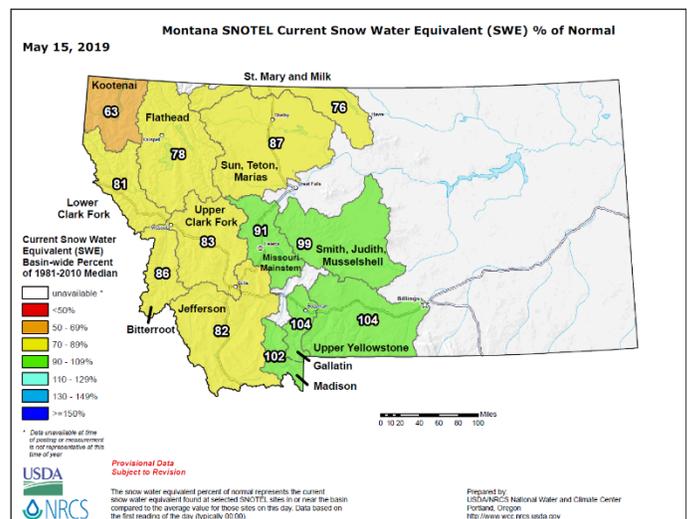
Reports

Streamflow/Snowpack Report – Jacqueline Knutson, MFWP

- Streamflows:** Seasonal gages are near average throughout the basin. Some gages are a little above, some are a little below. Forecasted precipitation should bump streamflows up this weekend and through early next week. The uppermost gage at Saginaw Bridge is not reporting due to some maintenance issues that I'm working on with DNRC. Streamflow forecasts for the April 1st – July 31st period are below average for the Big Hole River so please keep an eye on forecasts and be ready for potential shortages if summer precipitation is sparse once again.

06023500	Big Hole River near Jackson MT	04/07 11:15 MDT	Eqp	Eqp	107
06023800	Big Hole River ab Spring Creek nr Jackson MT	05/15 11:00 MDT	2.52	105	120
06024020	Big Hole River at Miner Creek nr Jackson MT	05/15 11:15 MDT	2.44	491	343
06024450	Big Hole River bl Big Lake Cr at Wisdom MT	05/15 11:45 MDT	3.28	429	340
06024540	Big Hole River bl Mudd Cr nr Wisdom MT	05/15 11:30 MDT	4.51	2,150	1,419
06024580	Big Hole River near Wise River MT	05/15 11:30 MDT	5.00	3,120	2,210
06025250	Big Hole River at Maiden Rock nr Divide MT	05/15 10:45 MDT	5.68	3,950	2,560
06025500	Big Hole River near Melrose MT	05/15 11:15 MDT	4.26	3,970	2,530
06026210	Big Hole River near Glen MT	05/15 11:30 MDT	4.69	3,890	2,320
06026420	Big Hole R bl Hamilton Ditch nr Twin Bridges, MT	05/15 11:30 MDT	3.794	3,050	2,460

- Snowpack:** At this time the Big Hole Basin is at 72% of average. The Jefferson Basin in its entirety is at 82% of average (that's down another 6% from this weekend). The warm weather of April was not kind to our snowpack. A month ago, we were sitting at 97% and now we're down to 72% of snowpack. Snowpack has likely peaked, and we will no longer be adding to those totals; this is what we're down to. We may get some reprieve over the next 10 days, but I do not see this wet pattern adding to our snowpack. The



water supply forecast doesn't look great for the Big Hole this summer and we will certainly be hoping for favorable (wet) weather patterns this year.

- **Precipitation:** Precipitation was above average throughout the state in April. It seems our pattern this winter and spring was to have one incredibly dry month followed by one incredible productive month. April was decently wet, however, warm temperatures pushed precipitation into rain

		15-May 2018	15-May 2019	1981-2010 median	2018
<u>Station</u>	<u>elevation</u>	<u>inches</u>	<u>inches</u>	<u>inches</u>	<u>% avg</u>
Barker Lakes	8250	18.5	13.8	14.7	94
Basin Creek	7180	5.9	2.7	7.8	35
Bloody Dick	7600	8.4	0.2	5.1	4
Calvert Creek	6430	0	0	0.3	0
Darkhorse Lake	8600	36.7	25	31.2	80
Moose Creek	6200	1.2	0.1	6	2
Mule Creek	8300	19.7	12.8	14.9	86
Saddle Mtn.	7940	<u>30.3</u>	<u>18</u>	<u>21.3</u>	85
TOTAL		120.7	72.6	101.3	
BASIN AVERAGE %			72		

rather than snow accumulation or snow that fell melted quickly. Precip was above average but the state average snowfall was well below average.

