



Big Hole Watershed Committee

Monthly Meeting Minutes

May 21, 2025 – 7:00 pm at the Divide Grange
Zoom option also provided

In Attendance

In-person: Tana Lynch, BHCW; John Reinhardt, Rancher/BHCW; Tom Bowler, Butte Resident; Betty Bowler, Butte Resident; Dean Peterson, Rancher/BHCW; Jim Hagenbarth, Rancher/BHCW; Matt Cornette, Complete Fly Fisher; Katelin Killoy, MFWP; Luke Lutz, DNRC; Jim Olsen, MFWP; Diane Hutton, Wisdom Resident/BHCW; JM Peck, Rancher/BHCW; Mark Raffety, Rancher/BHCW; Roy Morris, GGTU/BHCW; Mark Kambich, Rancher/BHCW; Cole Denver, MBMG; Gilroy Frederick, Ruby Springs Lodge; Eric Thorson, Sunrise Fly Shop/BHCW; Jon Peterson, Rancher/BHCW Hydrotech; Anthony Zenga, MFWP; Howard Varner, Rancher; Chris Basden, DNRC; Matt Norberg, DNRC; and Craig Fellin, Big Hole Lodge.

Zoom: Pedro Marques, BHCW; Craig Jones, Great Divide Outfitters; Ryan Barba, Sunrise Fly Shop; and Chris Bradley.

Meeting Minutes

BHCW monthly meetings are held at the Divide Grange with a virtual (Zoom) option provided thanks to Southern Montana Telephone Company, who donated the internet service. Meeting minutes and recordings are available at <https://bhwc.org/monthly-meetings/> (scroll down for meeting minutes archive). Printed copies are available during in-person meetings. Contact Tana Lynch, BHCW Associate Director, at tlynch@bhwc.org or (406) 267-3421 to suggest additions or corrections.

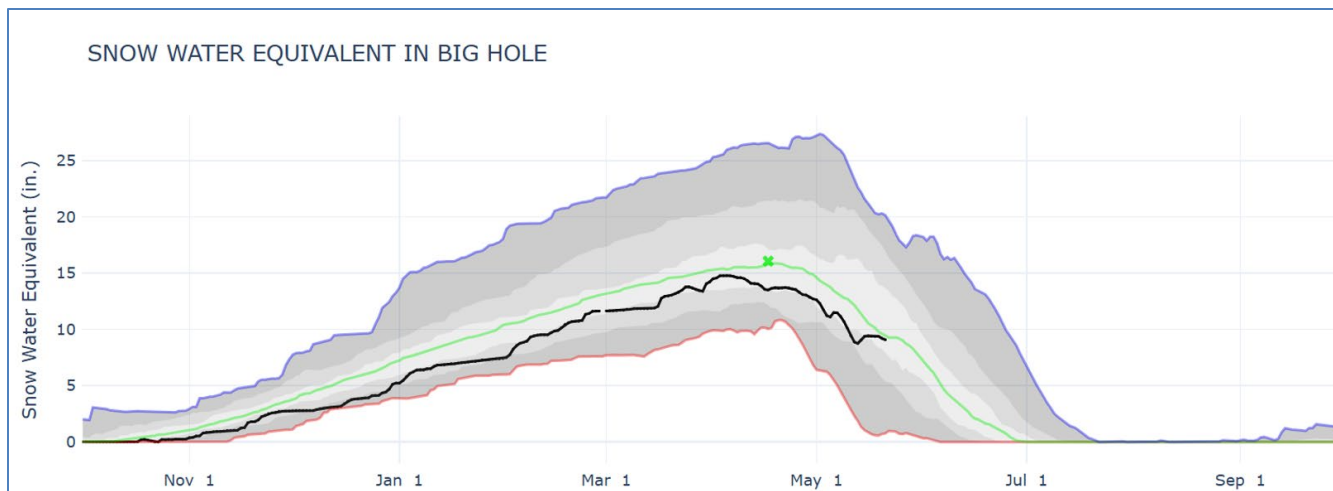
Reports

Streamflow and Snowpack Report – Luke Lutz, Montana Department of Natural Resources and Conservation

- *Streamflows: (May 21st, 2025)*
 - Wisdom (06024450): 103 cfs
 - Big Hole River near Wise River (41D 08000): 1,292 cfs
 - Maiden Rock (06025250): 1,620 cfs
 - Melrose (06025500): 1,730 cfs
 - Glen (06026210): 1,820 cfs
 - Hamilton Ditch (06026420): 1,680
 - Stream And Gage Explorer (StAGE): <https://gis.dnrc.mt.gov/apps/stage/>

Station	Network	Elev. (ft.)	Obs	NRCS Average	% NRCS Average
Barker Lakes	SNOTEL	8,250	13.6	13.3	102%
Basin Creek	SNOTEL	7,120	6.6	4	165%
Bloody Dick	SNOTEL	7,570	0.4	2.8	14%
Calvert Creek	SNOTEL	6,410	0	0	
Darkhorse Lake	SNOTEL	8,930	25.5	29.8	86%
Moose Creek	SNOTEL	6,170	0	2.6	0%
Mule Creek	SNOTEL	8,300	12.3	13.4	92%
Saddle Mtn.	SNOTEL	7,890	14.2	19.7	72%
Slagmelt Lakes	SNOTEL	8,600	24.6		
Basin Index					85%

Snow Water Equivalent on May 20, 2025, end of day	
% of POR Median:	93%
% of NRCS 1991-2020 Median:	96%
% of POR Average:	84%
% of NRCS 1991-2020 Average:	85%



