DNRC Water 101

10.21.2025

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Water Resources Division
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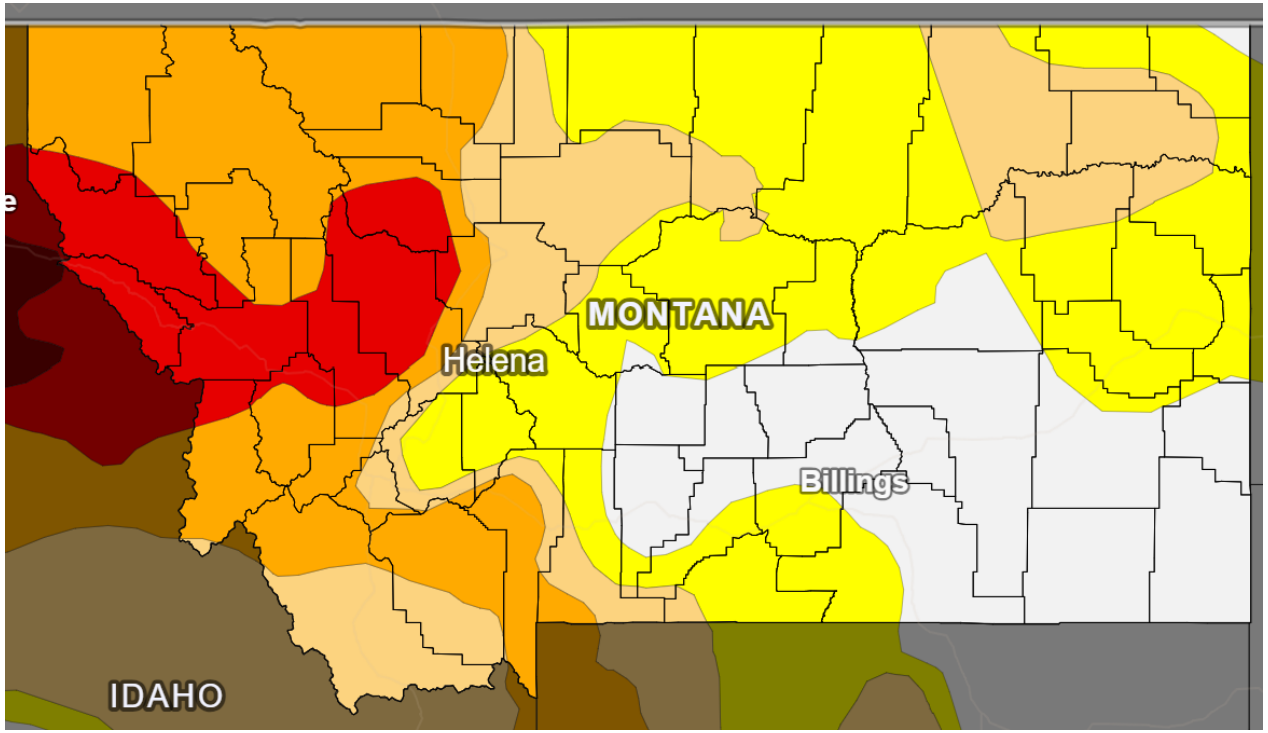
Water Challenges



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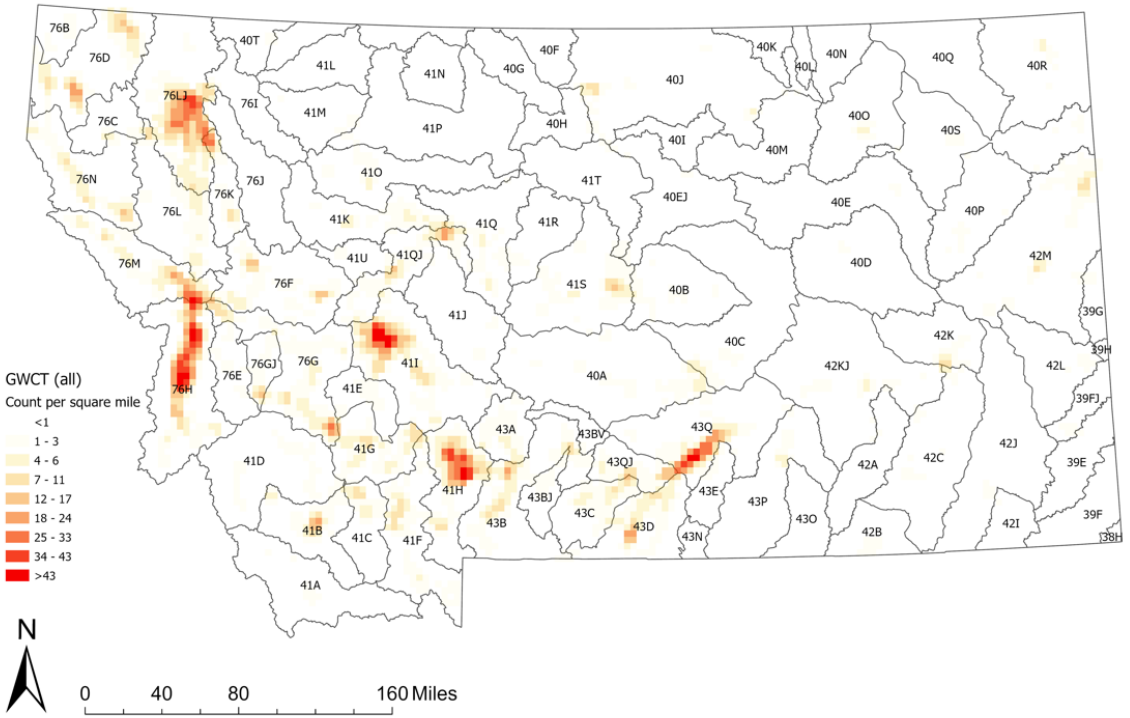
Demand



Protection

Utilization

Physical Availability

Legal Availability

Water Law

Montana Constitution
Article IX, Section 3

- (1) All existing rights to the use of any waters for any **useful or beneficial purpose** are hereby recognized and confirmed.

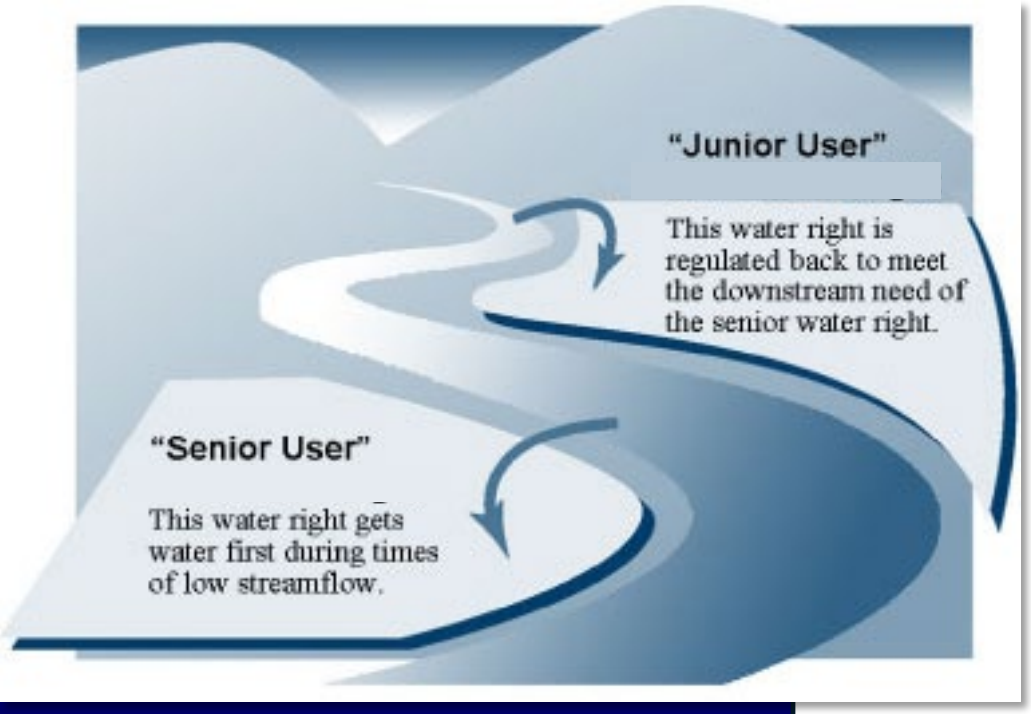
- (3) All … waters … are the **property of the state** for the use of its people and are subject to **appropriation** for beneficial uses as provided by law.

- (4) The **legislature shall provide for the administration, control, and regulation** of water rights and shall establish a system of centralized records, in addition to the present system of local records.

1973 MONTANA WATER USE ACT

- Effective July 1, 1973
- Establishes a process to adjudicate existing water rights
- Establishes the DNRC as the responsible agency for administration of the water use act, issuance of new permits and changes of use of water rights, and maintaining centralized records
- Provided a mechanics to reserve water for future consumptive and instream use

MT WATER LAW GUIDING PRINCIPLES



- Prior appropriation doctrine - "first it time, first in right" **(priority date)**
- The State owns all the water in Montana – the owners of water rights possess only *the right to use* some of that water (**property right)**
- Intent to apply water to **beneficial use**
- **Use it or lose it** (abandonment)
- GW and SW are treated as **connected**

Water Rights

WHAT IS A WATER RIGHT?