- **Temperatures:** April temperatures were above average, particularly in our corner of southwest Montana. This contributed to the rapid loss of midlevel snowpack over the month and initiated melt in the upper elevations the first week of May.
- **Forecast:** There has not been a change to the El Nino advisory still in effect for this spring and the most recent forecast has the chance for El Nino continuing through the summer at 70% and even now through the fall at 65% which is increased odds since last month. Temperatures are likely to be above average but the weather patterns we've been seeing over the past few months have been wet and look to remain that way. With luck and a decent flow of moisture we may be able to get through a hot summer with a continuation of the precipitation we've been seeing from time to time this spring.
- The three-month outlook currently favors above average precipitation depending on the flow of incoming weather systems through the rest of the spring and above average temperatures we've seen over the last month. These outlooks will be updated at the end of the week and I urge folks to take a look at these as we head into summer.
- **Discussion**
 - *That confuses me that we're down to 72% snowpack now. March and April were fairly cool; is it the fact that we just didn't get a lot of moisture in those 2 months?*
 - *Jacqueline Knutson: March was fairly cool; April was above average throughout the state.*
 - *What is Darkhorse Lake at now?*
 - *It's at 25 inches; average is 31 (so it's at about 80%). It (snowpack) went really fast and I imagine it will go faster. What has really done us in is the last 2 weeks; we've had a lot of sun and not a lot of moisture.*

Director's Report – Pedro Marques, Executive Director

- Gage Bill (SB32) signed by Governor Bullock. SB32 develops a working group to come up with a strategy to address stream gage funding throughout Montana.
- BHWC is processing reimbursements for our Big Hole River Incentive Program. Completed 3 streambank projects. One more project to complete below Melrose.
- Made some headway on permitting low-tech restoration projects with the Army Corps of Engineers.
- Pedro participated in the High Divide Collaborative's annual meeting. He is participating in an aspen working group (related to conifer encroachment), setting the stage for Ben's work with forestry projects on private land.
- Bids package released for the French Creek/Oregon Creek project – 13 contractors attended meeting – bids are due soon. We secured some funding from DEQ for this project and may receive some funding from BLM as well (will know by July).

Steering Committee – Randy Smith, Chairman; Jim Hagenbarth, Vice-Chairman; and Roy Morris, Secretary

- Steering Committee is happy with the progress BHWC is making.

Wildlife Report – Jim Hagenbarth, Vice-Chairman and Tana Nulph, Associate Director

- John Costa, Wildlife Program Technician, has been busy managing the carcass removal & composting program this spring. Carcass removal ends today and we will have the final numbers for that program in June.
- Range Rider program starts July 1.
- Wildlife Services put on a workshop that Jim Hagenbarth attended. Discussed issues on the Rocky Mountain Front with granaries and chickens. Some takeaways:
 - In Conrad, they have a bear phone tree to let neighbors know when & where bears are causing trouble.
 - Wildlife Services is having a hard time identifying who the problem bears are with so many bears on the landscape.

Restoration and Land Use Planning Report – Ben LaPorte, Programs Manager

- Big Hole River Incentive Program:
 - Three streambank stabilization projects completed this fall:
 - Mahaney Bank: Put in 6 or 7 giant willow transplants. Removed old bridge abutment. Willow-staked entire project. We are really happy with the results; the project removed a lot of the stress on the system and will help to stop the stream from cutting into the bank.
 - Rowe Bank: Willow transplants, willow whips, seed, sod mats.
 - Garrison Bank: 15 root-wad structures, willow whips, willow transplants, sod mats, seed.
- Morris Ranch Beaver Dam Analogue (BDA) Project:
 - Installed 75 BDAs (made with pine tree branches) in 5 days. Slowed down the water, allowing it to overtop the stream's banks and reconnect with the stream's floodplain. BDAs catch sediment. Saw fish throughout the entire reach.
 - *Discussion:*
 - *What's the temperature change going to be?*
 - *I don't know; that's a good question. There is a student at MSU who is studying this stuff and quantifying temperature changes in projects like this. Overall, it's been found that this type of project results in a net decrease in water temperature, because deeper pools that are created cool the water down. This is an experiment – the first time we've done a project like this – and we are learning a lot through this and the impact to working ranch lands.*
 - *Were there ever willows along that stream?*
 - *Probably a long time ago.*
 - East Fork Divide Creek:
 - Next Wednesday and Thursday (May 22 and 23): BHWC and volunteers will be plugging holes in an old beaver dam complex using willow & other plant materials on the East Fork of Divide Creek. **Asking for volunteers; anyone who is interested in helping out, get in touch with Ben.**

