



# Big Hole Watershed Committee

## Monthly Meeting Minutes

August 21, 2024 – 7:00 pm at the Divide Grange

*Zoom option also provided*

### In Attendance

*In-person:* Pedro Marques, BHWC; Tana Lynch, BHWC; Ben LaPorte, BHWC; Emma Roginski, BHWC Intern; Randy Smith, Rancher/BHWC; John Reinhardt, Rancher/BHWC; Tom Bowler, Resident; Betty Bowler, Resident; Jim Keenan, BSB Water Utility/BHWC; Diane Hutton, Resident/BHWC; Jim Hagenbarth, Rancher/BHWC; JM Peck, Rancher/BHWC; Zach Owen, Beaverhead Watershed Committee; Jenna Dohman, MBMG; Mary Sutherland, MBMG; Cole Denver, MBMG; Ed Scott, Resident; Cathy Scott, Resident; Jim Griffin, Resident; Mary Marlie, Resident; Cassandra Kohler, TNC; Mark Mariano, Montana Wetlands and Waterfowl; Danika Holmes, DNRC; Stephen Begley, USFWS; Jim Olsen, MFWP; Dean Peterson, Rancher/BHWC; Kaitlin Boren, DNRC; Katelin Killoy, MFWP; Luke Lutz, MFWP; Emily Downing, IWJV; Teagan Hayes, IWJV; Erica Hansen, IWJV; and Matt Norberg, DNRC.

*Zoom:* Greg Neudecker, USFWS.

### Meeting Minutes

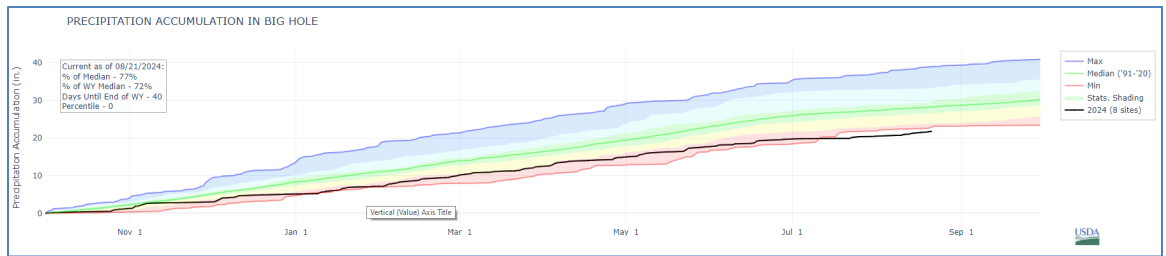
BHWC monthly meetings are held at the Divide Grange with a virtual (Zoom) option provided thanks to Southern Montana Telephone Company, who donated the internet service. Meeting minutes and recordings are available at <https://bhwc.org/monthly-meetings/> (scroll down for meeting minutes archive). Printed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

### Reports

*Streamflow and Snowpack Report – Kaitlin Boren, Department of Natural Resources and Conservation*

- *Streamflows: (August 21st)*
  - Wisdom (06024450): 6 cfs
  - Mudd Creek (06024540): 53 cfs
  - Maiden Rock (06025250): 224 cfs
  - Melrose (06025500): 215 cfs
  - Glen (06026210): 204 cfs
  - Hamilton Ditch (06026420): 103 cfs
  - Stream And Gage Explorer (StAGE): <https://gis.dnrc.mt.gov/apps/stage/>
- *Precipitation:* Currently 77% of median.
- *Outlook:* The 8-14 day outlook predicts slightly above normal temperatures and near normal precipitation.

