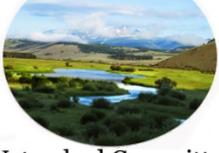


Big Hole



Watershed Committee

Big Hole Watershed Committee

Monthly Meeting Minutes

March 16, 2016 – 7:00 pm

Divide Grange

In Attendance

Jennifer Downing, BHWC; Tana Nulph, BHWC; Pedro Marques, BHWC; Doug Finnicum, BHWC/Butte-Silver Bow Water; Garth Haugland, BHWC/BVHD County; Cody Flammond, Pioneer Technical Services; Brooke Erb, Rancher; Steve Luebeck, BHWC/Sportsman; Tess Scanlon, MSU Masters student; Mike Bias, BHRF; Eric Thorson, Sunrise Fly Shop; Sean Claffey, BLM; Pete Kamperschroer, Rancher; Austin McCullough, MFWP; Russ Riebe, USFS; Mike Roberts, DNRC; Jim Olsen, MFWP; Peter Frick, BHWC/Rancher; Don Reese, Rancher; Emma Cayer, MFWP; Bill Cain, BHWC/Sportsman; Jim Magee, USFWS; Kyle Tackett, NRCS; Cindy Ashcraft, BHWC/Rancher; and Dave Ashcraft, Rancher.

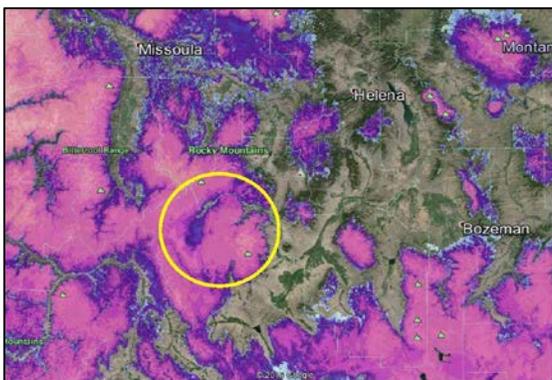
Introductions *Attendees introduced themselves.*

- Welcome Pedro! Pedro Marques recently joined BHWC as Restoration Programs Manager. Pedro has over 10 years restoration and project experience in private consulting in Montana. Pedro has been instrumental in the recovery of smelter-impacted lands in the Mount Haggin Wildlife Management Area on behalf of the Natural Resource Damages Program, BHWC, and MFWP. His experience also includes stream ecology, from stream and habitat assessments to landscape-scale watershed restoration planning, project management and oversight. He and his family reside in Missoula, MT. Contact information: pmarques@bhwc.org or (406) 552-2369.

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

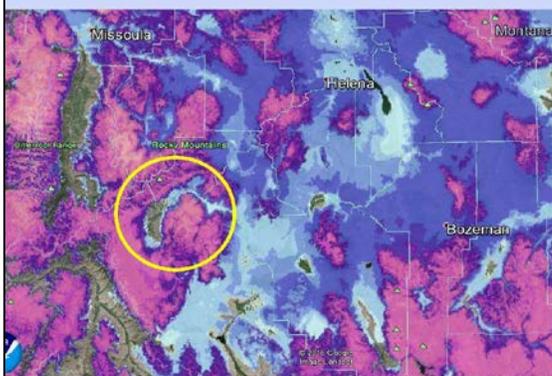
Reports

Streamflow Report –Mike Roberts, DNRC



Snow Cover

March 1, 2016



March 1, 2015

http://www.nhrsc.noaa.gov/nsa/index.html?region=Northern_Rockies&year=2016&month=2&day=25&units=e

- Big Hole has highest snowpack in the state right at 117%.
- El Nino likely to weaken by early summer.