ELEMENTS OF WATER RIGHTS

- Source (surface or groundwater)
- Purpose/Beneficial Use
- Point of Diversion
- Place of Use
- Period of Use
- Period of Diversion
- Quantity (Flow Rate and Volume)
- Priority Date

TYPES OF WATER RIGHTS

1. Existing Water Rights (pre-July 1, 1973)
2. Water Reservations
3. Permit to Appropriate
4. Permit Exceptions

ADJUDICATION AND NEW APPROPRIATION

July 1, 1973

Adjudication

- The Montana Water Court adjudicates existing rights by basin and issues final decrees, recognizing and confirming water rights developed ***prior to July 1, 1973***.
- **DNRC provides technical assistance to the Water Court.**
- Process has been far more expensive and time consuming than contemplated.

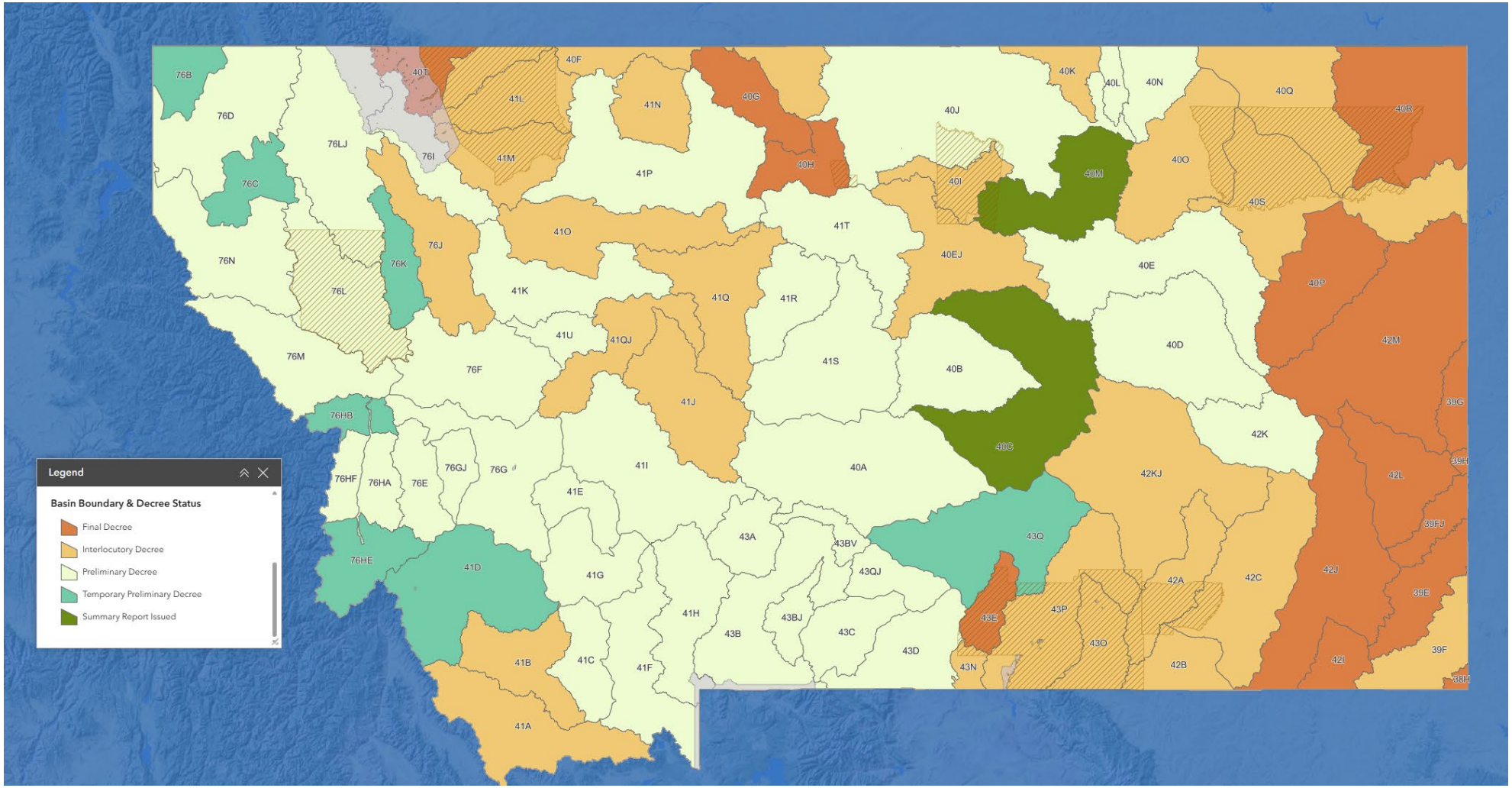
New Appropriations

- New water rights, ***since July 1, 1973***, and changes to all existing water rights are administered by the DNRC through a permitting process.

1. Existing Water Rights (Pre-July 1, 1973)

- **Adjudication:** Recognition and Confirmation of Existing Uses
- **Water Court:**
  - Expedite adjudication through centralized statewide litigation
  - Addresses concerns regarding incomplete District Court decrees
- DNRC provides technical assistance to Water Court through examination of Statements of Claim

Adjudication Status



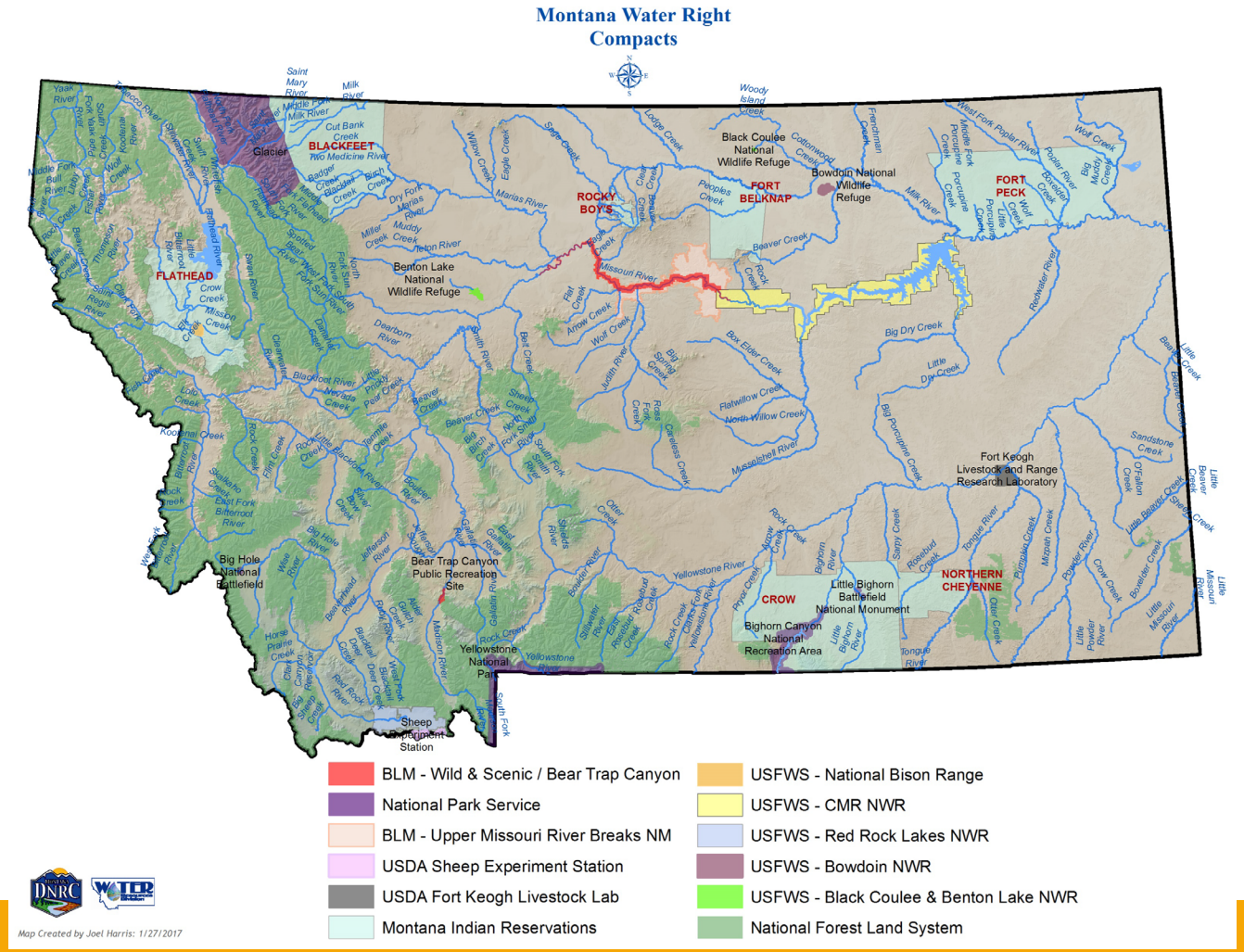
2. Reserved Water Rights (State and Federal)

Federal Reserved Rights:

- 7 Tribal Compacts
- 11 Federal Compacts

State Reservations of Water:

- Municipal
- Conservation districts for agriculture use
- Instream & water quality