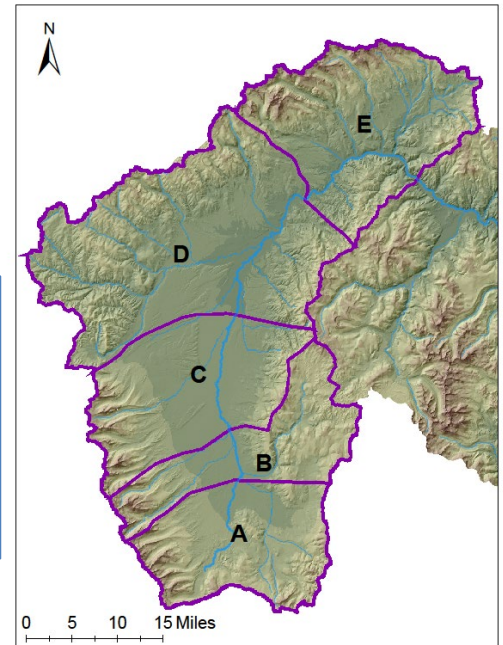
- **Seasonal Outlook:** La Nina watch: ENSO-neutral is expected to continue for



the next several months, with La Niña favored to emerge during September-November (66% chance) and persist through the Northern Hemisphere winter 2024-25 (74% chance during November-January).

- **U.S. Drought Monitor:** The Big Hole watershed is currently in extreme drought.
- **CCAA Streamflow Contributions:**

Reach	Contributions to date (cfs)
A	10
B	10
C	81.85
D	10



**Director’s Report – Pedro Marques, Executive Director**

- **Water and Fish:**
  - Grayling ruling
    - USFWS has 12 months to make a new finding.
    - Population size and stability of Big Hole population affirmed
    - All but two claims were appropriately backed up by data:
      - Ruby population?
      - Continuity of gains achieved?
  - Drought and Conservation
    - Self-reporting via text
    - No water calls made by State
- **People:**
  - WIFI field day
  - Butte Folk Fest with Butte Water
  - Emma doing ALL the THINGS and very well!
- **Director’s Update:**

○ Ben LaPorte: leaving us at the top of his game <ul style="list-style-type: none"> <li>▪ Tested in his first week</li> <li>▪ Over 6 years of excellence and growth to our Restoration Program</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mt. Haggin Uplands- signed off</li> <li>▪ Lower French Creek</li> <li>▪ Lower Oregon Creek</li> <li>▪ French Gulch Fish Passage</li> <li>▪ Oregon Creek headwaters</li> <li>▪ Pennington Bridge</li> <li>▪ Beaver mitigation projects</li> <li>▪ Streambanks: Mossop, Mahaney,</li> </ul>	<ul style="list-style-type: none"> <li>▪ Garrison, Weststeyn, 40-Bar</li> <li>▪ Future Fisheries monitoring</li> <li>▪ Mt. Haggin culverts</li> <li>▪ Trail creek conifers</li> <li>▪ East Pioneers conifers</li> <li>▪ East Fork Divide Creek BDAs</li> <li>▪ Wolk conifers</li> </ul>
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- Dozens of projects
- Millions of \$
- So many stories, lots of new friends
- 2025: Regrouping and Planning for the future

*Steering Committee Report – Jim Hagenbarth, Chair; Dean Peterson, Vice-Chair; Steve Luebeck, Treasurer; and Roy Morris, Secretary*

- The Steering Committee is pleased with the progress BHCW is making.

*Communications and Wildlife Report – Tana Lynch, Associate Director*

- Communications:
  - Events:
    - July 12-14 – Montana Folk Festival
      - BHCW partnered with BSB County Water Utility Dept. to host a display this year
        - Highlighted the link between Butte’s water and the Big Hole, BSB’s upcoming projects, and the importance of water conservation
        - Filling station for water bottles
    - July 17<sup>th</sup> – Wildlife Speaker Series
      - Grizzly Bears presented by Cecily Costello, FWP
        - 50 people in attendance, lots of great food
  - Publications:
    - [Ripples of Change: The Impactful Work of the Big Hole Watershed Committee](#)
      - International Business Times, May 31<sup>st</sup>
    - [Conifer Encroachment: The Big Hole Watershed Committee's Innovative Solutions for Sustainable Ecosystems](#)
      - MSN, June 15<sup>th</sup>
    - [FWP Director, Governor Celebrate Encouraging Trout Counts in the Big Hole River](#)
      - FWP, June 13<sup>th</sup>
    - [Big Hole: Trout Numbers Better Than Last Year But Still Below Average](#)
      - Montana Standard, June 13<sup>th</sup>
    - [BHCW Summer Newsletter](#)
- Wildlife Program Update:
  - Carcass Removal and Composting
    - Currently offered March-May
    - Working on alternative to Red Rock Lakes NWR dump truck – may be able to borrow one from Rocky Mountain Front that we could use year-round.
  - Upper Big Hole Range Rider – in-progress
    - July-September
  - LLB funding secured (\$21,000 for 2024), additional \$28,500 requested
  - America the Beautiful Challenge and RCPP funding pending