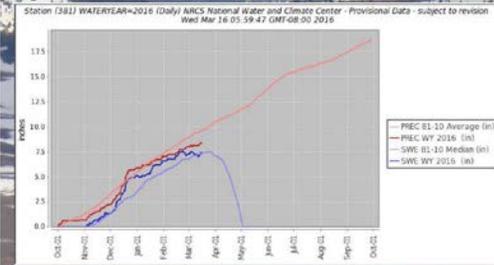
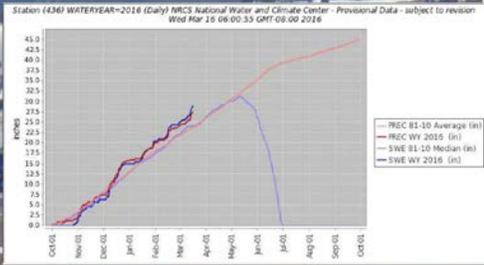
2016 Forecast

El Nino likely to weaken by early summer

Big Hole Basin Snowpack (3/16/16) = 117 % *(3/16/15 = 103%)*
of average
 based on 1981-2010 and median

Darkhorse Lake (8600')

Calvert Creek (6430')



CPC Three-Month Forecast – Above average Temperature, equal chance Precipitation

MONTANA SNOTEL Snow Water Equivalent Update Graph

As of WEDNESDAY: MARCH 16, 2016

Basin	Snow Water Equivalent Percent of Median
KOOTENAI RIVER BASIN	102%
FLATHEAD RIVER BASIN	99%
UPPER CLARK FORK RIVER BASIN	98%
BITTERROOT RIVER BASIN	96%
LOWER CLARK FORK RIVER BASIN	91%
JEFFERSON RIVER BASIN	110%
MADISON RIVER BASIN	98%
GALLATIN RIVER BASIN	97%
MISSOURI HEADWATERS	104%
HEADWATERS MISSOURI MAINSTEM	98%
SMITH, JUDITH, AND MUSSELSHELL RIVER BASINS	101%
SUN, TETON AND MARIAS RIVER BASINS	69%
MISSOURI MAINSTEM RIVER BASIN	88%
ST MARY AND MILK RIVER BASINS	81%
UPPER YELLOWSTONE RIVER BASIN	89%
WIND RIVER BASIN (WYOMING)	85%
SHOSHONE RIVER BASIN (WYOMING)	92%
BIGHORN RIVER BASIN (WYOMING)	82%
TONGUE RIVER BASIN (WYOMING)	55%
POWDER RIVER BASIN (WYOMING)	69%
LOWER YELLOWSTONE RIVER BASIN	77%

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

Drought Management Plan – Jennifer Downing

- Drought Committee met in November to review drought plan and address issues/questions.
 - Proposed:
 - Section V: Add reopening criteria for temperature.
 - Section IV: Increase all flow targets to calibrate the target so that the flow at the Melrose gage remains at 150cfs, as it was when it was the Section IV trigger point (i.e. Potentially 190cfs at Glen = 150cfs at Melrose). Last season we saw the Melrose gage drop down way too low without a closure.
 - Discussed:
 - Lengthening reopening criteria from 3 days to 5 or 7 days to reduce the "yo-yo" of restrictions. MFWP reviewed scenarios of 2015 if the criteria had been to open at 5 and 7 days as compared to the current 3 days. MFWP requested the 3 day reopening criteria remain in place to stay consistent with state drought plan.
 - Adjusting Sections III and IV start/end points. *Discussion continued below.*
 - Additional topics addressed:
 - Time period recorded by gages, etc.; and
 - Hamilton Ranch gage location a question. Initial look from Mike Roberts – it may be the best location possible.
 - Next Steps:
 - Update & produce DMP 2016; and
 - Launch new DMP website.
- *Discussion: Should the Section III endpoint be moved from Maidenrock to Melrose/Salmon Fly FAS?*
 - Question: What is the reasoning behind potentially moving the end point?
 - The water leaving Section III is cool, then heats up as it runs through Section IV with the open river, wider & shallower water. The guiding community would like to continue fish the cool water at the start of the Section IV, referred to as “dead zone”.
 - When the Sections were adjusted in 2013, Dickie Bridge to Maidenrock was similar hydrologically (temperature/flow), so it was included in Section III.
 - Question: Is this proposal because Salmon Fly FAS is a more convenient takeout than Maidenrock? Would need a gage at the Salmon Fly FAS to insure that temperatures are cooler there than at the Glen gage.
 - BHWC has made investment in ensuring the entire DMP is in real-time and measure points are at the end of Sections II-V. This would be a move away from that investment.
 - Comment: The topic may need to be addressed further; with more information/discussion can likely reach consensus.
 - ***If there's not consensus, we shouldn't do it.***
 - *Mike Bias will look into this issue and the temperature in this reach and will report back to the committee in the fall.*