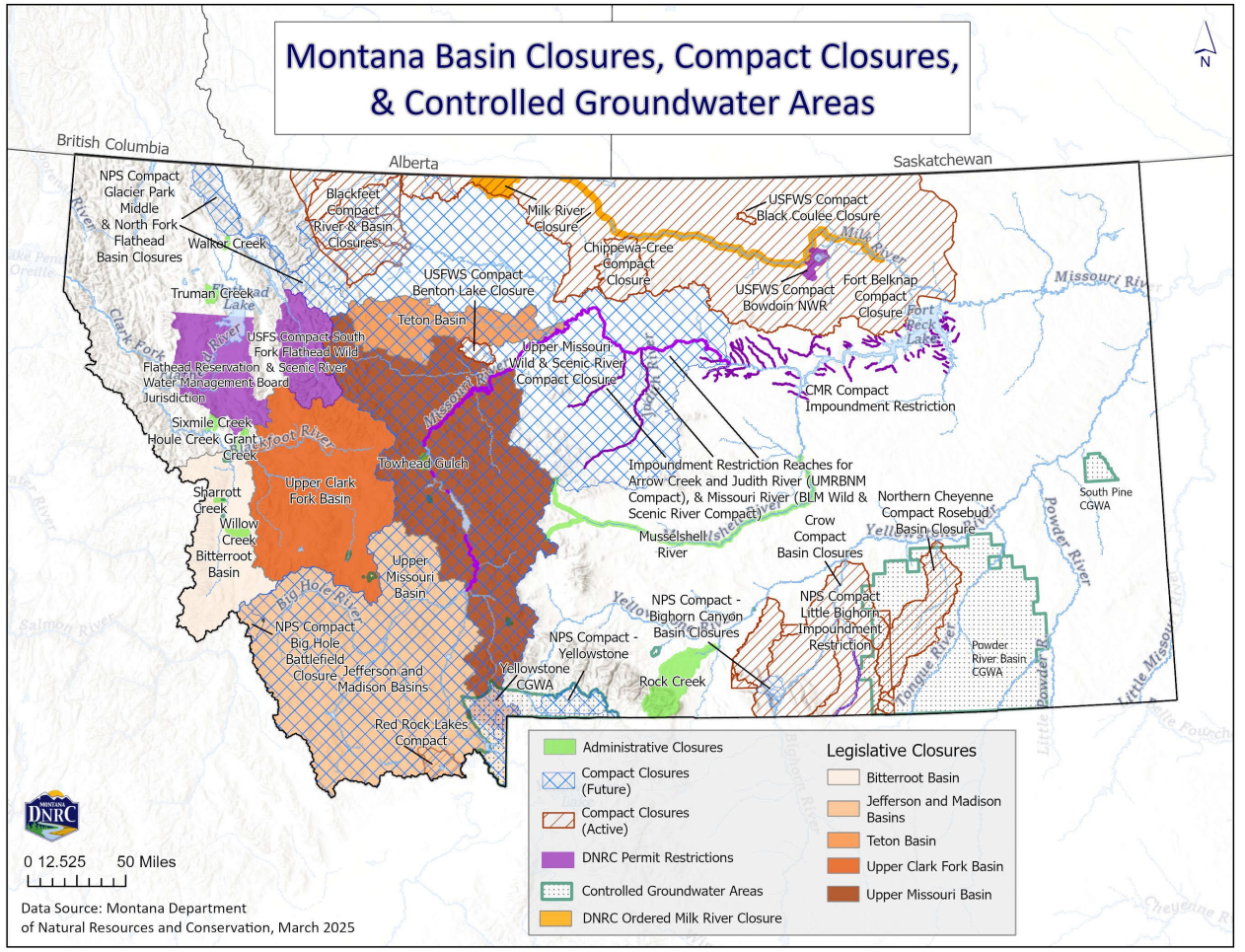


New Appropriations (post July 1, 1973)

- All new beneficial uses require a water right
  - Permit process
  - Exceptions to the permit process
- All changes require a change authorization
  - Change process
  - Exceptions to the change process

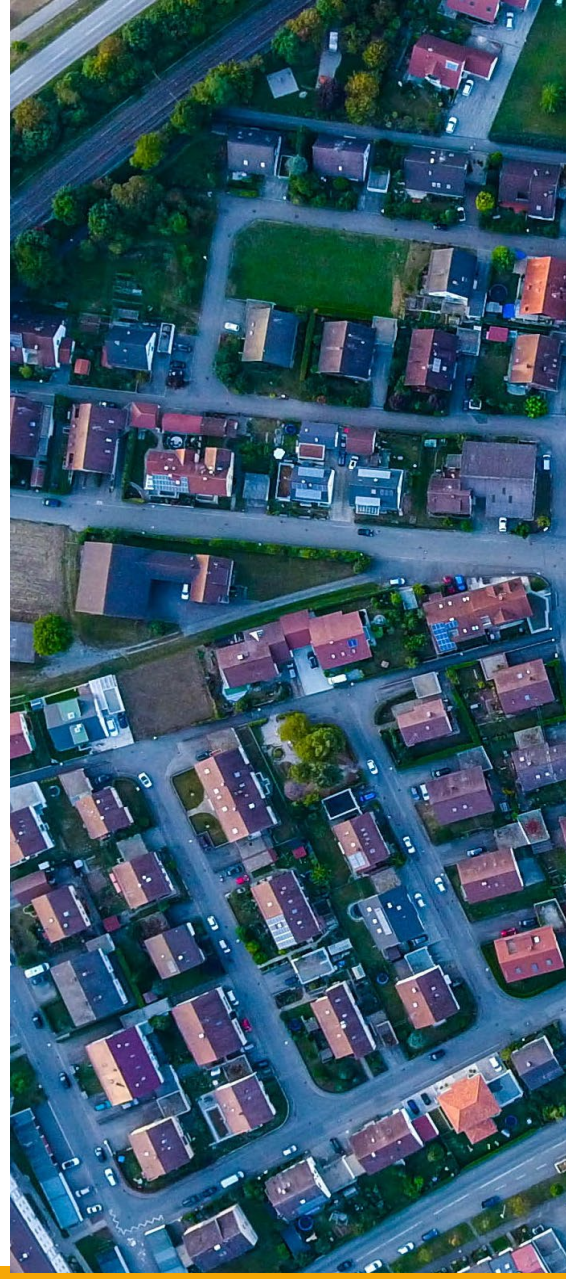
Closed Basin vs Overappropriated Basin

- Closed basins have explicit restrictions on new uses, including mitigation requirement
  - Additional statutory requirements for groundwater use in closed basins (85-2-360, 361, 364)
    - Jefferson, Madison, Upper Clark Fork
- Over appropriated basins don't have explicit restrictions, still require mitigation
  - Bitterroot River, Lower Clark Fork



3. Water Right Permit (§85-2-311)

- Applicants must prove criteria:
  - Water is physically available
  - Water is legally available
  - Prior appropriators will not be adversely affected
  - Adequacy of diversion
  - Beneficial Use
  - Possessory Interest in place of use
- Public comment and objections



Change Applications (85-2-402)

- Change point of diversion, place of use, purpose of use, place of storage
- Applicants prove criteria:
  - No adverse affect to other water users
    - DNRC must ensure no expansion of water use will occur from the change
  - Adequacy of diversion
  - Beneficial use
  - Possessory interest in place of use
- Public comment and objections

Permit Exceptions (§85-2-306)

- Fire Training/Protection by local govt. fire agency
- Closed loop geothermal
- Small groundwater uses **(aka "Exempt wells")**
  - Flow rate 35 GPM or less
  - Annual volume 10 AF or less
  - If **combined appropriation** may not exceed 10 AF
  - Commonly used for new development

Permit vs Exempt Well

www.epa.gov

Water Right Permit (85-2-311)

- Criteria analysis conducted
  - Physical water availability
  - Legal water availability
  - No adverse effect analysis
  - Beneficial use
  - Possessory interest
- Public comment and objection
- DNRC can condition as necessary to satisfy criteria/protect seniors
- Water Right upon approval

Exempt Wells (85-2-306)

- Intended for *de minimis* uses
- Up to 10AF/year 35 gal/min
- No criteria analysis
- No public comment and objection
- No evaluation of cumulative impacts
- DNRC can not condition to protect senior water right holders
- Water right filed when put to beneficial use

Exempt wells & combined appropriation

- The appropriation outside a stream depletion zone, is 35 gallons a minute or less, and does not exceed 10 acre-feet a year, **except that a combined appropriation** from the same source by two or more wells or developed springs exceeding 10 acre-feet, regardless of the flow rate, requires a permit;(85-2-306)
- “Combined appropriation”- appropriation from the same source aquifer by two or more groundwater developments, the purpose of which, **in the department's judgment, could have been accomplished by a single appropriation**.
  - Need not be physically connected nor have a common distribution system
  - Can be separate developed springs or wells to separate parts
  - Wells and springs need not be developed simultaneously.
  - **The amount of water appropriated from the entire project or development from these groundwater developments in the same source aquifer is the “combined appropriation.”**

HISTORY OF DEFINING EXEMPT WELL USE:

A permit is not required for ….

1973 — …Ground water uses for domestic, agricultural, or livestock purposes less than **100 gpm**

1974 — …Ground water uses ~~for domestic, agricultural, or livestock purposes~~ less than **100 gpm.**

1987 — (Outside Controlled Ground Water Area) …Ground water uses less than **100 gpm,** except that a combined appropriation from the same source from two or more wells or developed springs exceeding this limitation requires a permit.

1987 — "Combined appropriation" defined in rule: **same source aquifer**…could have been accomplished by a **single appropriation**… need not be **physically connected or developed simultaneously.**

1991 — (Outside Controlled Groundwater Areas) … ground water uses less than ~~100 gpm~~ **35 gpm, not to exceed 10AF/yr per year,** except that a combined appropriation from the same source from two or more wells or developed springs exceeding this limitation requires a permit.