*Restoration Report – Ben LaPorte, Program Manager*

- Ben leaving – this will be Ben’s last monthly meeting with us as he has taken a position with Montana Trout Unlimited working on the Clark Fork River. We’ve had a great 6 years with Ben – he has been a joy to work with and has accomplished so much during his time with us. Thank you, Ben, and good luck in the future!!!

- Anaconda Uplands (NRDP and MFWP)
  - Cabbage Gulch BDA maintenance and new
  - Upland Gully and slashing work with WRG and MCC
- Mount Haggin Culvert Removal and Replacement
  - 2 culvert removals and 2 culvert replacements
  - Restored approximately 8.4 miles of upstream passage and connectivity!
- First Chance Gulch Habitat Improvements
  - 120 log-step habitat structures installed in First Chance Gulch
  - 40 log-step habitat structures installed in French Gulch
- Other Happenings
  - Browns Gulch mainstem: 2023 BDA structure maintenance with YEP
  - Trail Creek Conifer Encroachment-Phase 3
    - 232 acres
    - Worman Forestry will start next week
  - East Pioneers Conifer Encroachment
    - Solicitation complete. Working through contracting crews
    - Awarded Mule Deer Foundation Grant!
      - \$30k all toward Eastern Pioneer foothills
  - Lower French Creek bank maintenance
  - BHWC’s summer intern, Emma Roginski, is also wrapping up her time with BHWC. We were truly impressed with the work Emma did for us, including building BDAs and sediment retention structures on Mount Haggin, monitoring Future Fisheries projects, and installing fish habitat in First Chance Gulch. Best of all, she always showed up with a smile and a positive attitude. It was a pleasure working with her. THANKS, EMMA!!!!!!!!!!

**New Business**

- None

**Break – 10 minutes**

**Meeting Topic:  
Beneficial Inefficiencies:**

*Ecosystem Services and Wildlife Habitat Supported By Flood-Irrigated Grass Hay*

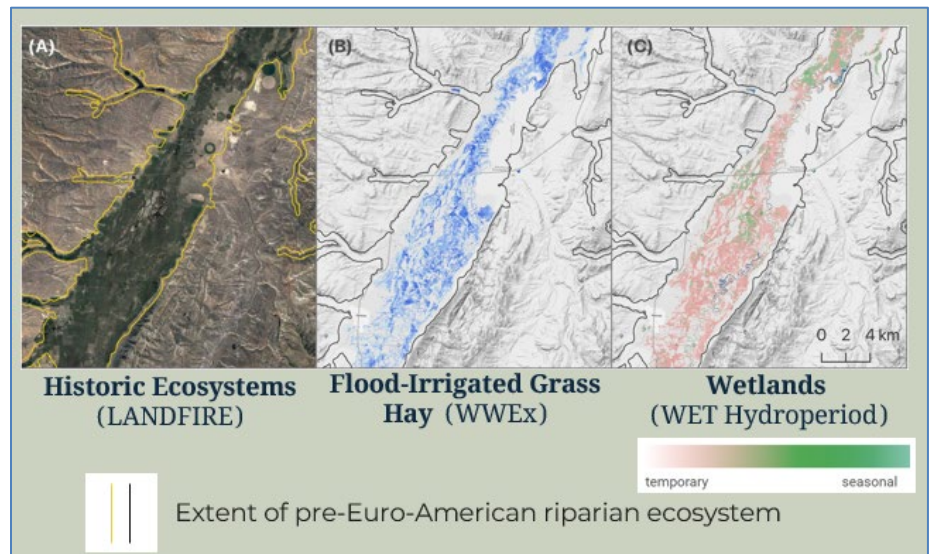
Presented by: Teagan Hayes and Erica Hansen  
Intermountain West Joint Venture (IWJV)