Director's Report - Jennifer Downing

- Capacity Building:
 - Rebranding: BHWC has a new logo:
 - these have been in the works for several months and are now FINAL;



- New website to be revealed soon.
- Board Openings: Joe Willauer has resigned. BHWC sent a request to licensed fishing guides requesting an applicant. So far we have 3 applicants; please keep an eye out for them and answer any questions they may have. They have been invited to meetings and to familiarize themselves with BHWC. The applicants are:
 - Craig Jones, Great Divide Outfitters;
 - Wade Fellin, Big Hole Lodge/Big Hole River Foundation/Upper Missouri Waterkeepers; and
 - Shaun Jeszenka, Shaun Jeszenka Outfitting.

Steering Committee – Steve Luebeck/Bill Cain

- Steering Committee is happy with progress BHWC is making.

Wildlife Committee – Jim Hagenbarth/Dean Peterson/Tana Nulph

- Wildlife Programs: waiting to hear on funding, MDT lease agreement for non-lethal predator management programs (e.g. carcass removal, carcass compost facility, range rider). Seeking additional funding sources.
- Wildlife Speaker Series: BHWC will host another community speaker series event this summer. Topic, location, presenter, and date TBD;
- Sage Grouse: A Big Hole sage grouse working group has been formed to develop a conservation strategy and coordinate spring 2016 lek monitoring. The group is working on identifying the following:
 - Status;
 - Location of sage grouse habitat including land ownership);
 - Life history aspects (e.g. migrations, nesting, brood-rearing, winter/summer leks, etc.); and
 - Threats.

Land Use Planning Committee

- Big Hole River Incentive Program: Pedro will be managing the incentive program. First landowner meeting 3/16/16; expect the program to progress quickly now that Pedro is on board.

Other Business

- USFS: Pintler Face project – integrated management project – scope a proposed action by June. Dealing with grassroots collaboration partners. If you're interested, please contact Russ Riebe – would love to have input/ideas. Russ Riebe: rriebe@fs.fed.us or (406) 689-3243.
- Cloud Seeding: BHWC is working to coordinate a cloud seeding presentation to be held May 18th at 1pm in the Dillon 4-H Building. Cloud seeding is something of which BHWC needs to be aware and informed. The public is welcome to attend the meeting; meeting reminders will be published as the date approaches.

Meeting Topic: Upper Big Hole River Arctic Grayling Recovery Update

Presentation by: Austin, McCullough, MFWP
Emma Cayer, MFWP
Kyle Tackett, NRCS
Jim Magee, USFWS
Mike Roberts, DNRC

Background: The upper Big Hole River Arctic grayling recovery effort is led by the Conservation Candidate Agreement with Assurances (CCAA) program. The CCAA program enrolls landowners in written agreements to help enhance and conserve critical Arctic grayling habitat and conditions between the Big Hole River headwaters near Jackson, MT to Dickie Bridge. In exchange, enrolled landowners are protected from any additional regulatory requirements if the Arctic grayling were listed on the Endangered Species Act (ESA). The CCAA has been in effect since 2006. Each year the CCAA program provides an update on progress to the BWHC.