1993 — "Combined appropriation" defined in rule: **same source aquifer**…~~could have been accomplished by a single appropriation… need not be physically connected or developed simultaneously~~ **that are physically manifold into the same system.**

2006 — *Trout Unlimited v. DNRC (2006):* DNRC consideration of how groundwater withdrawals impact surface water (direct induced infiltration **and pre-stream capture).**

2013 — *Multiple exempt well bills attempted in the Legislature*

2014 — "Combined appropriation" defined in rule: **same source aquifer… ~~that are physically manifold into the same system~~** could have been accomplished by a **single appropriation**… need not be **physically connected or developed simultaneously.** (reversion to language from 1987)

2014 — *Clark Fork Coalition v Tubbs (2014)*: 1993 combined appropriation rule definition inconsistent with statute; **reinstated the 1987 rule** (MT Supreme Court affirmed 2016)

2014 — ***DNRC guidance on combined appropriation issued 12/9/2014 to provide general guidance in applying Clark Fork Coalition et al. vs Tubbs et al.***

2015 — *HB168 (2015) grandfathered any project, development, or subdivision that relied on the DNRC's 1993 definition.*

2015 — ***Guidance updated 2/16/2016 to address implementation of HB 168 (2015 legislature)***

2015 — ***Guidance updated 3/23/2022 to clarify that well spacing of 1320' only applies to a parcel ≥20 acres***

2024 — *Upper Missouri Waterkeeper v DNRC, (2024):* District Court criticized DNRC for "blatantly ignoring" the Clark Fork holding. "While each exempt well might appropriate 'only a de minimis quantity of water,' they are starting to add up." Phased development ended.

2024 — ***Combined appropriation guidance rescinded 5/3/2024 in light of the Upper Missouri Waterkeepers vs DNRC et al. decision. In dicta, the judge identified that the guidance ignores the plain language of the combined appropriation definition***

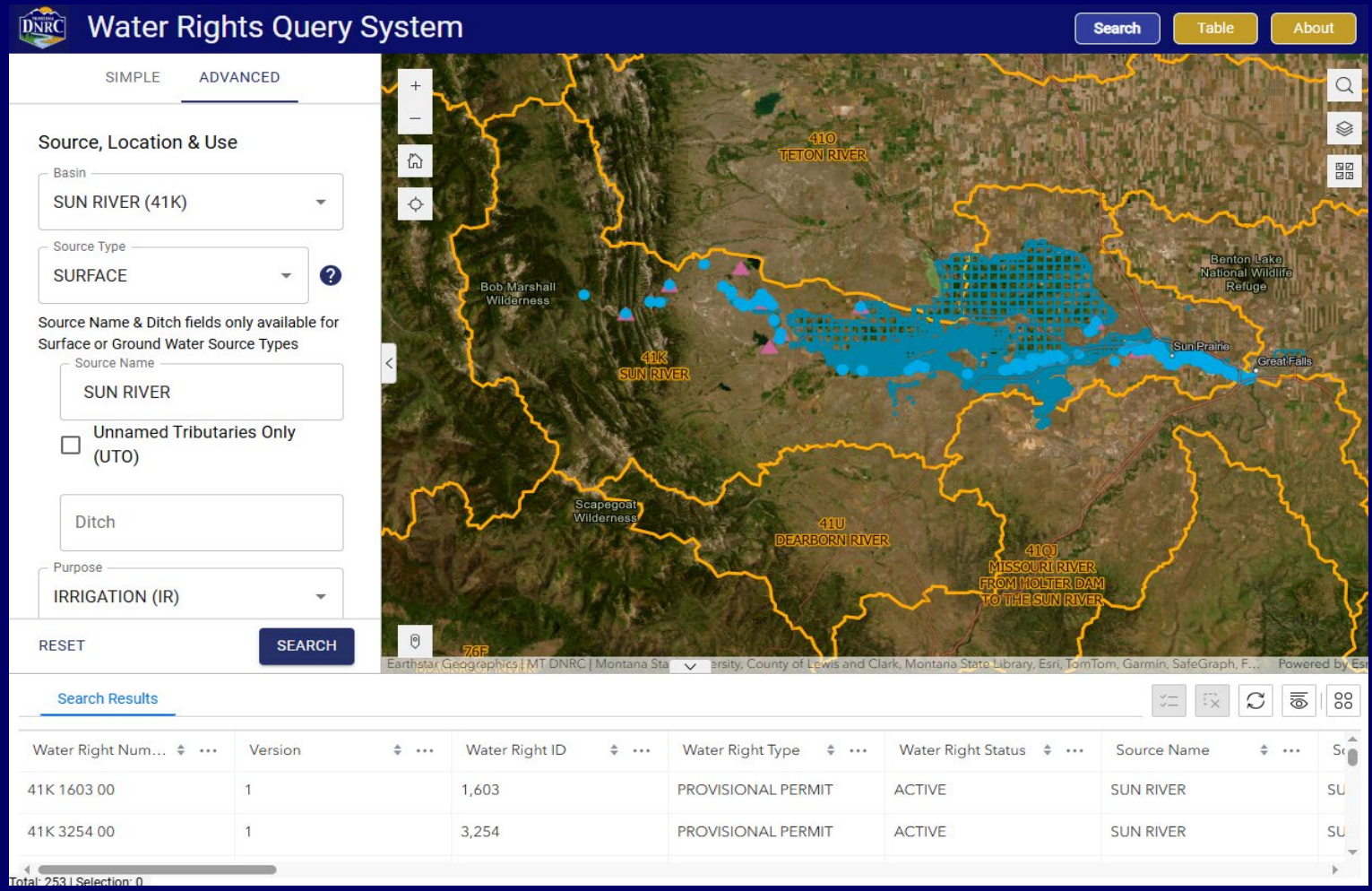
2024 — **DNRC is now evaluating combined appropriation by following the definition in rule and not relying on guidance to make determinations of combined appropriation**

- STATUTE (MCA)
- RULE (ARM)
- CASE LAW (COURT RULINGS)
- DNRC GUIDANCE ON COMBINED APPROPRIATION

Water Information

Water Rights Query System

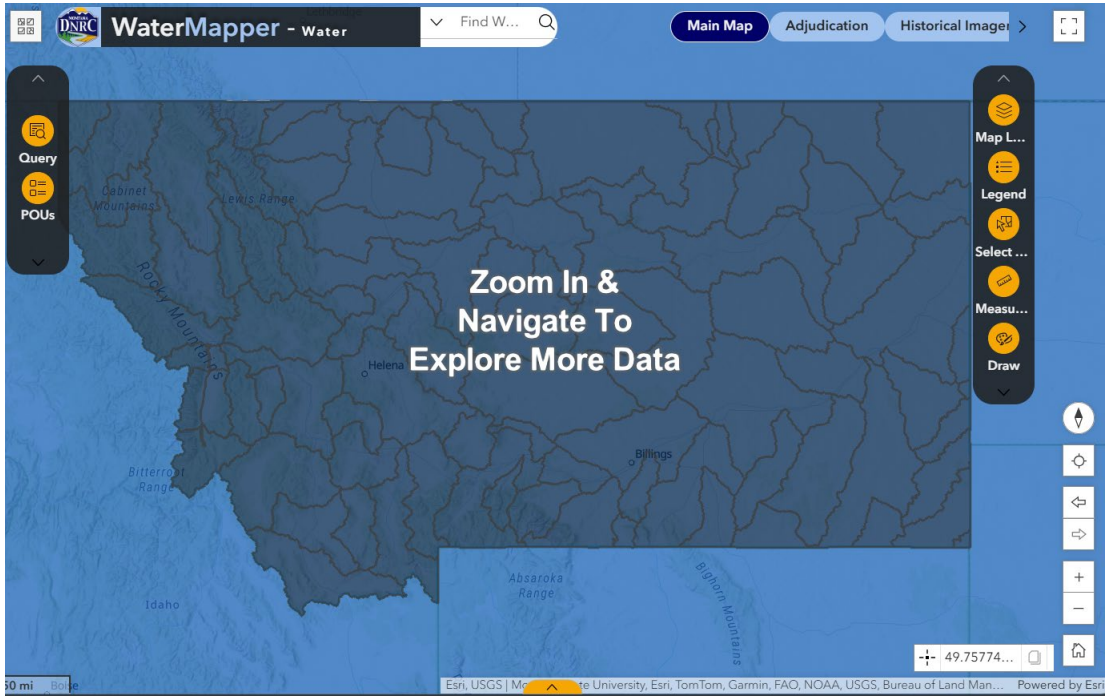
- Designed for simple searches to access water right info & historic scanned documents.
- Reference data, search parameters, primary app components.
- Table Page – access to related tables.
- About Page – FAQs, User Guide, Contact Information, Request Status
- Works on mobile devices!