**Who Are We?**

- The IWJV’s mission is to conserve priority bird habitats through partnership-driven, science-based projects and programs.
- The Water 4 Program:
  - Conserving wetlands and “water for”: irrigated agriculture, wildlife and fisheries habitat, groundwater recharge, and landscape resiliency in ways that matter to people.

- New Research:
  - *Beneficial 'inefficiencies' of western ranching: Flood-irrigated hay production sustains wetland systems by mimicking historic hydrologic processes*
    - Authors: J. Patrick Donnelly, Kelsey Jensco, John S. Kimball, Johnnie N. Moore, David Ketchum, Daniel P. Collins, David E. Naugle
    - Supported by: Intermountain West Joint Venture, University of Montana, United States Fish and Wildlife Service
  - What ecosystem services (benefits that ecosystems provide to human communities) are provided by flood irrigated grass hay?
    - Where are these places located?
    - Does flooding mimic natural processes?
    - How much wetland habitat do they support?
  - Study Area:
    1. Warner Valley, OR
    2. Marsh Valley, ID
    3. Star Valley, WY
    4. San Luis Valley, CO

- Analysis:
  - Existing data (irrigated lands, wetlands)
  - Spatial filter (private lands grass hay agriculture)
  - Mapped results (wetlands supported by flood irrigated grass hay production)



- Results:
  - Location: Over 93% of flood-irrigated grass hay wetlands occur in historic riparian floodplains, mimicking natural hydrology that can support groundwater recharge.
  - Elevation: Grass hay production is primarily located in