Arctic Grayling Abundance & Distribution Study – Austin McCullough, MFWP

“Conservation activities for Arctic grayling in the Big Hole Watershed began in the early 1980s and have increased considerably over the last decade. Management actions have been implemented based on presumed relationships among Arctic grayling and their environment. Climate change, habitat alterations, and interactions with nonnative species have been suggested to influence Arctic grayling abundance and distribution, although sparse quantitative information exists to support these hypotheses. The objective of this study was to evaluate the abiotic and biotic factors hypothesized to influence Arctic grayling abundance and distribution. Data have been collected in the Big Hole watershed upstream of Dickie Bridge as a component of conservation activities: Arctic grayling and nonnative salmonids were sampled at 32 sites, habitat data were collected at 441 sites, stream discharge data were collected at 21 sites, and stream temperature data were collected at 33 sites. Statistical analyses are being used to evaluate the relationships among nonnative salmonids, habitat, stream discharge, stream temperature, and Arctic grayling. Preliminary results suggest that the cumulative number of days that mean daily discharge is below a reach-specific minimum target and the cumulative number of hours temperature exceeds established thresholds negatively influence Arctic grayling abundance and that brook trout abundance is positively correlated with Arctic grayling abundance.” – Austin McCullough, MFWP

Discussion:

- **Question:** When you have high concentrations of nonnatives, you have low concentrations of grayling and vice versa. Is that correct?
 - **Answer:** That is true for brown trout and rainbow trout, but not for brook trout. More brook trout = more grayling.
- **Question:** Do you have a theory as to why the relationship with brook trout is different from the relationship with rainbows and browns?
 - **Answer:** The patterns with brook trout & temperature and grayling & temperature are similar. It's not the brook trout that are affecting the grayling, but what is good for the brook trout is also good for the grayling.
- **Question:** Are there any variables out there that you didn't look at?
 - **Answer:** I think there definitely is, but this project came together because we had a really big data set characterizing these factors that are affecting grayling, so we analyzed it. It doesn't mean we assessed every factor.

Arctic Grayling Program Update – Emma Cayer, MFWP

2014 Not-Warranted Decision

- 5 factors in deciding whether to list a species under the ESA:
 1. Presence of threatened destruction, modification, or curtailment of habitat or range;
 2. Overutilization for commercial, recreational, scientific, or educational purposes;
 3. Disease or predation;
 4. Inadequacy of existing regulatory mechanisms; and
 5. Other natural or manmade factors affecting its continued existence.
- Basis for listing/delisting: USFWS makes decision based solely on best scientific and commercial data available and efforts being made by the State of Montana.
- USFWS announced “Not-warranted” listing decision 8/19/2014 citing:
 1. Improved habitat;
 2. Large-scale private lands conservation – CCAA;
 3. Grayling responding favorably to improved habitat;
 4. Grayling population size stable or trending up;
 5. Populations are genetically diverse and there are adequate breeders to sustain genetic diversity; and
 6. Populations are distributed through much of their native range.

2015 Lawsuit

- USFWS sued over Not-warranted decision 2/5/2015.
- Lawsuit brought by:
 - Center for Biological Diversity;
 - Western Watersheds;
 - George Wuertner; and
 - Pat Munday.
- Plaintiff’s complaint:
 - USFWS violated Endangered Species Act by:
 - Failing to analyze regulatory mechanisms and threats throughout Arctic grayling range;
 - Failing to evaluate threats to Arctic grayling from low population size, habitat destruction (e.g. low streamflows and high temperatures); and
 - Failing to make a case for why the decision was completely reversed (2010-2014).
 - Plaintiffs also stated that the Not-warranted decision provided “no incentive for landowner to stay in the CCAA program”.
- Progress of the case:
 - 1/12/2016: Plaintiffs moved to supplement Administrative Record at hearing;
 - 2/19/2016: Plaintiffs’ summary judgement submitted;
 - 4/15/2016: Defendant’s combined opposition/cross motion for summary judgement due;
 - 4/22/2016: MFWP’s combined opposition/cross motion for summary judgement due;
 - 5/27/2016: Plaintiffs’ reply due;
 - 6/24/2016: Defendant’s reply due;
 - 7/1/2016: MFWP’s reply due; and
 - Summer 2016: likely another hearing in Helena.
- Potential outcomes:
 1. 2014 Not-warranted decision stands; Or
 2. Decision will be remanded and USFWS will conduct another status review to explain why grayling are not warranted for listing under the Endangered Species Act.