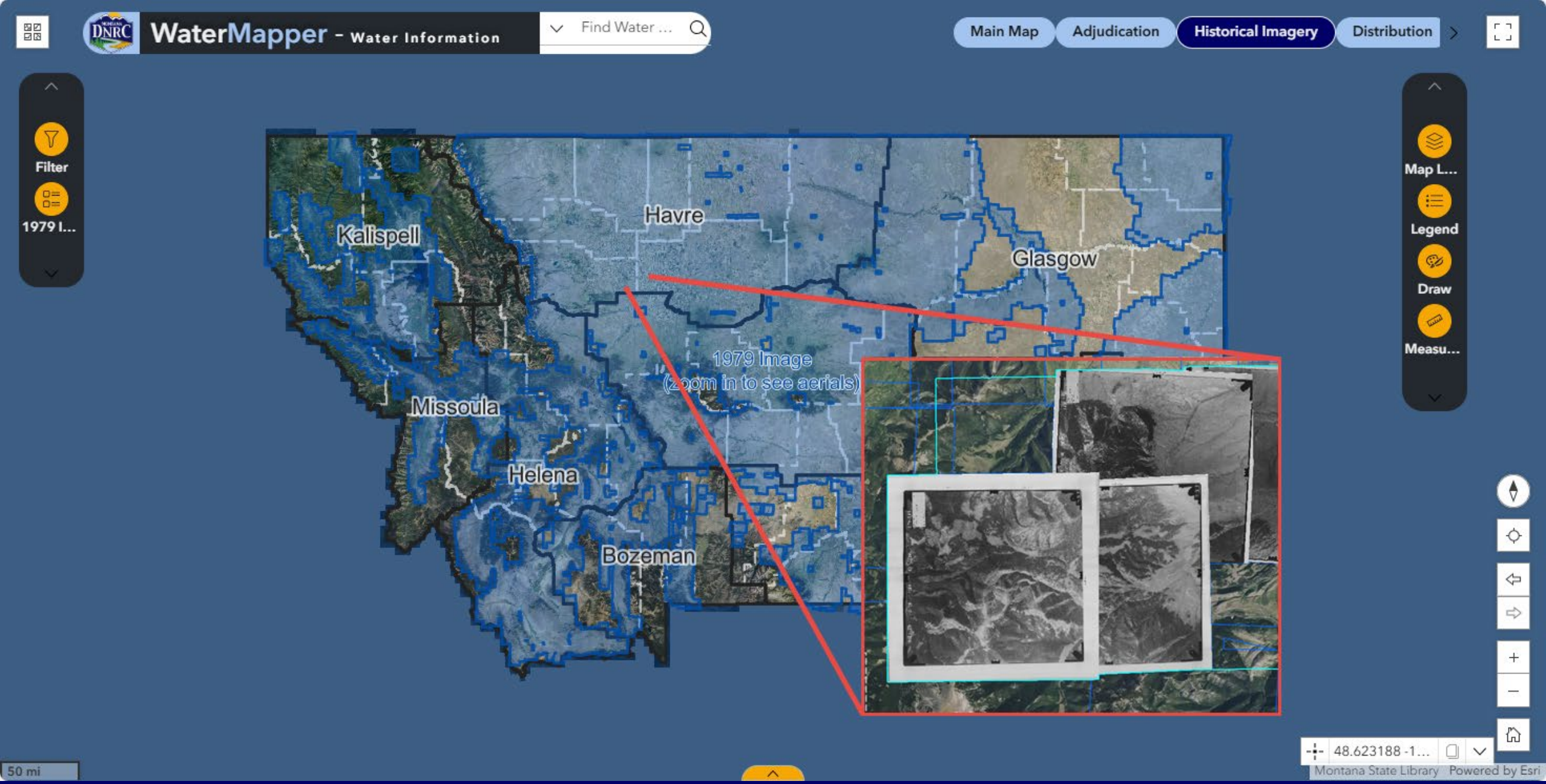


WaterMapper

Experience Builder Application

- Hub for Montana water resource information
- Viewing, querying, and accessing water resource data
- Created to serve DNRC Water Resources Division's workflows
- Public resource: https://arcg.is/0T54ya




WaterMapper – Water Information
Find Water ...
Main Map
Adjudication
Historical Imagery
Distribution
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Kalispell
Glasgow
1979 Image
(zoom in to see aerials)
Missoula
Helena
Bozeman
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Montana State Library
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Montana Distribution Areas

Distribution Areas List

Option0

E001 Musselshell River
In Basins 40A and 40C
Status: Active
Page

E002 West Gallatin River
In Basin 41H
Status: Active
Page

E003 Hyalite Creek
In Basin 41H
Status: Inactive
Page

E004 Mill Creek
In Basin 43B
Status: Active
Page

E005 Big Timber Creek
In Basin 43B
Status: Active
Page

E006 Sweet Grass Creek
In Basin 43BV
Status: Active
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E007 Shields River
In Basin 43A
Status: Active
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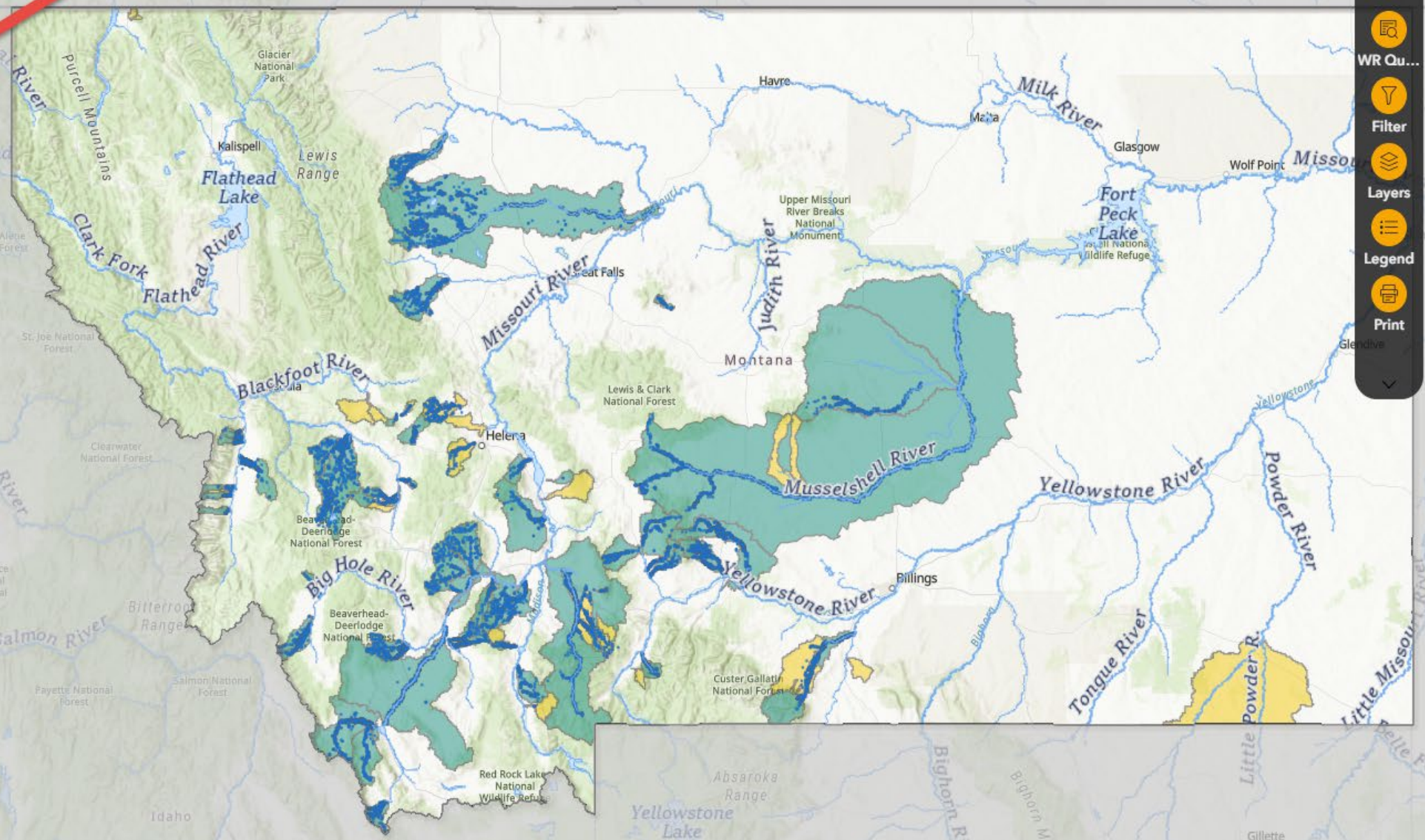