- **Snow Water Equivalent: 85% of average (1991-2020)**

- Peak was 2 weeks early

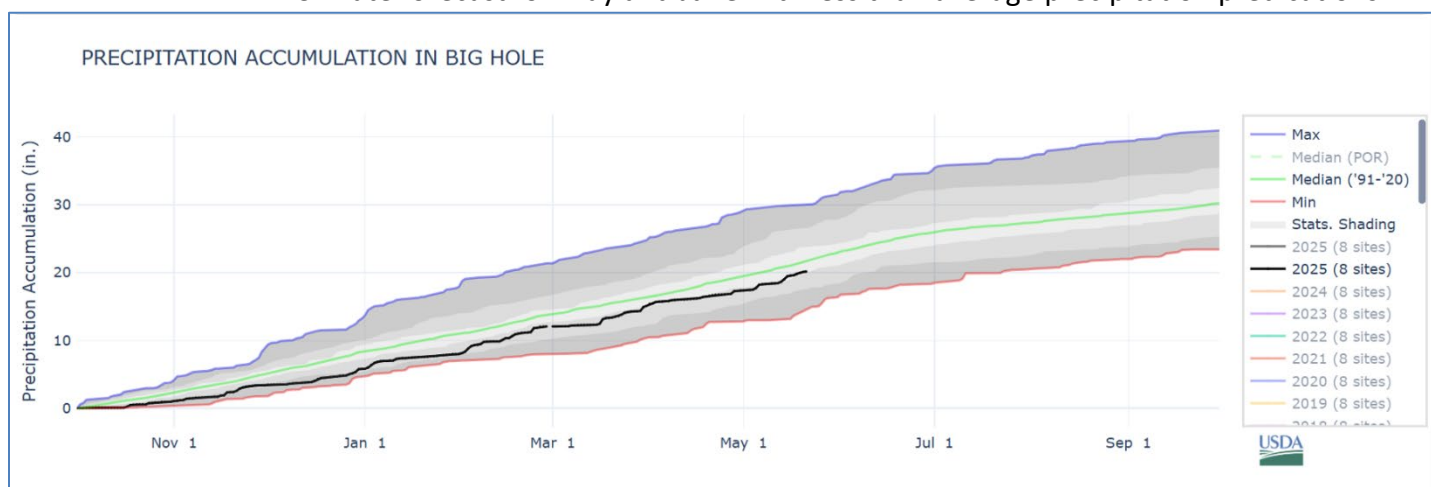
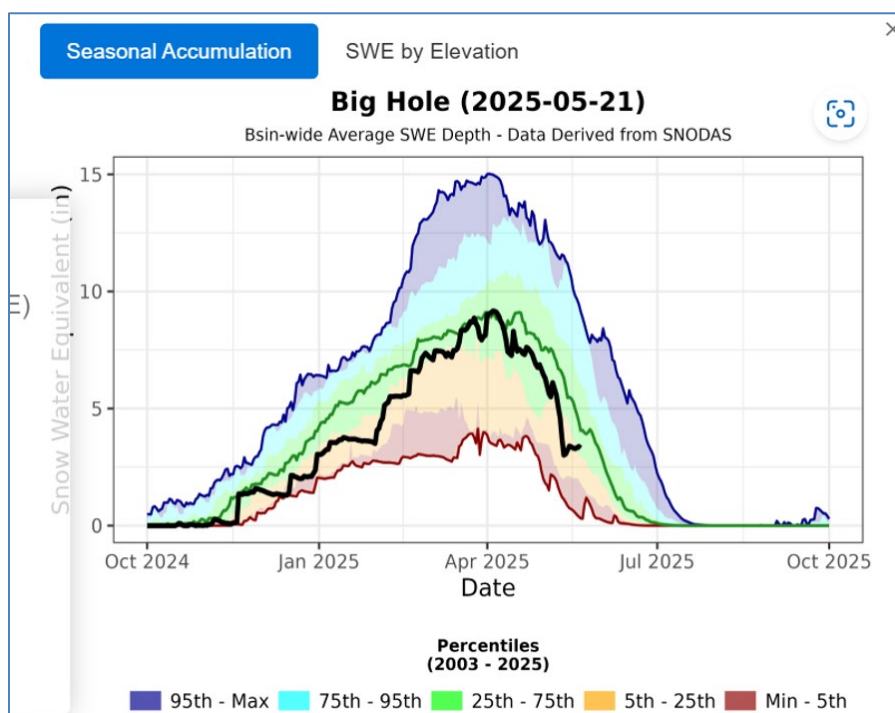
- **Hypsom-SWE (HUC8: 10020004): 90% of Normal**

- **Precipitation: 91% of average (1991-2020)**

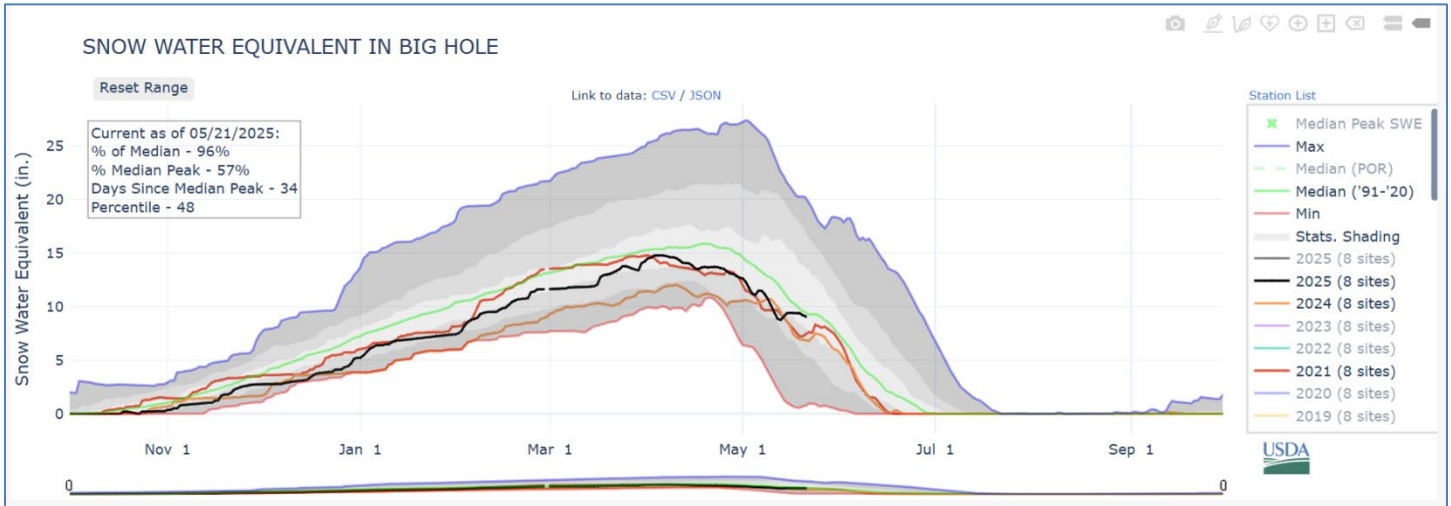
- **CCAA Drought Plan Implementation:**

- Implementation Criteria:

- <80% Average SWE on May 1st
 - <80% Average Precipitation on May 1st
 - Higher than average air temperatures before May 1st
 - Peak Spring Runoff starting before May 1st
 - Climate forecast for May and June with less than average precipitation predications



- Current and Historic Conditions:
 - Current SWE is at or near implementation criteria (75% average SWE on May 5th)
 - Seasonal temperature and precipitation outlooks are not likely to improve or maintain existing conditions
 - Conditions during summer and fall of 2024 did not provide adequate precipitation to recharge and restore soil moisture levels
 - Current conditions and trends are similar to previous drought years
 - Arctic grayling population showed a positive response from the implementation of the drought plan in 2024, despite warm, dry conditions



- Implementation:
 - Combined Flow Target at Wisdom (Sections A-C)
 - Spring Target lowered to 60 cfs (wetted perimeter)
 - Summer Target to Maintain 60 cfs
 - Sections D & E will remain under normal flow target conditions
- Climate Outlook (NOAA):
 - Outlook: The 8-14 day outlook predicts above normal temperatures and below normal precipitation.
 - Seasonal Outlook: The seasonal outlooks slightly above normal temperatures and slightly below below normal precipitation.
 - ENSO-neutral is favored through the Northern Hemisphere summer 2025 (74% chance during June-August), with chances exceeding 50% through August-October 2025 (8 May 2025).
- U.S. Seasonal Drought Outlook: Drought persists in our area.
- Monitor: The Big Hole watershed is currently under abnormally dry to moderate drought conditions.

Director's Report – Pedro Marques, Executive Director

- Federal funding still thawing: '
 - Funds impacted:
 - Forest Service: Elkhorn Partnership Agreement '24
 - BLM: E. Pioneers Conifer (IRA Funding)
 - USFWS/TNC: Smith Springs Design (BIL funding)
 - What we're doing:
 - In touch with with Katie Devlin, aide for Senator Daines in DC
 - Outreach to more reps and request through the Forest

- Engaged with group of landowner-led collaborative groups on common message to release funding
- Staffing:
 - THANK YOU KIM!!! For Communications Support
 - Hydro Technician Interview Monday
 - Opportunity Coming: Science Communicator/YouTube Content Creator
- Staying Solutions-Focused:
 - “Its really easy to be against things. It’s a lot harder to be for things.” – Lesli Allison, Western Landowners Alliance
 - [The Big Why: What is 'conifer expansion' and how does it affect the water supply?](#)
 - Montana Public Radio
 - Role of Expanding Tree Cover on Groundwater
 - Letters in Support of:
 - Montana Bureau of Mines Aquifer Recharge Tool
 - Butte-Silver Bow Water Treatment Plant Safety
 - National Fish and Wildlife Foundation Grayling Program
 - BLM Vegetation Management Environmental Assessment
 - More Outreach Opportunities:
 - Partnerscapes Newsletter
 - CVA Newsletter
 - MWCC social media
 - Legislation:
 - HB580- Water Rights Abandonment- Passed
 - Montana HB 256- Water Storage Fund- Missed Transmittal deadline
 - SB 473- weather modification- Killed in 2nd reading
 - HB 684- Deadline for Water Quality Review: 3rd reading in House, changed to 180 days
- Restoration project update:
 - Contracts underway:
 - High Meadow Storage Capacity
 - California Creek “demo area’ design – W.E.T.
 - East Pioneers Conifer Encroachment – Mule Deer and RMEF (\$30k each)
 - Projects to be contracted:
 - Smith Springs ditch siphon design – Confluence Consulting
 - Beaverhead CD – Elkhorn RFP for project management
 - Rock Creek Fish Barrier – R.E. Miller
 - Elkhorn Preserve
 - Kamperschroer Riparian
 - East Pioneers Conifer Encroachment and Riparian Restoration Project
 - Completed 292 acres
 - River Corridor Units 3,4
 - Rock/Cherry Unit 1
 - Contracted 1045 acres more
 - Rock/Cherry Units 2,3
 - Cherry/Trapper Units 1-8
 - Contracting for Fish Barrier on Rock Creek
 - Thinning on private ground

- Riparian treatments
- California Creek: Basin restoration alternatives

Steering Committee Report – Jim Hagenbarth, Chairman; Dean Peterson, Vice-Chairman; Roy Morris, Secretary

- “Things are going pretty smoothly.”
- Livestock paper quoted Pedro on the effect of loss of Federal funding.
 - “You’re getting us far and wide, Pedro, and thank you very much for lending yourself to the media, because that’s important.” – Jim H.