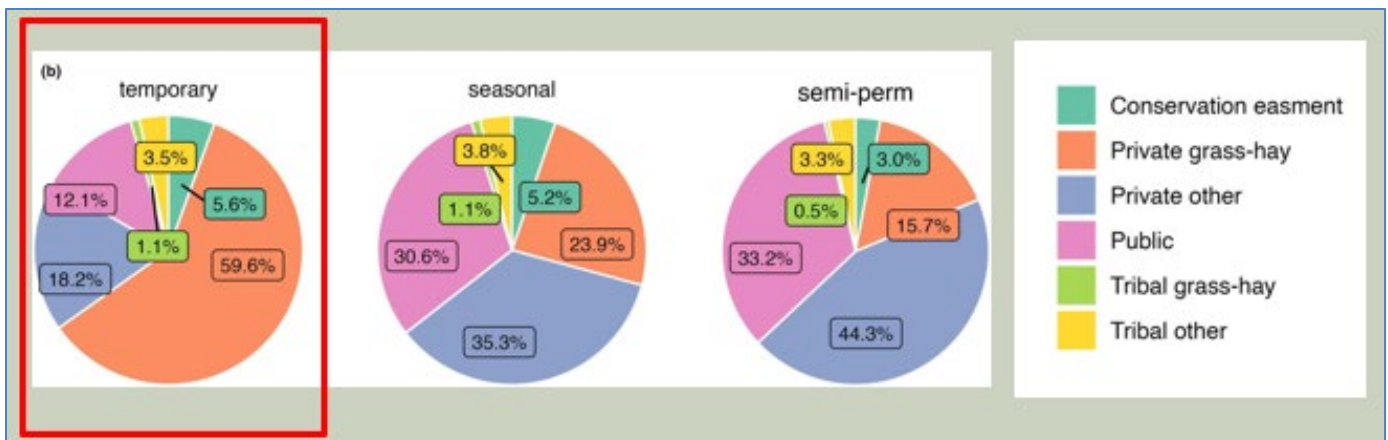
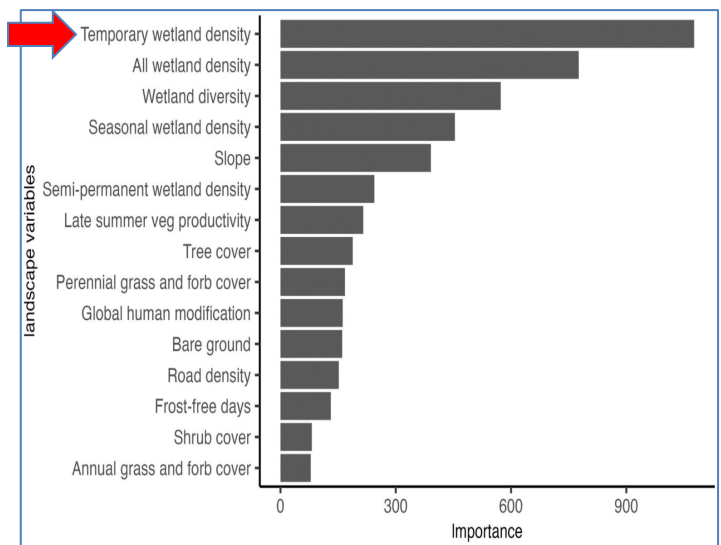
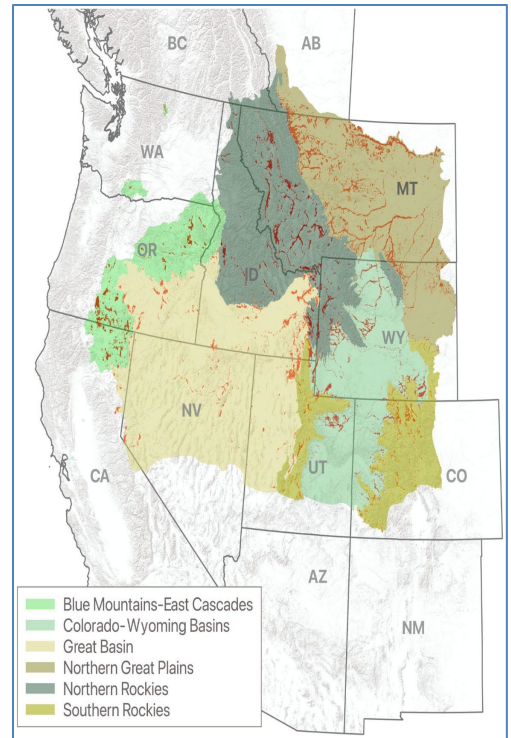
State	Grass-hay wetland area	Proportion of total grass-hay wetland area	Total land irrigated	Grass-hay wetland proportion irr. land
Arizona	0	0.0%	31,295	0.0%
New Mexico	0	0.0%	825,967	0.0%
Washington	8,267	2.5%	2138,274	0.4%
California	11,744	3.5%	562,953	2.1%
Utah	18,922	5.7%	934,520	2.0%
Nevada	20,886	6.3%	607,572	3.4%
Colorado	31,563	9.5%	1122,732	2.8%
Oregon	46,626	14.1%	1488,584	3.1%
<b>Montana</b>	<b>56,843</b>	<b>17.2%</b>	<b>1061,181</b>	<b>5.4%</b>
Idaho	62,518	18.9%	3606,640	1.7%
Wyoming	73,734	22.3%	1034,691	7.1%