New Business

- Jim Hagenbarth attended water meeting in Bozeman. Trying to figure out how to educate the general public about water issues. Talked about cloud seeding, beaver mimicry, ground water storage.
- *Discussion:*
 - *Everyone talks about wanting to restore beaver and beaver structures, but they need to figure out what has happened to the beaver. Beaver populations are not what they used to be, particularly on the upper river.*
 - *In some places, they've been outcompeted by elk. Conifer encroachment is also an issue with spruce taking over old beaver dams and replacing willows and aspen.*

Meeting Topic: Big Hole River Fishery Update

Presented by: Jim Olsen, Montana Fish, Wildlife and Parks

Background: Jim Olsen is a Fisheries Biologist with Montana Fish, Wildlife and Parks. Jim conducts fish population counts, works to restore Arctic grayling populations, and participates in drought and restoration planning efforts in the Big Hole River watershed. Jim has been an impactful and valued partner to the Big Hole Watershed Committee for several years.

Fish Populations

- Monitor 4 sections: Jerry Creek to Dewey, Melrose to Browne's Bridge, Glen to Notch Bottom, Pennington Bridge to High Road
- When the dam was in place in the canyon, there were very few brown trout upstream of it; it was all rainbow trout. When the dam was taken out, the brown trout swam upstream (that's why brown trout counts are higher now than they were historically in the Jerry Creek to Dewey section).
- Fish sections:
 - Jerry Creek to Dewey:
 - Caught 1 grayling; 2 large brown trout
 - Numbers down for rainbows (very few juvenile fish); average fish is about 14 inches & 1 lb.
 - Melrose to Browne's Bridge:
 - Counts low in this section for the last 2 years; don't have a good explanation as to why. Typically, after a good water year (like last year), numbers increase significantly, so this is an anomaly.
 - Glen to Notch Bottom:
 - Didn't count this spring, but fish populations in this section generally fluctuate in proportion to water levels.
 - Rainbow trout numbers decreasing in this section.
 - Pennington Bridge to High Road:
 - Highest brown trout count ever in this section.
 - Rainbow count in this section is also high, but FWP doesn't have the long-term data for rainbows to compare to in this section.
- Fish Management: What do these numbers mean?
 - Fish regulation history:
 - 1981: Special regulations instituted
 - Melrose to Divide: artificials only, 3 fish limit and slot of no harvest 13-22 inches
 - Melrose to mouth: 5 fish limit, only 1 over 18 inches
 - Entire river closed to trout harvest November 30 – 3rd Saturday in May
 - 1988: Expanded special regs section to Dickie Bridge
 - What did this do for fish populations?
 - Fish populations increased dramatically, but reached plateau (carrying capacity) within 5 years. Went from an average of 500 to an average of 900 fish per mile (brown trout) in the Melrose section.
 - Have more 11-15-inch fish, fewer 19+ inch fish. Don't see many fish over 20 inches. (So when people say the fish aren't as big as they used to be, they are right.)
 - What about climate and drought?
 - Fish populations decline during drought years. Especially in the Hogback (Glen to Notch Bottom) section, populations fluctuate in proportion to drought.
 - What about disease?
 - Disease has a significant effect on rainbow trout, particularly in the Melrose section.

- Fungus outbreak in 2014: saw 50% reduction in brown trout population in the river (for the upper 3 sections that are monitored). The fungus only affects fish that are already susceptible; brown trout were susceptible due to spawning.
 - What about fishing pressure?
 - Pressure is not a surrogate for harvest (not driving fish numbers on the river).
 - Tagging data suggests 90% catch and release.
 - Catch and release mortality is generally less than 5%.
 - Take-home message:
 - Fish harvest played role in regulating the fishery prior to special regs going into effect in early 1980s. Currently, factors such as drought and disease impact fishery more so than angler pressure and fish harvest
 - Key is habitat and water.
- *Discussion:*
 - *People on the river see things changes from year-to-year, but that's pretty anecdotal.*
 - *In the last 3 years, hatches on several rivers (e.g. Bitterroot, Big Hole, Missouri, Big Horn, Henry's Fork) have been way down. If aquatic insect numbers have gone down, the smaller fish will have a much harder time finding food. I think we need to do another aquatic insect survey. There was a baseline study done back in the 1960s, so the data is there. Maybe BHWC, GGTU, and others would be interested in securing funding to conduct such a study. But if there's a problem with insect populations, what could we do about it? There is a worldwide insect crash going on, and oddly enough the caddis flies are disappearing more quickly than other species.*
 - *Jim Olsen: I think the insect issue would be great to look at. Insects are very difficult to quantitatively measure. You would have to use the same methods as used in the 60s to compare apples to apples. Where and how you sample is very important. But I definitely would support an insect survey.*
 - *DEQ does some basic monitoring when they do the TMDLs – is there anyone else monitoring these insect populations?*
 - *No, not really – there is an information gap there.*
 - ***Craig Fellin will follow up with GGTU and BHWC on potentially finding some funding to conduct an insect population study on the Big Hole River.***