Communications and Wildlife Report – Tana Lynch, Associate Director

- Communications:
 - Upcoming events:
 - 2025 Montana Folk Festival
 - July 11-13
 - Butte
 - 2025 Wildlife Speaker Series
 - July 16th
 - Trapper Creek Ranch, Melrose
 - Publications:
 - [River advocates seek 'impaired' designation for Big Hole River](#)
 - Montana Standard, April 10th
 - [What is 'conifer expansion' and how does it affect the water supply](#)
 - Montana Public Radio, March 13th
 - [Low flows, warm water combine to make fish parasite lethal, Montana Tech researcher finds](#)
 - Montana Standard, February 20th
 - [Ripples of Change: The Impactful Work of the Big Hole Watershed Committee](#)
 - International Business Times, May 2024
 - Spring Newsletter coming soon!
- Wildlife:
 - Carcass removal
 - Program in-progress
 - Benton Lake dump truck
 - Range Rider
 - Program expansion
 - Funding:
 - America the Beautiful Challenge grant secured (\$194,000 over 3 years)
 - Administered by HRI through MFWP
 - LLB grant secured (\$17,500)
 - LLB proposal in-progress
 - Due May 31st

New Business

- None

Break – 10 minutes

Meeting Topic: Big Hole River Fishery Update

Presented by:

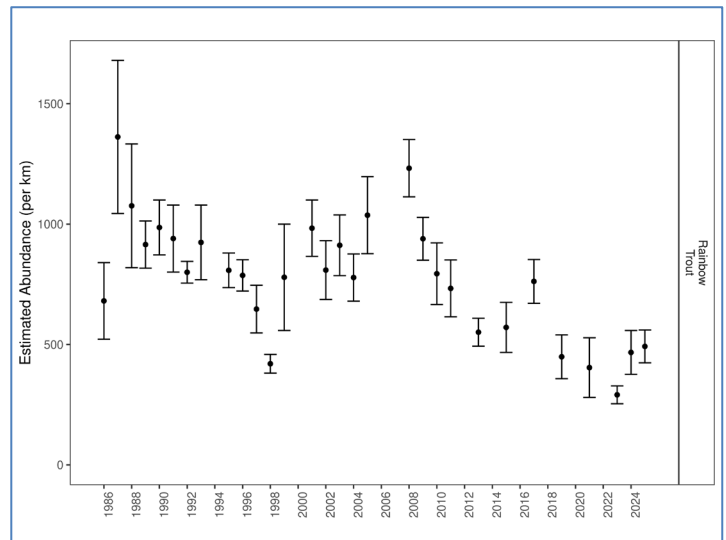
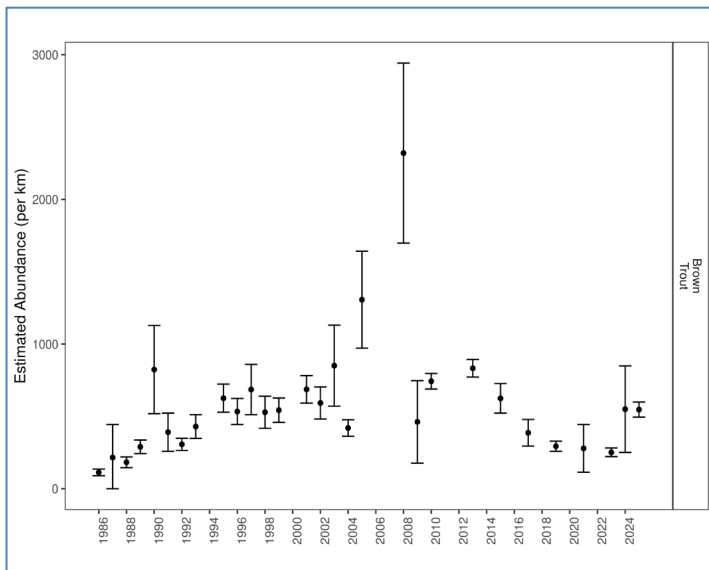
Jim Olsen, Fisheries Biologist – Montana Fish, Wildlife and Parks
Anthony Zenga, Fisheries Technician – Montana Fish, Wildlife and Parks

Background: Jim gave an update on the Big Hole River fishery, including results of FWP's most recent fish counts, while Anthony provided an overview of the fish health study being conducted on the Big Hole and shared some data from that effort.

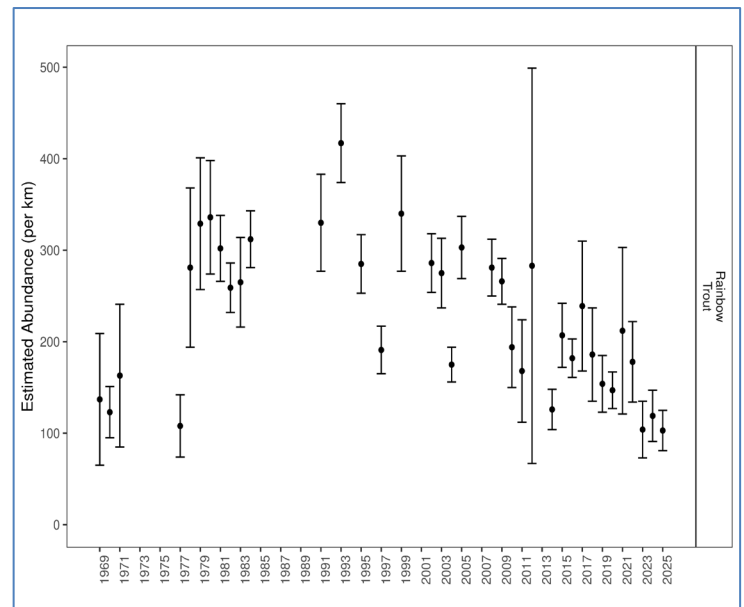
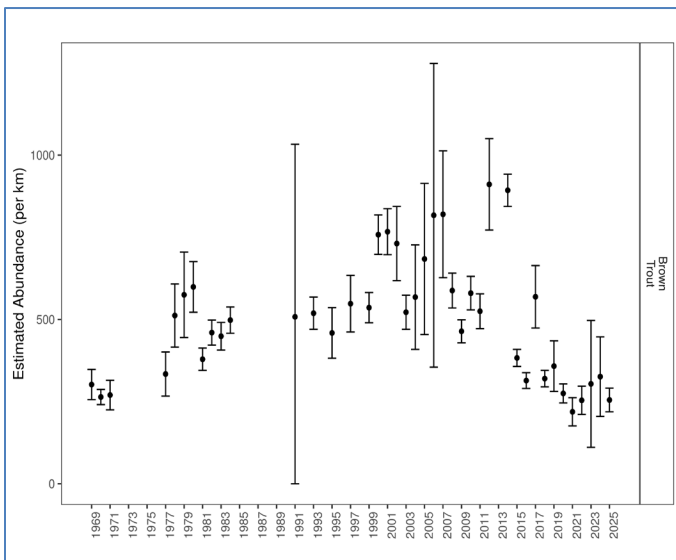
Big Hole River 2025 Update – Jim Olsen

