HB 935 Update
Fox Hills-Hell Creek Aquifer

Water Policy Interim Committee
May 11, 2026

Sara Edinberg, Hydrogeologist
MBMG Ground Water Assessment Program

Montana Bureau of Mines and Geology

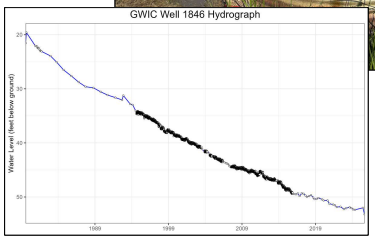
A department of Montana Tech

- Established in 1919 to provide reliable and unbiased earth science information
- Non-regulatory, applied research
  - Geologic Mapping
  - Geohazards/Earthquake studies
  - Economic Geology
  - Environmental Assessment
  - Data Preservation
  - Groundwater
- **All data we collect is available to the public**

http://www.mbmg.mtech.edu/

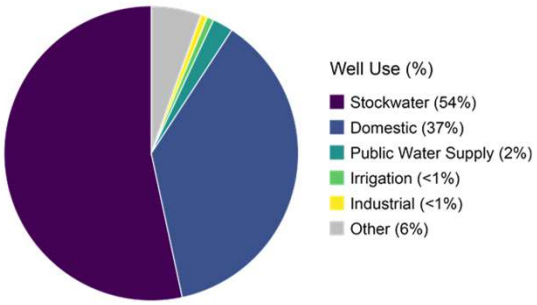
Fox Hills-Hell Creek Aquifer Study (House Bill 935): How did we get here?

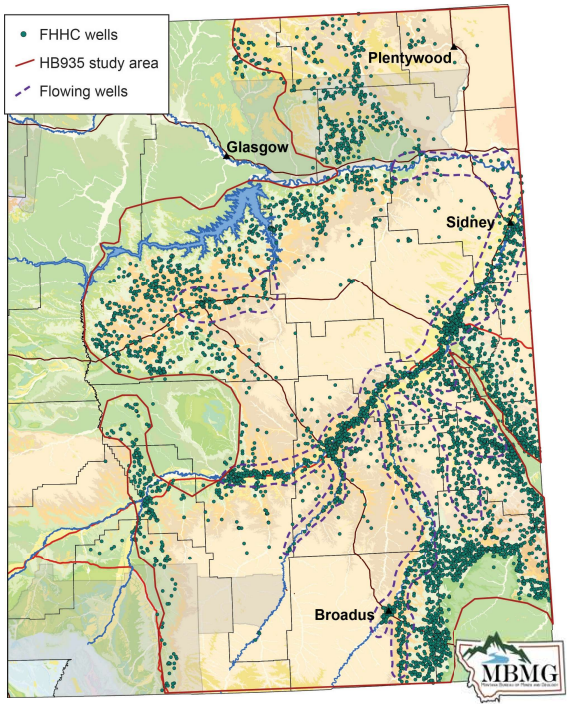
- Declining water levels have been observed in some parts of the FHHC since the 1960s
- Problematic for flowing wells that lack infrastructure for installing a pump
- Landowner concerns prompted HB935, which commissioned a study of the FHHC aquifer by MBMG



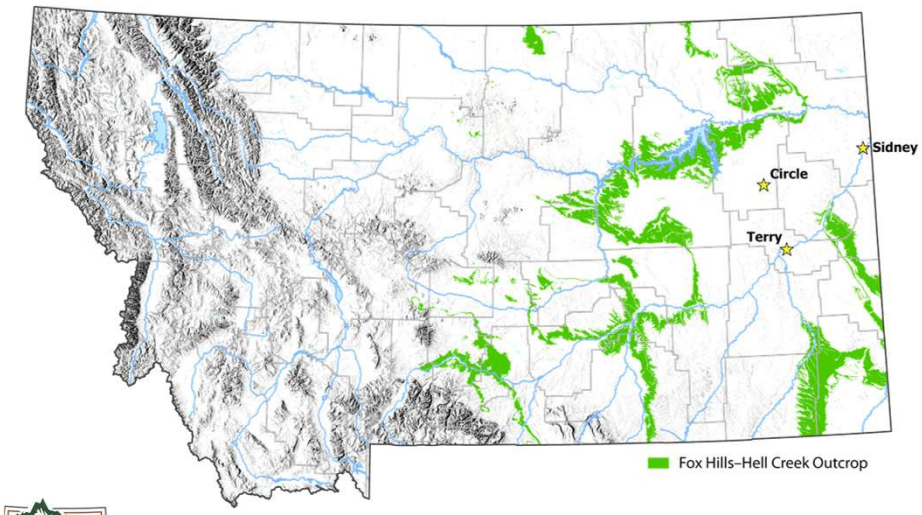
Fox Hills-Hell Creek Well Distribution

- Ground Water Information Center database indicates ~6,500 wells are completed in the FHHC aquifer.
- Most wells (91%) are used for domestic or livestock – low flow.