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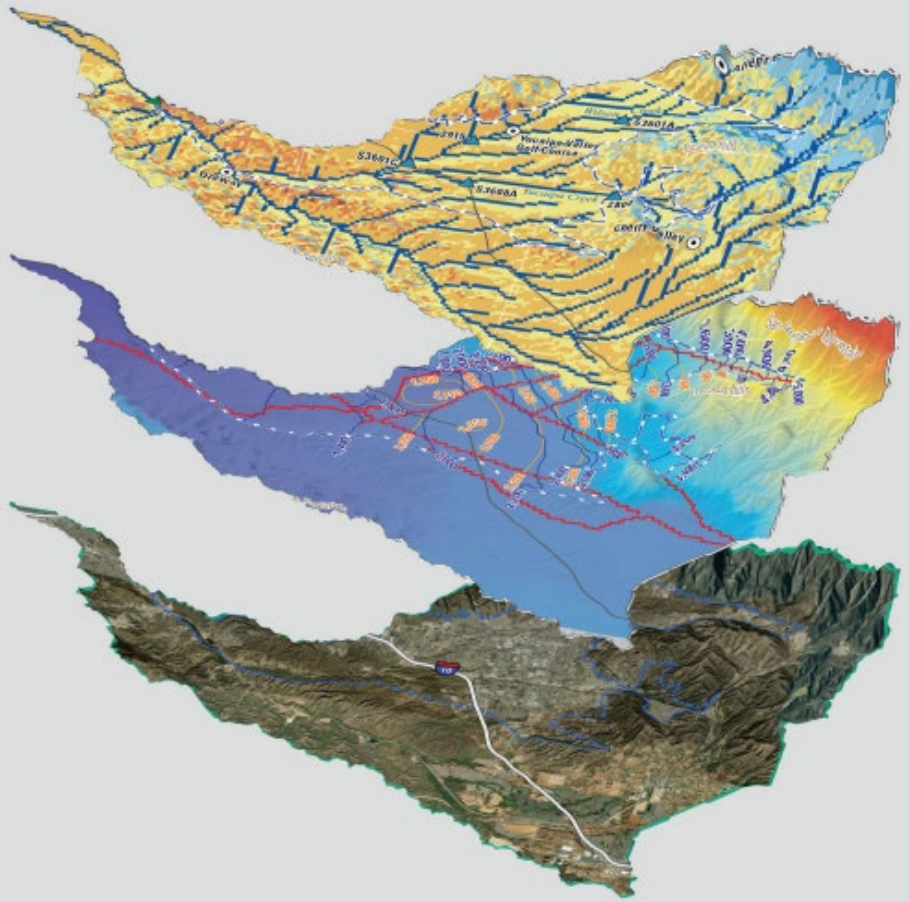
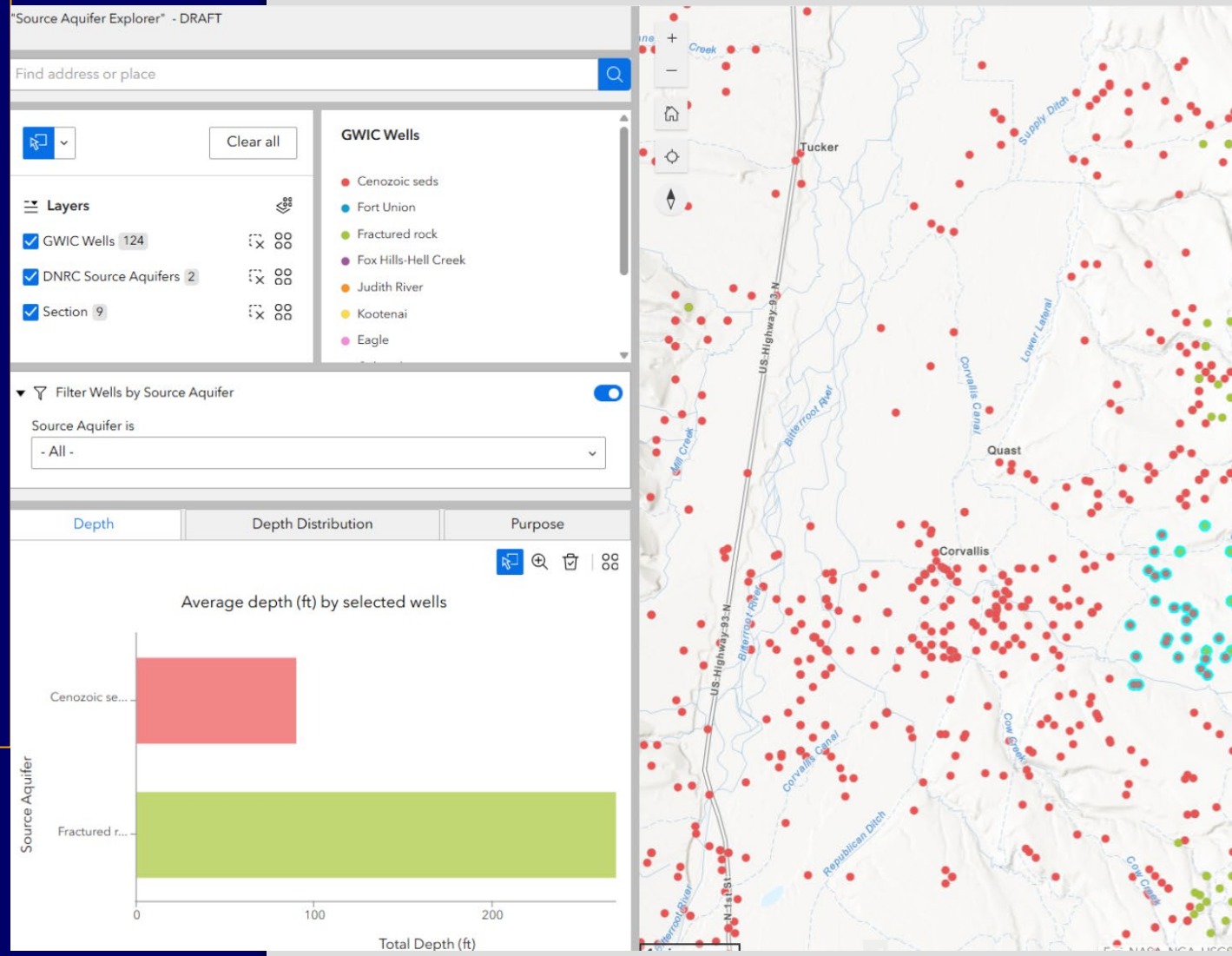
THE MONTANA INTEGRATED HYDROLOGIC MODELING SYSTEM

- Water administration is largely hindered by lack of information, specifically about water supply and GW/SW interactions
- Creates a comprehensive and consistent hydrologic budget for the entire state
- Integrates multiple models, datasets, and studies (stream gages, DNRC, NOAA, USGS, MBMG, and NASA), making them operational for administration
- Implementation: more accurate and consistent physical and legal availability calculations
- Implementation: mitigation- zone of impact, effectiveness (basin studies)



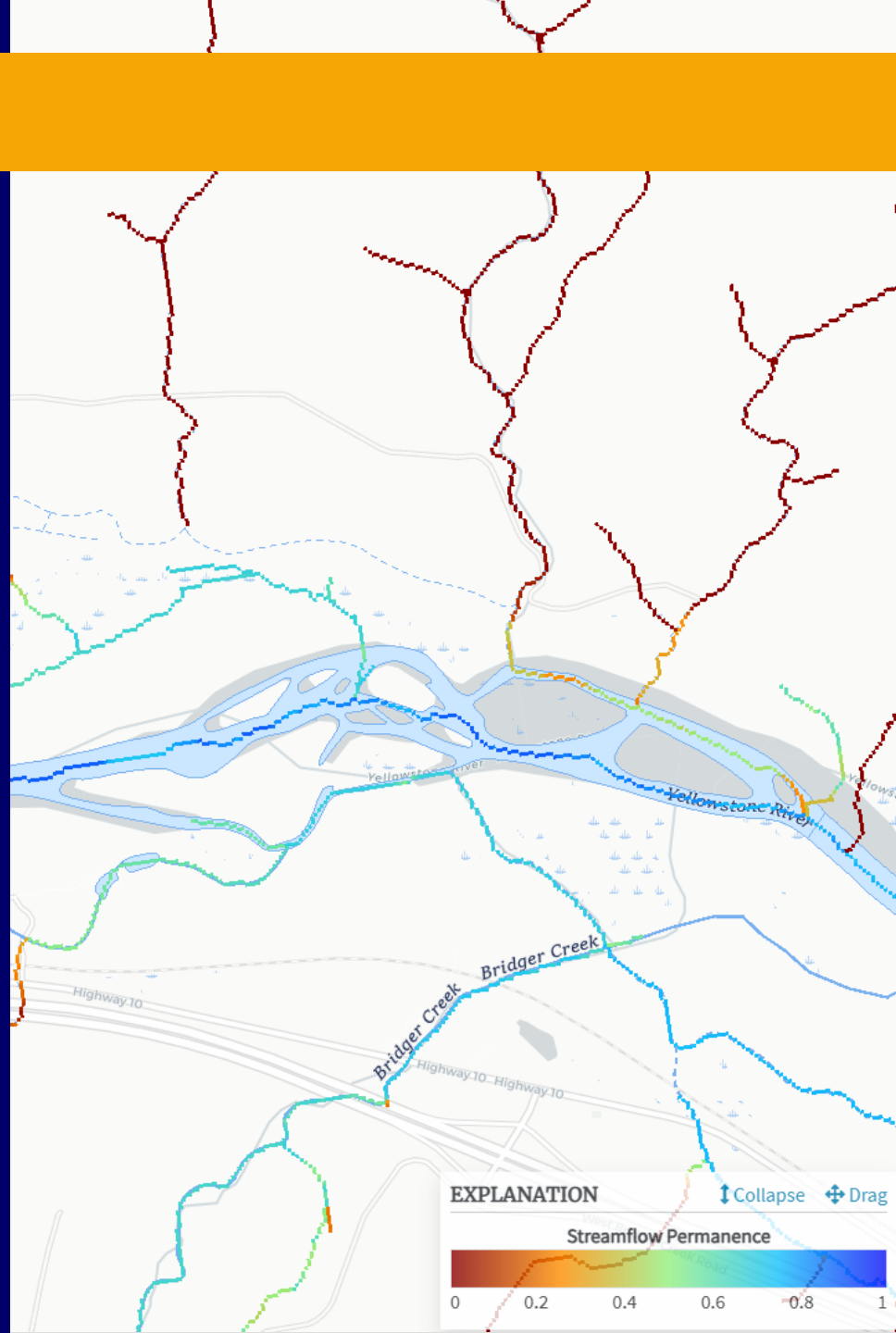
Source aquifer tool

- Multiple groundwater water rights processes require identifying source aquifer of a well
- Utilizing machine learning, statistical methods, and GWIC well log database to determine most likely source aquifer for every location in Montana
- Implementation: DNRC will have an efficient way to determine source aquifer anywhere in the state