Current Population Numbers

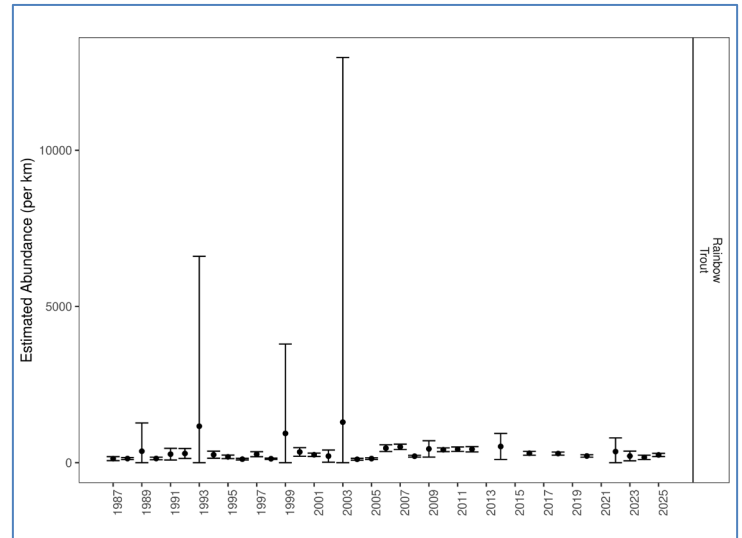
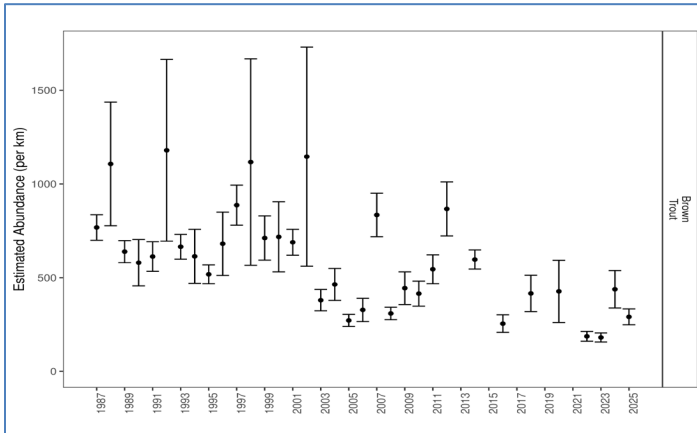
- Jerry Creek:



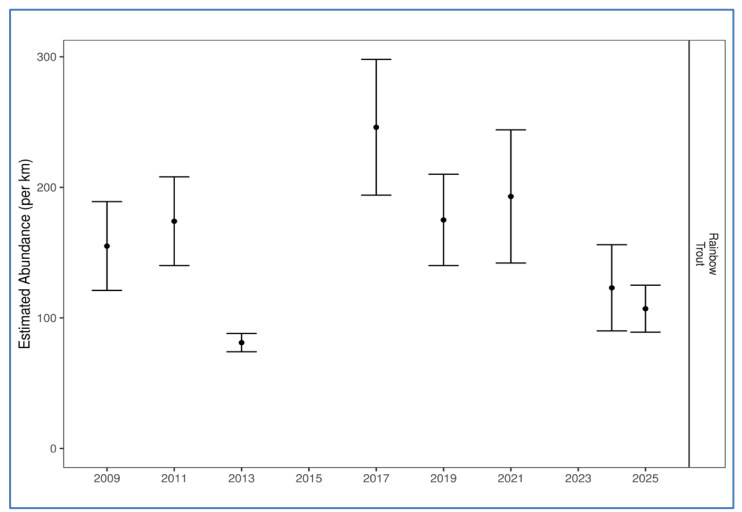
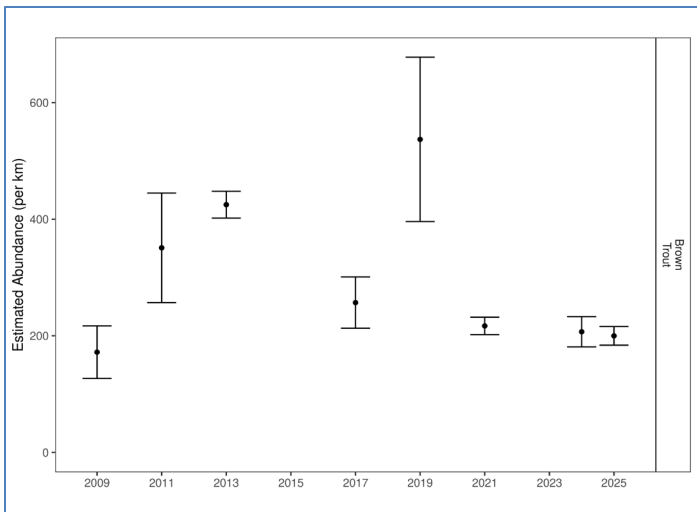
- Melrose:



- Hogback:



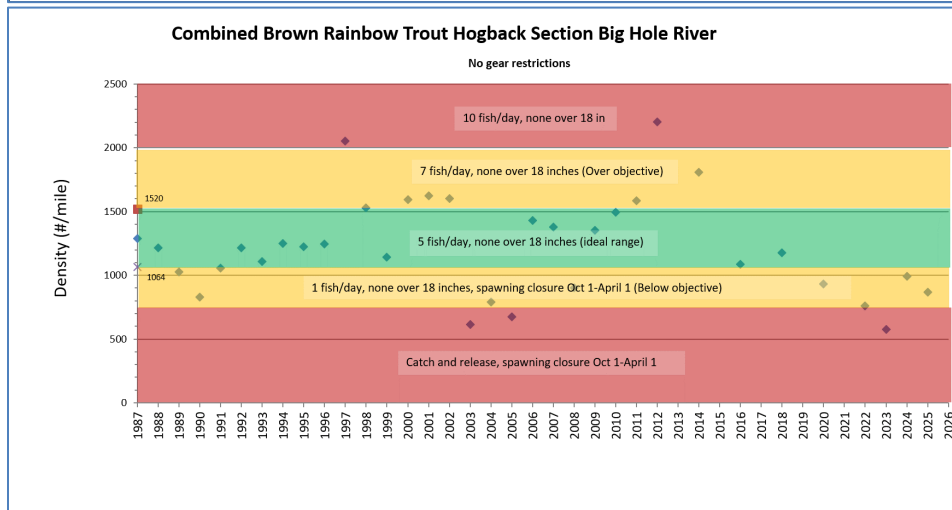
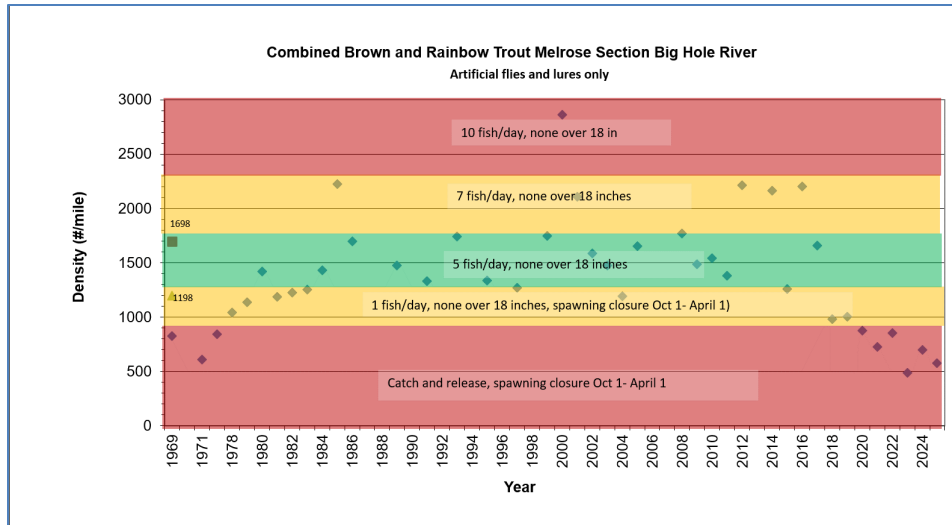
- Pennington:



Management Plan and Research Update

- Big Hole Fish Management Plan
- Fish Research:
 - MSU projects:
 - Adult mortality
 - Juvenile study
 - Recreation study
 - FWP Adaptive Management:
 - What matters most?
 - Tagging statistics (see table, below-right)
 - Big Hole Angling Pressure (see graph, next page)





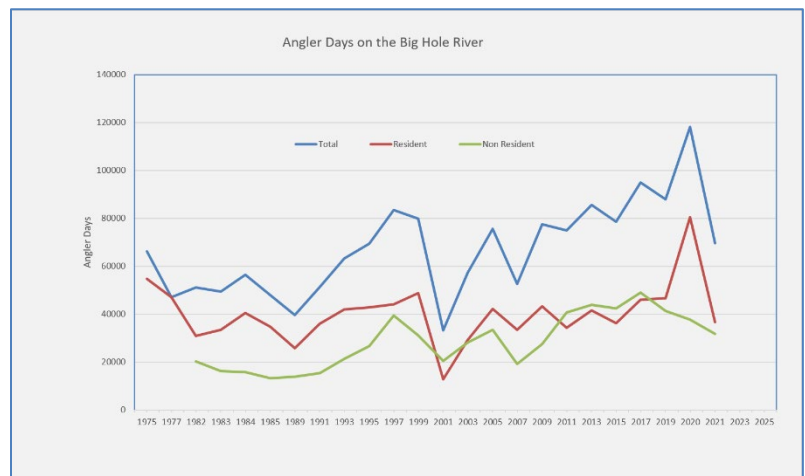
Project in the Big Hole Watershed

- French Creek:
 - Treated in 2021 and 2022
 - 2022 eDNA collected
 - Verified no non-native fish present
 - Restocking (see table, below, right)
- Monitoring:
 - 2 sections:
 - Lower French
 - California

Westslope Cutthroat Trout

- *Westslope Cutthroat Trout Conservation Strategy for the Missouri River Headwaters of Southwest Montana*

Tagging Statistics			
	# New Fish PIT tagged 2025	# PIT Tagged in 2024	# Fish recaptured 2025
LL	2476	1760	393
RB	1399	1129	174
WCT	8	14	3
EB	0	4	0
	3883	2907	570
			19.6



- Big Hole WCT Status and Threats:
 - Number of conservation populations: 49 (25 unaltered; 3 mixed; 21 altered)
 - Populations at-risk: 69% (34 of 49).
 - Populations considered protected: 14
 - Significant threats: Brook trout: 33 populations

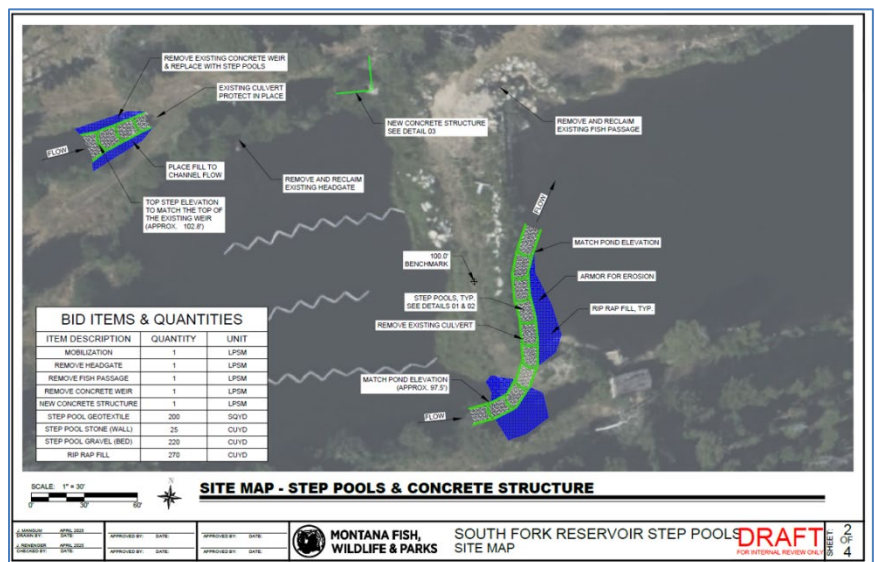
Figure 3. Missouri River headwaters WCT conservation action priorities.