- upper watershed reaches, at higher elevations than other crops.
    - Wetlands: Flood-irrigated grass hay represents just 3% of irrigated lands, but supports:
      - 58% of the temporary wetlands and
      - 20% of the seasonal wetlands in the Intermountain West.
    - Timing of flooding: Timing of irrigation application on grass hay meadows aligns with the natural peak flooding of temporary and seasonal wetlands.
  - Key takeaways: Flood irrigation
    - Flood-irrigation can mimic natural processes.
    - Temporary flooding sustains drought-tolerant riparian vegetation and recharges groundwater.
    - Greater use of more efficient irrigation (center-pivots) may impact processes like groundwater recharge and in-stream flows.
- Related research: Sandhill Cranes
  - *Flood-irrigated agriculture mediates climate-induced wetland scarcity for summering sandhill cranes in western North America*
    - Authors: J. Patrick Donnelly, Daniel P. Collins, Jeffrey M. Knetter, James H. Gammonley, Matthew A. Boggle, Blake A. Grisham, M. Cathy Nowak, David E. Naugle
  - Research questions:
    - Where are predicted summer distributions for cranes in the West?
    - How are distributions structured across public and private lands?
    - How are wetlands changing in these areas?
  - Crane tracking:
    - 120 GPS-tagged individuals
    - Data collected from 2014-2022
    - Summer locations identified based on seasonal movements
  - Methods:
    - Crane habitat models developed using landscape variable:
      - Wetland:
        - Hydroperiod
        - Density
        - Diversity
      - Landcover
        - Vegetation type
        - Productivity
      - Human disturbance:
        - Global human modification
        - Road density
      - Climate (frost-free days)
      - Slope

- Models validated by working with 25+ wildlife managers to ensure data reflects on-the-ground observations.
- Models predict crane summer habitat use based on wetlands, landcover, and human development across different landscapes/ownerships.

○ Results:

- Sandhill crane core summering distributions shown above-right in red (occurrence probabilities  $\geq 65\%$ ).
- Predictive summer habitat models:
  - Wetland variables are the most important predictors for crane summer habitat.
- Land ownership: Management of wetland habitats within sandhill crane summering areas
- Wetland trends:
  - Proportion of wetland area drying within sandhill crane core areas.
  - A majority of temporary and seasonal wetlands in core sandhill crane summer habitats are drying. This may impact habitat availability in the future and highlights the importance of practices like flood irrigation.
- Key takeaway – cranes and agriculture:
  - Flood-irrigated grass-hay supports 60% of the



	Temporary	Drying	%drying	Seasonal	Drying	%Dryng	Semi-perm	Drying	%Drying
Blue Mountains-East Cascades	26,966	16,004	59.3%	49,332	24,963	50.6%	22,708	7642	33.7%
Colorado-Wyoming Basins	86,003	38,883	45.2%	38,662	13,380	34.6%	36,717	2653	7.2%
Great Basin	68,296	48,678	71.3%	57,601	37,729	65.5%	39,087	9545	24.4%
Northern Great Plains	32,423	15,901	49.0%	40,239	13,464	33.5%	55,136	6451	11.7%
Northern Rockies	50,978	34,808	68.3%	52,951	21,520	40.6%	30,510	2021	6.6%
Southern Rockies	21,537	12,921	60.0%	11,183	4334	38.8%	6697	405	6.0%

Note: Summaries are partitioned by ecoregion and wetland hydroperiod. Wetland conditions were measured for each year from 1984 to 2022 during sandhill crane sandhill nesting and early colt-rearing periods (April 1 to June 30).

temporary wetlands used by breeding greater sandhill cranes in the West (Donnelly et al. 2024).

- 93% of all flood irrigated grass hay agriculture is predicted as core sandhill crane breeding habitat (Donnelly et al. 2024).

- Questions?

- Erica Hansen - Water 4 Coordinator - [erica.hansen@iwjv.org](mailto:erica.hansen@iwjv.org)
- Teagan Hayes - Science to Implementation Specialist - [teagan.hayes@iwjv.org](mailto:teagan.hayes@iwjv.org)

- Working Wetlands Explorer

- Scan QR code to right:



### Upcoming Meetings

- Wednesday, September 18, 2024: **BHWC Monthly Meeting: DNRC Cloud Seeding Pilot Study**
  - 7:00 PM at the Divide Grange Hall

### Adjourn