CCAA

- Enrollment (2006-2016):
 - 32 landowners (30 site-specific plans);
 - 154,938 private acres;
 - 6,830 State acres;

- Total enrolled acreage: 161,768; and
- 214 stream/river miles enrolled.
- Timeline
 - 20 year permit USFWS and MFWP;
 - 10 year SSP agreements;
 - Annual Landowner Appreciation dinner – engagement;
 - RA 2016;
 - SSP modification; and
 - SSP renewal 2019.
- 10 Year CCAA program goal: “Increase distribution of arctic grayling within project area (CCAA management segments A and B)”:
 - Electroshocking has shown increased distribution; and
 - Use of RSIs has proven effective.
- Monitoring Big Hole Arctic grayling Population
 - 2 methods:
 1. Traditional sampling techniques (relative abundance, distribution).
 - CPUE: 10 electroshocking reaches.
 2. Genetic health (long-term persistence, long-term trends in abundance).
 - 5-10 samples from at least 5 locations.
- Big Hole habitat projects:
 - 186 instream flow projects;
 - 3 entrainment projects;
 - 114 riparian projects; and
 - 76 fish passage projects.
- Upper Big Hole, Miner Creek, and Governor Creek recolonization efforts 2013-2015:
 - 10 RSI Governor Creek;
 - 10 RSI Miner Creek;
 - 6 RSI Upper Big Hole; and
 - 40k eggs.
 - Results:
 - Captured age-1 grayling in Governor Creek in 2015; and
 - Documented 2 consecutive years of natural reproduction in Rock Creek in 2015.

Discussion:

- *Comment:* It is important to realize that the judge cannot list the grayling under the ESA. Either the decision that the Not-Warranted status will stand, or it will be remanded and USFWS will have to do a new status review for the grayling.
- *Comment:* No matter the decision, there will likely be another lawsuit.
 - Response: That’s probably true, but there could not be another lawsuit for the same stated reason. They would have to come up with a new reason.
- *Question:* What is the source of the grayling eggs for RSIs?
 - *Answer:* Ted Turner’s ranch & Axolotl Lake – these populations have Big Hole genetics – we spawn the grayling and take the eggs to the fish hatchery at Big Timber. Once they reach a reach a certain stage in development, we put the eggs in the RSIs to hatch.

Big Hole Arctic Grayling CCAA Conservation Measures 10 Year Summary – Jim Magee, USFWS

2015 New Projects

- 6+ NRCS Irrigation improvements projects;
- 6 (4.16 miles) riparian fence projects;
- 3+ NRCS stockwater system projects;
- 8 fish ladders; and
- 2,451 acres of noxious weeds treated.

CCAA Total Projects

- 116 irrigation structures;
- 70 measuring flumes;
- 58 fish ladders;
- 69 stockwater systems;
- 28 restored miles;
- 116 miles riparian fencing;
- 25 streamflow gauges;
- 15 grade control projects;
- 13 bridges;
- 2 fish screens;
- 1 siphon;
- 72,200 willows planted; and
- 16,450 acres of noxious weeds treated.

CCAA Project Funding

- Funding provided by partner agencies, EQIP, Future Fisheries Improvement Program, BHWC, BHRF, SWIG, RREGI, USBR, AGRP, USFS, TNC, TU, BLM, landowners, and private donors.

CCAA Conservation Projects

- 3 entrainment projects;
- 77 fish passage projects;
- 114 riparian projects; and
- 186 instream flow projects.