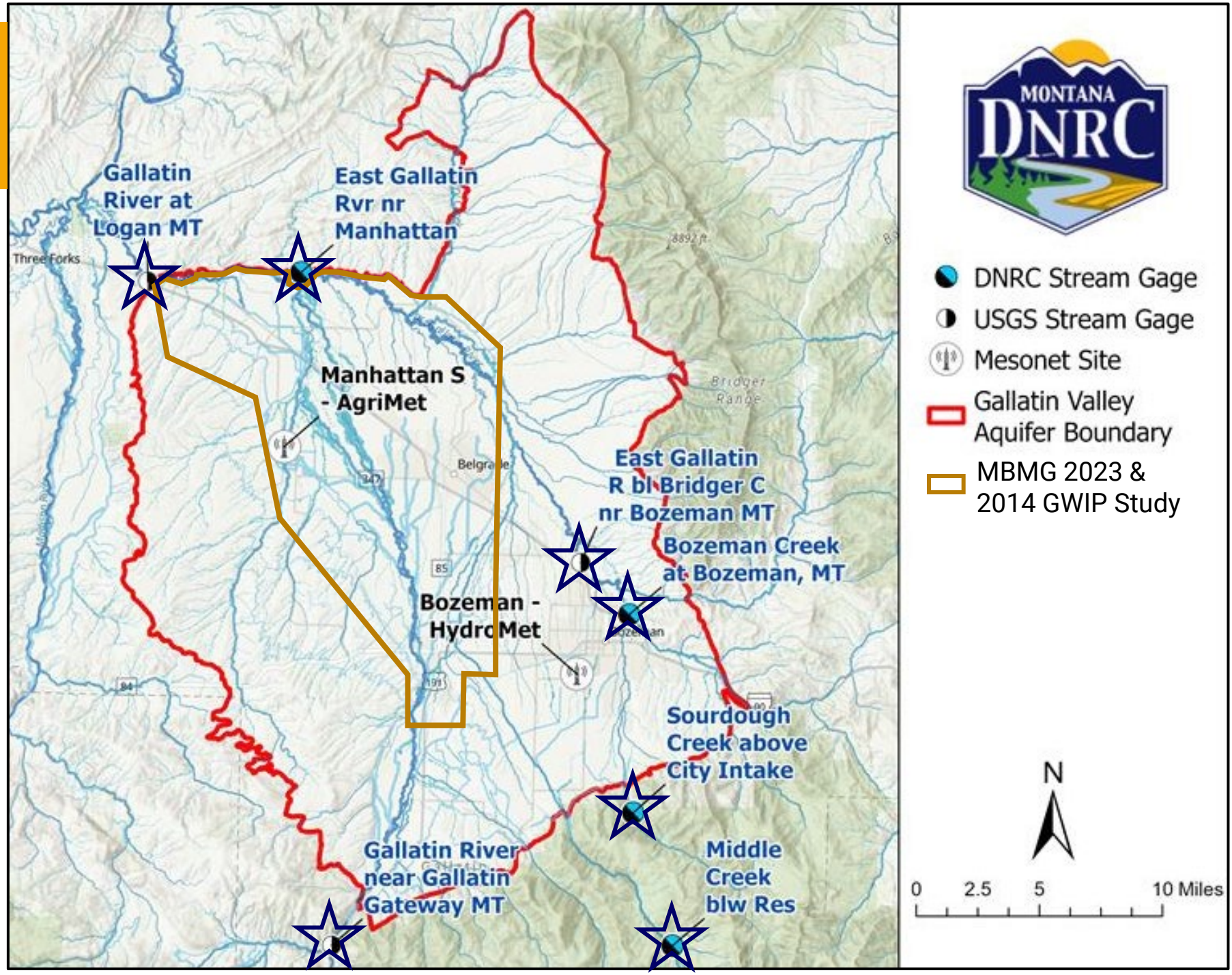
HYDROLOGIC Connection Mapper

- GW/SW connection is difficult to visualize and leads to many questions in the Application and Change process
- Utilizing machine learning to pull multiple datasets together (GWIC well logs, well monitoring databases, topographic maps, USGS stream permanence, etc..) to identify probable location of GW/SW connection and potentially depleted sources
- Implementation: Public will have a starting point to assess potentially depleted SW sources



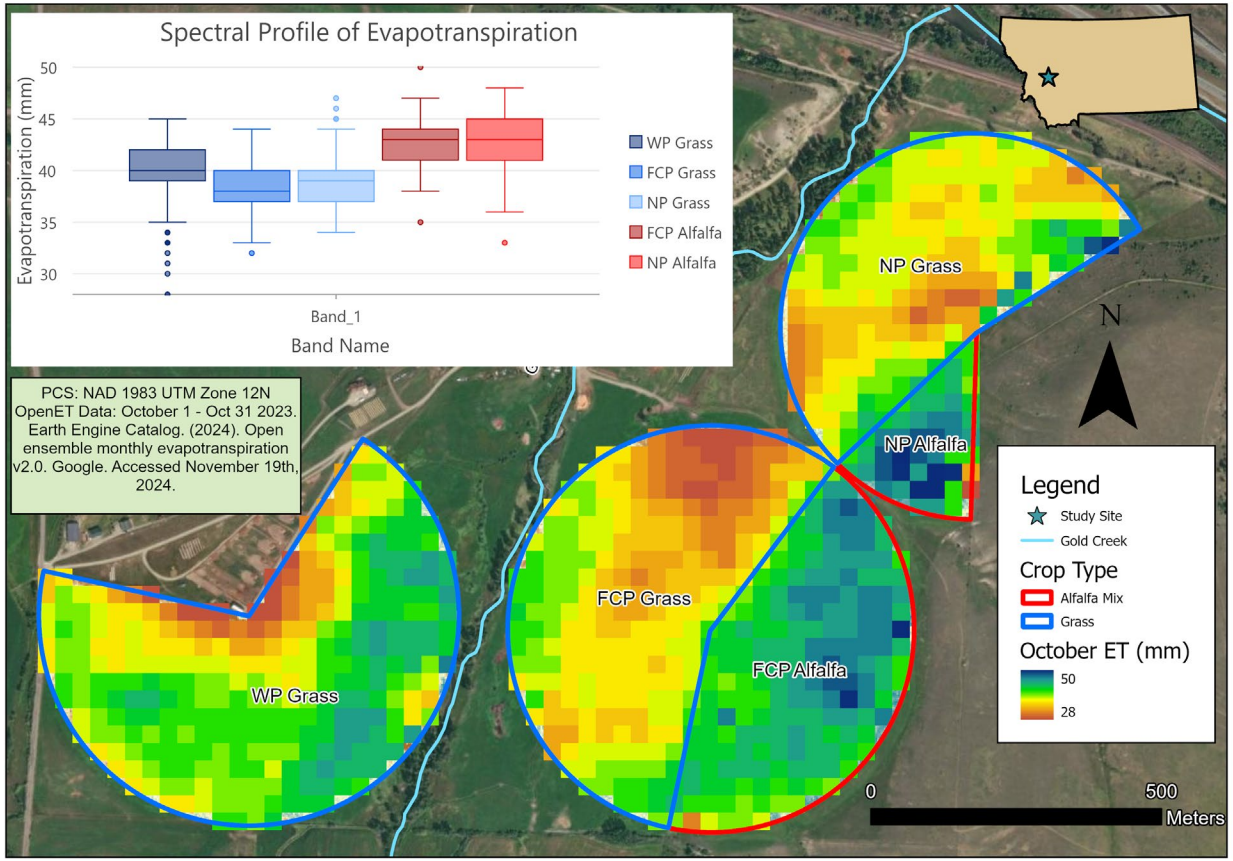
MIHMS Basin Study

- Pulls all existing data sources together
- Fill in the gaps
- Detailed **water budget** that accounts for every drop of water in the basin, both surface and groundwater
- **Implementation:** water right permitting information, mitigation opportunities, water use and availability in the basin



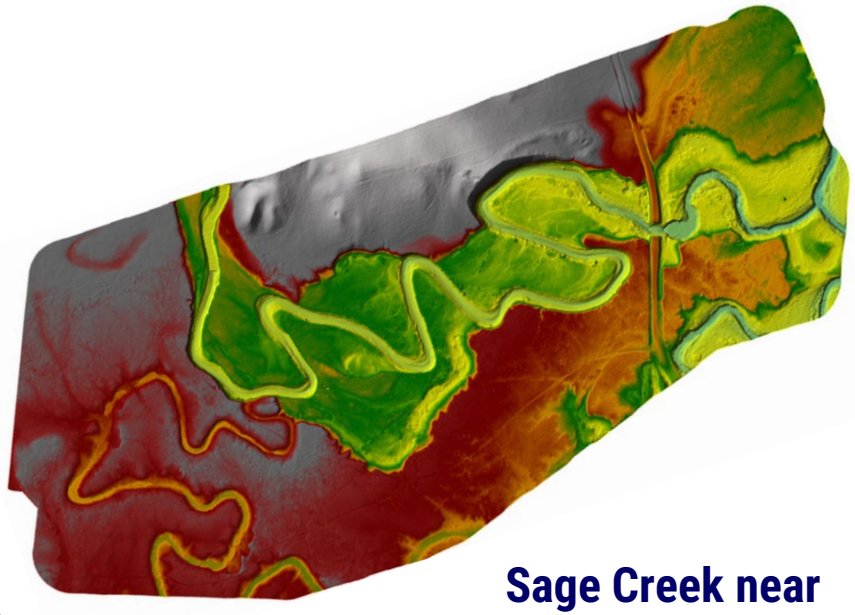
CALCULATION OF IRRIGATION CONSUMPTIVE USE