Cutthroat Restoration Projects

- In the past 6 years, MFWP and partners have restored nearly 70 miles of stream for native fish.
- French Creek:
 - Goal is to restore Arctic grayling and Westslope cutthroat to the drainage.
 - Fish barrier project is moving forward:
 - Contract awarded to RS Johnson in Anaconda
 - Access is built
 - Construction to begin after high water
 - Should be complete this fall
 - ***If anyone wants to help FWP with electrofishing this fall (early September), let Jim know. They will be shocking fish above the barrier and moving them below the barrier.***
 - 2020: Fish removals will begin in 2020; will likely take 2-3 years.
 - 2022 or 2023: Restock with Westslope cutthroat trout and Arctic grayling.
 - Cutthroat will come from Big Hole
 - Arctic grayling will come from Big Hole brood
- Pintler Creek:
 - 2014: Fish removals (nonnatives).
 - 2015: Oreamnos Lake restocked.
 - 2016: Planned to restock creek, but egg take at Cherry and Granite lakes failed.
 - 2018: Egg takes successful; stocked 35,000 eggs into stream.
 - 2019 & 2020: Repeat stocking, stock Oreamnos Lake in 2019.

- Long Branch Creek:
 - Rainbow trout in the stream.
 - Nonnative fish were coming from Tendoy Lake in adjacent drainage. Culvert was blocked by rocks; when snowmelt increased level of lake, extra channel was activated and fish moved from Tendoy Lake to Long Branch Creek.
 - Now the water will flow into Willow Creek like it's supposed to instead of flowing into Long Branch Creek.
 - Long Branch Lake will be stocked with grayling and Westslope cutthroat trout.

French and Oregon Creek Channel Restoration Project

- French Gulch:
 - Why are we doing this project?
 - Improve fish habitat
 - Reduce sedimentation
 - Background: BHWC, FWP, and several others partnered to restore fish habitat and stream conditions in French Gulch, a portion of French Creek, from 2014-2017.
 - What does this mean for the fish?
 - Fish population below area:
 - Rainbow trout: 189/mile
 - Brook trout: 162/mile
 - Fish population above area:
 - Rainbow trout: 342/mile
 - Brook trout: 642/mile
- Oregon Creek:
 - Placer mine restoration project.
 - Building new channel to saturate huge floodplain with water in hopes that the water will flow back into the stream late in the water year as flows decrease.
 - 1200 feet of stream.
 - The potential fish habitat benefits through here are really significant, as is the potential for water storage.
 - Project cost cut by 4x by focusing on creating a large floodplain rather than a highly-engineered stream channel. This also made the project much easier to fund. This is a new way of doing stuff, and if it works well, it will have been launched here by BHWC.
- Discussion:
 - *Where did the Yellowstone cutthroat in Tendoy Lake come from?*
 - *They were stocked there.*
 - *What's the difference between Yellowstone and Westslope cutthroats?*
 - *Yellowstones look more like rainbow. Westslopes are from the West side of Continental Divide; Yellowstones are from the East side.*
 - *Are Yellowstones the same thing as Eastslope cutthroat?*
 - *Yes.*
 - *Do the Yellowstones outcompete other fish or what is the problem with them?*
 - *They don't outcompete necessarily but they interbreed.*
 - *If the French Gulch project is successful and you have an overabundance of fish, are you going to relocate some of those fish to other areas?*
 - *Yes, it's easier to transplant fish than to collect and move eggs. So if we have a good population that we won't diminish by taking some out, we will do that. But the problem is the populations are low and the locations are sometimes very remote. Currently the only decent size population of Westlope cutthroat is Plimpton Lake and we have to backpack fish out of there.*
 - *What about all of the Westslope in Basin Creek?*
 - *They are on the other side of the Divide and are genetically very different from the fish on this side of the divide. They've been isolated for a long time from each other. FWP won't change the genetics of populations by introducing fish from the other side of the*

divide unless there is a critical issue that needs to be addressed (because once you do, you can't go back).

Upcoming Meetings

- June 19, 2019, 7pm @ the Divide Grange. BHWC Monthly Meeting. Topic: Big Hole Watershed Wildlife (Big Game) Update.

Adjourn