Projects by CCAA Segment

- Section A: 15%
- Section B: 11%
- Section C: 27%
- Section D: 25%
- Section E: 19%

Stressors

1. Reduced in-stream flows:
 - Goal: After 10 years – streamflows > flow targets 75% of days (April – October) on years with average snowpack.
 - Projects:
 - 189 irrigation improvement projects (1,370 cfs returned to river);
 - 69 stockwater systems (flow not diverted);
 - 30 instream flow conversion plans (flow targets met 79% of the time); and
 - 417 PODs.
2. Degraded and non-functioning riparian and channel habitats:
 - Goal: Maintain and restore sustainable riparian condition.
 - 36 stream miles improved to sustainable between 2007 and 2013;
 - Next assessments in 2016, 2017, and 2018.
 - Swamp Creek Restoration:
 - 13.5 miles riparian fence/GMPs;
 - 4 miles stream restoration;
 - 2 stockwater projects; and
 - Instream flow agreement, fish passage.
 - 114 projects:
 - 28 miles stream restoration;
 - 114 miles riparian fencing;
 - 69 miles stockwater systems;
 - 30 SSP Riparian Management Plans (110 or 169 miles improved); and
 - 16450 acres of noxious weeds treated.
3. Entrainment:
 - Goal: reduce or eliminate entrainment.
 - 3 projects + rescue surveys:
 - 157 miles rescue surveys (354 rescued, 98% YOY, 2% age 1);
 - 2 fish screens (preventing fish <3" from becoming entrained); and
 - 1 siphons (increases distribution)/
4. Migration barriers/fragmentation:
 - Goal: Remove migration barriers.
 - Fish Trap irrigation efficiency and fish passage project:
 - 7 PODS;

- Functioning structures;
- Measuring devices;
- 2 bridges; and
- Access to 3+ stream miles.
- Total Migration Barrier projects: 77
 - 58 fish ladders (increased access to >70 miles of stream);
 - 13 bridges: (provide access to thermal refugia, seasonal habitats);
 - 15 grade control fish passage (increase distribution in Rock and Big Lake and RSIs in Rock, Governor, Trail Creek, and upper Big Hole); and
 - 1 siphons.

Denil Fish Ladder Evaluation – Kyle Tackett, NRCS

Habitat Accessibility in the Upper Big Hole CCAA Area

- >70 miles of habitat opened since 2005; and
- 77 projects removing barriers to migration.

	Spokane 9/15/2006-10/11/2006	Rock Creek 6/15/2011-7/5/2011	Rock Creek 5/30/2012-6/19/2012
Brooke Trout	23	21	22
Dace	2	1	0
Sucker	159	1	18
Whitefish	105	1	0
Grayling	0	0	1
Ling	6	0	0