Highest Priority			Lower Priority
Protect and secure genetically unaltered at-risk populations in place	→	Replicate or translocate genetically unaltered at-risk populations that cannot be protected in place	Protect and secure genetically altered conservation populations
			Restore secure genetically unaltered populations

Table 5. Conservation actions required to protect "at-risk" conservation populations. (Note: Some mixed populations may require multiple actions resulting in a sum that is greater than the total number of populations.)

Sub-basin	"At-risk" Populations	Barriers	Miles of nonnative trout removal ^a	Replication	Genetic rescue ^b
Beaverhead	10	8	45	3	2
Big Hole	34	16	140	15	8
Boulder	7	6	24	0	0
Gallatin	7	6	53	1	1
Jefferson	1	1	15	0	0
Madison	12	11	70	1	0
Red Rock	25	20	143	3	3
Ruby	12	12	58	0	2
Upper Missouri	23 ^c	18	71	1	3
Total	131	98	620	23	19

- Bryant Creek WCT Restoration:
 - Treated in 2023 and 2024
 - WCT salvaged in headwaters
 - eDNA in 2025
 - Move WCT from Christiansen
- Calvert Mine pond:
 - Good water quality
 - Stocked in 2023 with 200 WCT
- Doolittle Creek WCT Restoration:
 - Treated in 2023 and 2024
 - WCT salvaged in headwaters and North Fork
 - eDNA in 2025
 - Distribute WCT throughout drainage
- Upcoming WCT projects:
 - Rock Creek (Near Wisdom)
 - Trapper Creek (Near Melrose)
 - EA out for public comment tomorrow
 - Public Meetings
 - Wisdom Community Ctr: June 9, 7:00
 - Melrose School: June 10, 7:00
- South Fork Reservoir Fish Passage Projects



LIVE FISH HEALTH EXAMINATION SHEET

DATE:	FISH ID:
RIVER NAME:	RECAPTURE: <input type="checkbox"/> Yes <input type="checkbox"/> No
SPECIES: <input type="checkbox"/> LL <input type="checkbox"/> RB <input type="checkbox"/> MWF	SITE LAT/LONG:
WEIGHT (gm):	SEX: <input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> UNK
EYES: <input type="checkbox"/> normal <input type="checkbox"/> pop-eye (left, right, or both) <input type="checkbox"/> opaque <input type="checkbox"/> hemorrhagic <input type="checkbox"/> missing <input type="checkbox"/> other:	SPAWNING STATUS: <input type="checkbox"/> NA <input type="checkbox"/> Green <input type="checkbox"/> Ripe <input type="checkbox"/> Spent
FINN: <input type="checkbox"/> normal <input type="checkbox"/> mild erosion <input type="checkbox"/> moderate with hemorrhage <input type="checkbox"/> severe with hemorrhage <input type="checkbox"/> black spots <input type="checkbox"/> parasites (type): <input type="checkbox"/> other:	LENGTH (mm):
HOOK SCARS:	GILLS: <input type="checkbox"/> normal <input type="checkbox"/> pale <input type="checkbox"/> frayed <input type="checkbox"/> eroded <input type="checkbox"/> marginate <input type="checkbox"/> small white spots <input type="checkbox"/> large white cysts <input type="checkbox"/> clubbed <input type="checkbox"/> other:
LESIONS: <input type="checkbox"/> Present <input type="checkbox"/> Not Present	BODY SURFACE: <input type="checkbox"/> normal <input type="checkbox"/> mucoid <input type="checkbox"/> red, eroded <input type="checkbox"/> black spots <input type="checkbox"/> melanistic areas <input type="checkbox"/> hubble <input type="checkbox"/> parasite (type): <input type="checkbox"/> other:
	BRUISING:
Lesion locations: <input type="checkbox"/> top of head <input type="checkbox"/> face <input type="checkbox"/> fins <input type="checkbox"/> body Shape: <input type="checkbox"/> round <input type="checkbox"/> oval <input type="checkbox"/> thread-like <input type="checkbox"/> ribbon <input type="checkbox"/> tube-like Texture: <input type="checkbox"/> smooth <input type="checkbox"/> granular <input type="checkbox"/> nodular <input type="checkbox"/> cheesy Color: Severity: <input type="checkbox"/> minimal <input type="checkbox"/> mild <input type="checkbox"/> moderate <input type="checkbox"/> marked <input type="checkbox"/> severe Extent: _____ % body coverage (50% = one entire side affected)	
Fungal Infection: <input type="checkbox"/> Present <input type="checkbox"/> Not Present	
Fungal locations: <input type="checkbox"/> top of head <input type="checkbox"/> face <input type="checkbox"/> fins <input type="checkbox"/> body Color: Severity: <input type="checkbox"/> minimal <input type="checkbox"/> mild <input type="checkbox"/> moderate <input type="checkbox"/> marked <input type="checkbox"/> severe Extent: _____ % body coverage (50% = one entire side affected)	

Summary of Fish Health Work in 2024 – Anthony Zenga

Fish Found During Long-term Monitoring

- Disease Prevalence During Spring Long-Term Monitoring:

- Disease prevalence was less than 1% during most visits. No longitudinal trends in disease prevalence were observed on any river.
- Disease prevalence was even lower in the fall, as only two fish displaying head necrosis were seen across all sections during one pass electrofishing runs.
- Over 5800 trout were sampled across 16 tributaries and no signs of disease were seen.