- OpenET remote sensing data- dramatically increases the accuracy of water use estimates
- Ability to calculate current and historic consumptive use, irrigation recharge, and return flow values
- Implementation: future use in the permit and change processes



LEADING THE SCIENCE OF DRONE-BASED LIDAR USE FOR EXTREME FLOOD-STAGE STREAM FLOW MEASUREMENT

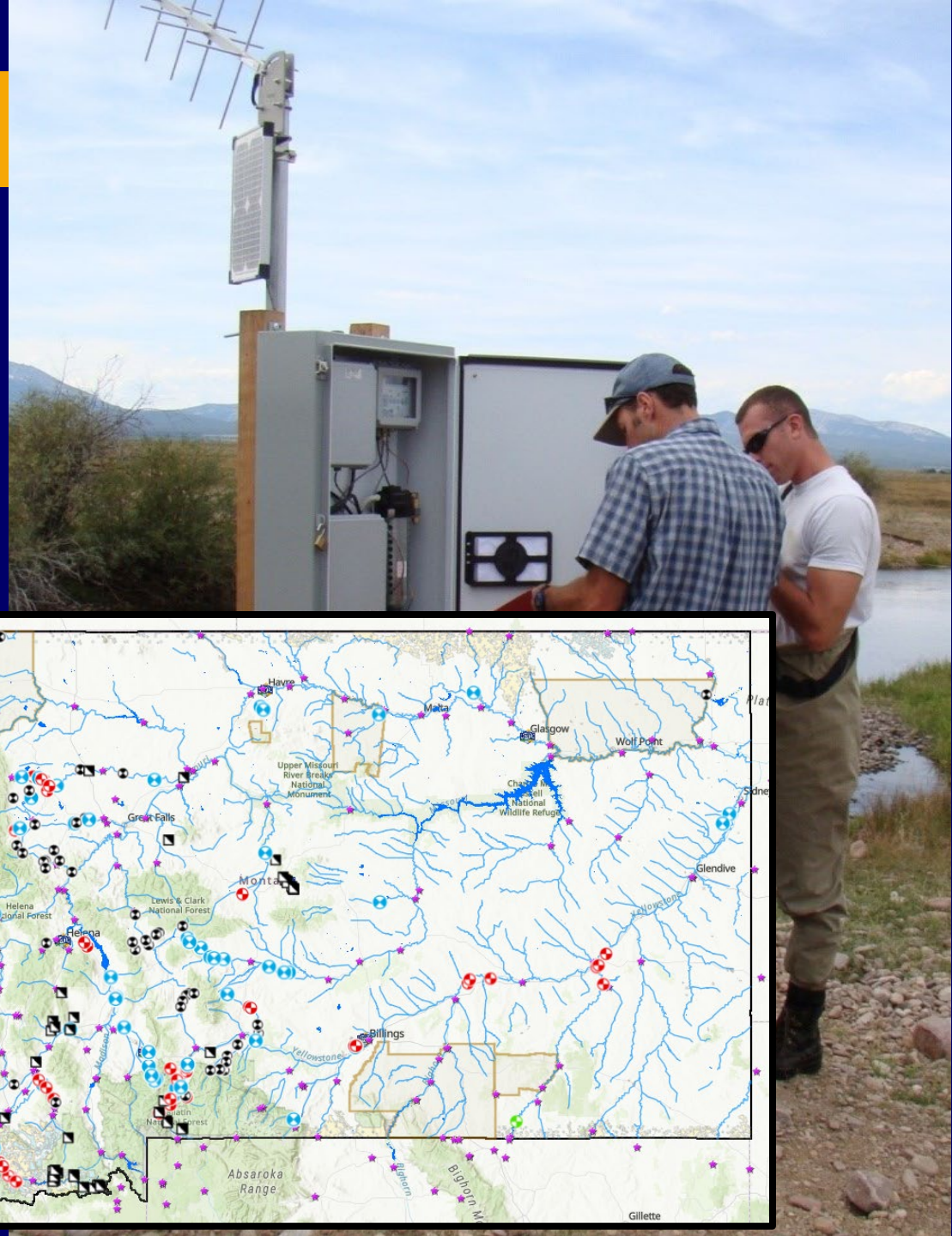
- We are using drone based-lidar to create 3D hydraulic models of DNRC Stream Gage sites.
- Using the 3D models, we have developed a novel peer-reviewed method to calculate high stream-flow
- Implementation: develop flood warning systems, and to help calibrate statewide water availability models used for water rights permitting

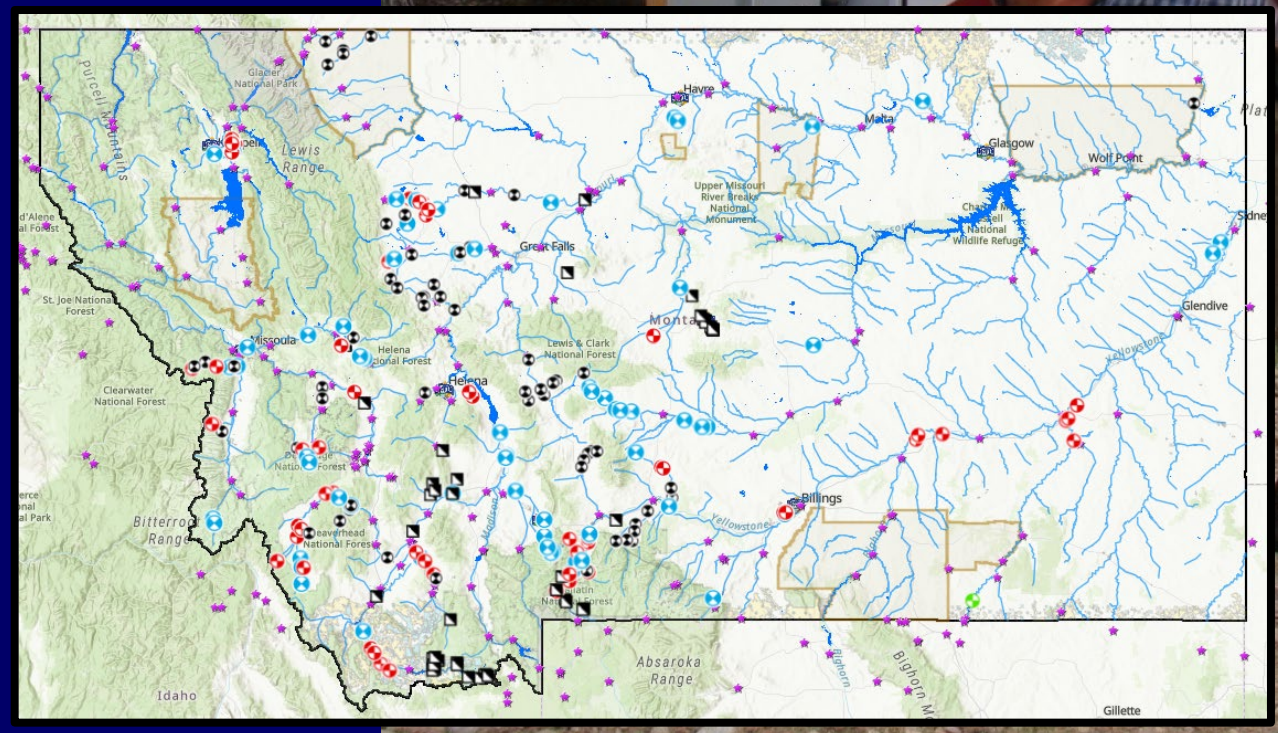


Sage Creek near Box Elder, MT

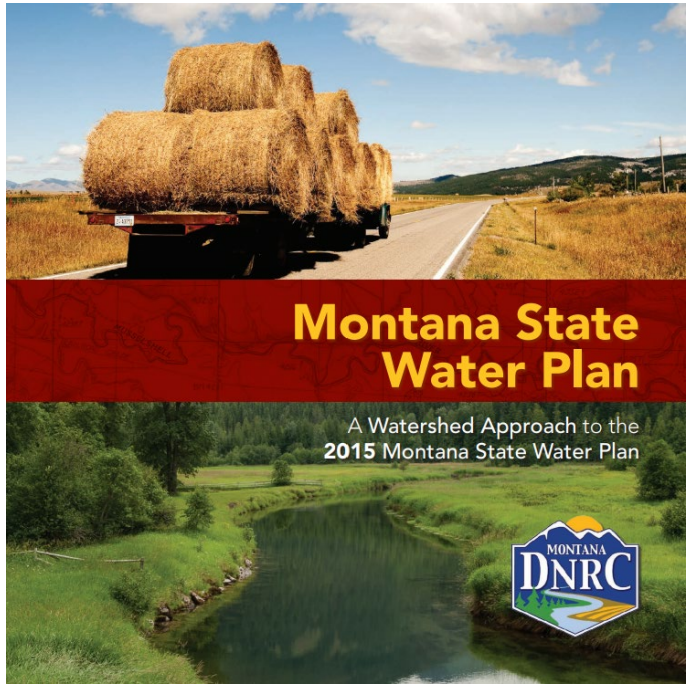
MT STREAM GAGE NETWORK

- DNRC maintains a public platform for real-time stream gages in MT (StAGE)
- USGS 217 real-time stream gages
- DNRC 76 real-time stream gages (100 in 2026)
- http://gis.dnrc.mt.gov/apps/stage





Collaboration Works.



Collaborating to Create Change that Works.

Questions ?

- Anna Pakenham Stevenson; Water Administrator; anna.pakenhamstevenson@mt.gov