Fish Passage Research Group program

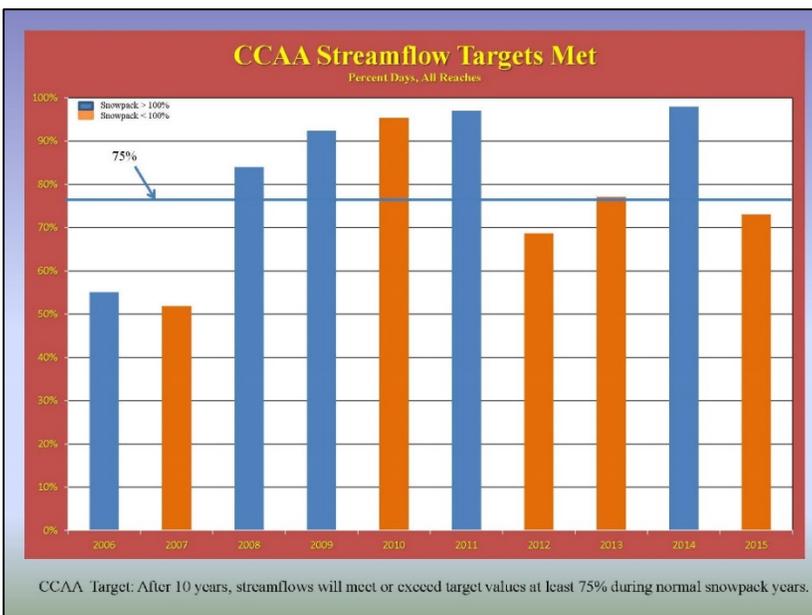
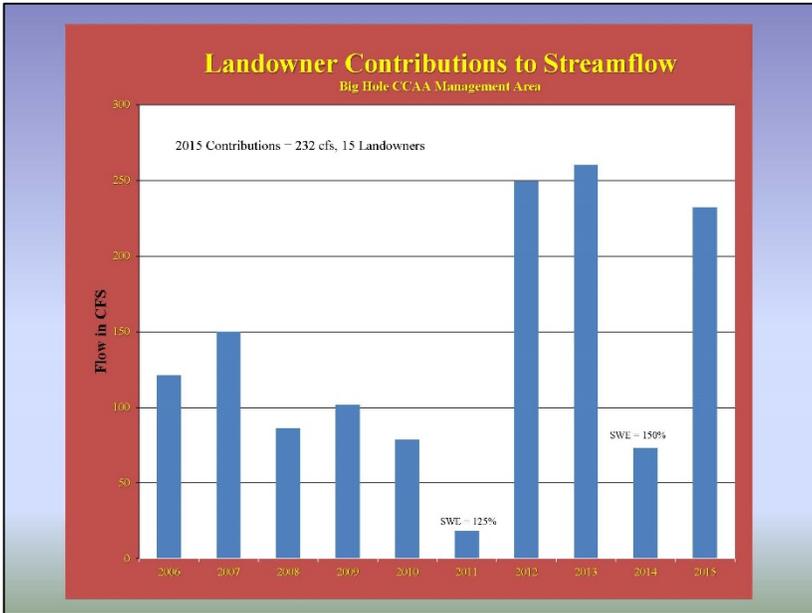
- Bozeman Fish Technology Center research capabilities.
- Goal: to promote restoration of fish and other aquatic species by reconnecting habitat that has been fragmented by barriers.
- Objectives:
 1. Applied research on native, T&E species, and Species of Concern;
 2. Center for forming and fostering partnerships to support research on passage and screening issues; and
 3. Train future engineers and biologists.
- Denil Lab Study:
 - Purpose: to evaluate how slope and water depth affect passage success of grayling through Denil fishways.
 - Goal: to determine the optimum slope range and water depth range for optimal passage of grayling.
- Denil field evaluation (future study depending on funding):
 - Purpose: this study will evaluate grayling passage success through Denil fishways at field sites. It will determine present use, passage timing, and ways to improve designs and passage.
 - Schedule:
 - Write grants and secure funding: 2016-2017; and
 - Study: 2017-2019 (pending funding).

Upper Big Hole Hydrology & CCAA Report – Mike Roberts, DNRC

2015 Water Year

- Big Hole Basin snowpack: ~84% avg. (1981-2010 median)
- Spring precipitation: ~67% avg.
- Summer precipitation: ~123% avg.
- Winter temperatures (valley): 133% avg.

- Spring temperatures (valley): 100% avg.
- Summer temperatures (valley): 102% avg.
- Peak Flows:
 - Melrose: 3930 cfs, June 3; and
 - Wisdom: 1030 cfs, June 3.
- Low Flows :
 - Melrose: 156 cfs, September 3; and
 - Wisdom, 10 cfs, September 3.



Upcoming Meetings

- April 20, 2016, BHWC public meeting, 7pm @ Divide Grange. Topic: Big Hole Weeds
- May 18, 2016, BHWC special presentation, 1pm @ BVHD County Fairgrounds 4-H Building, Topic: Cloud-seeding.
- May 18, 2016, BHWC public meeting, 7pm @ Divide Grange. Topic: TBA.

Adjourn