Year	Age-0 WCT	WCT age-1	AG eggs	Age -0 AG	AG age-1
2022	22,163			10,000	350
2023	81,164	2,950		2,000	1,683
2024	61,698		105,289		1,103
Totals	165,025	2,950	105,289	12,000	3,136
	167,975			120,425	

Fish Health Sampling

- Spring and fall efforts
 - One pass mobile anode e-fishing + angling
- Target of 2 healthy LL (brown trout), RB (rainbow trout), MWF (mountain whitefish)
- Microbiome, blood, histology, contaminant, bacterial + viral cultures

Sick Fish Reports (All Rivers- Big Hole, Beaverhead, Ruby)

- 28 reports were received
 - 16 regarding singular dead fish
 - 7 regarding multiple dead fish seen in a stretch of river
 - 5 regarding moribund fish
- 3 resulted in collection of samples
- Top most sample taken just upstream of Wise River, downstream most taken around Melrose.

Section	Survey Type	Species (# sampled)	Pop Est/mi (95% CI)	Avg L (in) (range)	Avg W (lbs) (range)
French 2023	3-Pass	AG (17)	25 (0-65)	5.9 (4.8-7.3)	0.05 (0.14-0.08)
French 2024	3-Pass	AG (2)		2.1	0.01
		WCT (216)	353 (322-385)	4.8 (2.1-11.5)	0.06 (0.01-0.62)
French 2012	Mark-Recap	EB (161)	162 (164-160)	7.8 (4.5-14.0)	0.19 (0.04-1.06)
		RB (269)	189 (191-187)	6.8 (4.2-16.0)	0.14 (0.02-1.20)

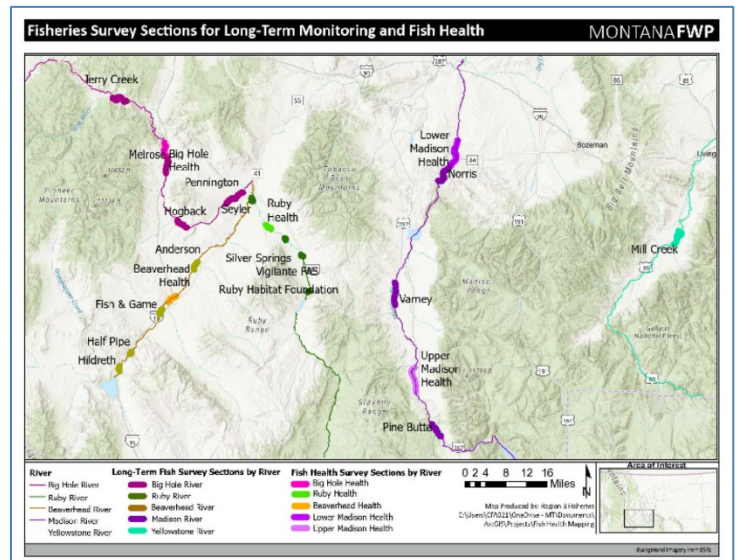
Section	Survey Type	Species (# sampled)	Pop Est/mi (95% CI)	Avg L (in) (range)	Avg W (lbs) (range)
California 1	3-Pass	AG (1)		6.6	0.09
		WCT (64)	1062 (462-1663)	4.8 (3.6-8.0)	0.04 (0.02-0.19)

Fish Health Floats

- Biweekly floats began on the last week of July
- ~6 miles of river that overlapped with fish health sections

Disease Prevalence During Spring Long Term Monitoring										
	Section	Run	LL	RB	LL (HN)	RB (HN)	All Trout (HN)	LL (FI)	RB (FI)	All Trout (FI)
Big Hole	Jerry Creek	Mark 1	145	150	0.0%	0.0%	0.0%	2.1%	0.0%	1.0%
		Mark 2	98	91	1.0%	0.0%	0.5%	0.0%	0.0%	0.0%
		Recap 1	165	200	0.6%	0.0%	0.3%	1.2%	0.0%	0.5%
		Recap 2	83	90	0.0%	0.0%	0.0%	1.2%	0.0%	0.6%
	Melrose	Mark 1	104	60	1.0%	0.0%	0.6%	1.0%	0.0%	0.6%
		Mark 2	97	63	0.0%	0.0%	0.0%	2.1%	0.0%	1.3%
		Recap 1	114	69	1.8%	0.0%	1.1%	1.8%	0.0%	1.1%
		Recap 2	108	44	0.9%	2.3%	1.3%	1.9%	0.0%	1.3%
	Hogback	Mark 1	94	35	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
		Mark 2	86	40	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
		Recap 1	125	58	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
		Recap 2	98	58	2.0%	0.0%	1.3%	1.0%	0.0%	0.6%
	Pennington	Mark 1	166	45	0.6%	0.0%	0.5%	0.0%	0.0%	0.0%
		Mark 2	125	44	1.6%	0.0%	1.2%	0.8%	0.0%	0.6%
		Recap 1	130	60	0.8%	0.0%	0.5%	0.0%	0.0%	0.0%
		Recap 2	59	38	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

- Floats were conducted each week starting in mid-October
- Only one round of floats was conducted in September due to fall shocking
- Priority was given to the Big Hole and Beaverhead when all could not be completed
- Big Hole River:
 - 9 mile stretch
 - Stayed on inside bends
 - 3 dead fish across 12 floats
 - No signs of head necrosis or fungus
 - BLM Maiden Rock to Salmon Fly FAS:
 - Three additional floats were conducted out of the section, either in response to a report or to get eyes on the river during fishing closures.
 - Dead whitefish displaying head necrosis were found, but no samples were taken.
 - Moribund trout and whitefish displaying head lesions were also seen but could not be collected for sample collection.



Upcoming Meetings

- Wednesday, June 18, 2025: BHWC Monthly Meeting
 - 7:00 PM at the Divide Grange Hall- Topic: *Logging for the Company* (History of Mount Haggin) by Jack Losensky, Author

Adjourn