Fox Hills-Hell Creek: HB935



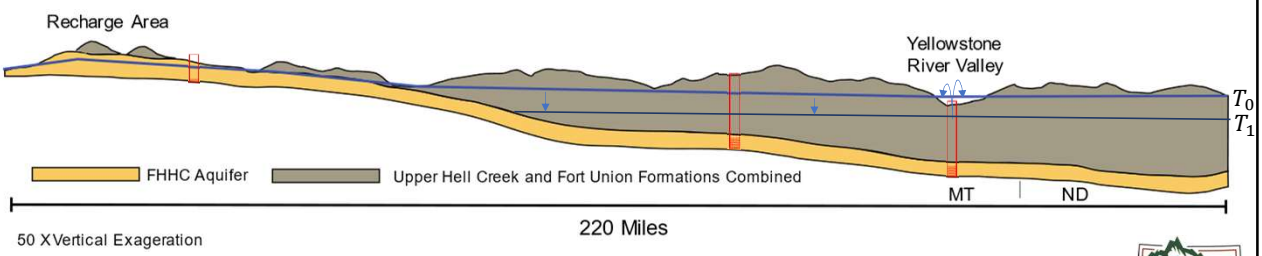
The best areas for recharge are where the FHHC is exposed at the surface – but recharge rates are overall slow

Fox Hills-Hell Creek Groundwater Declines

Groundwater declines occur when…

Water Removed From Aquifer > **Water Recharged to Aquifer**

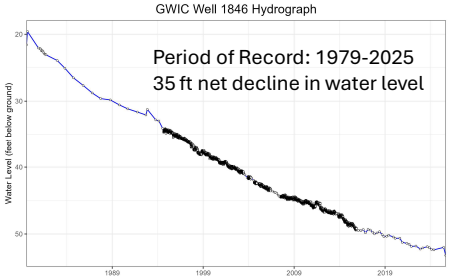
Previous Ground Water Characterization Program study showed FHHC groundwater age may be 10,000+ years old



Chandler & Reiten, 2020

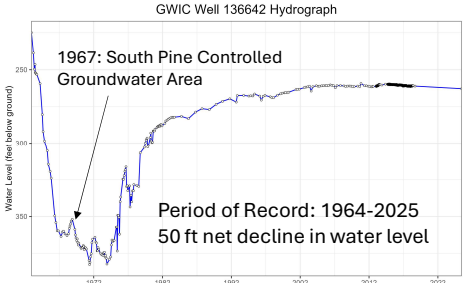
FHHC Water Level Declines

GWIC Well 1846 Hydrograph



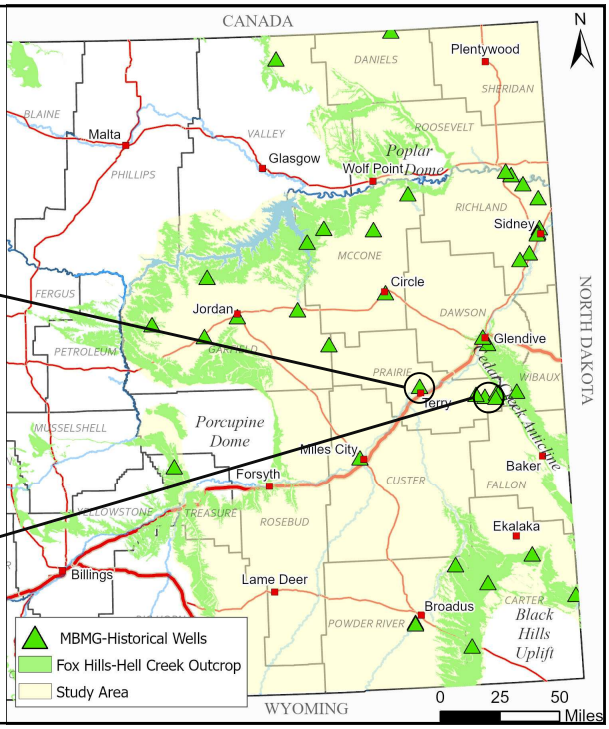
Period of Record: 1979-2025
35 ft net decline in water level

GWIC Well 136642 Hydrograph



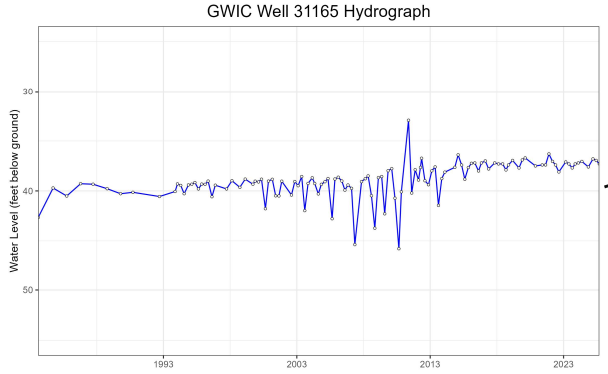
1967: South Pine Controlled Groundwater Area

Period of Record: 1964-2025
50 ft net decline in water level

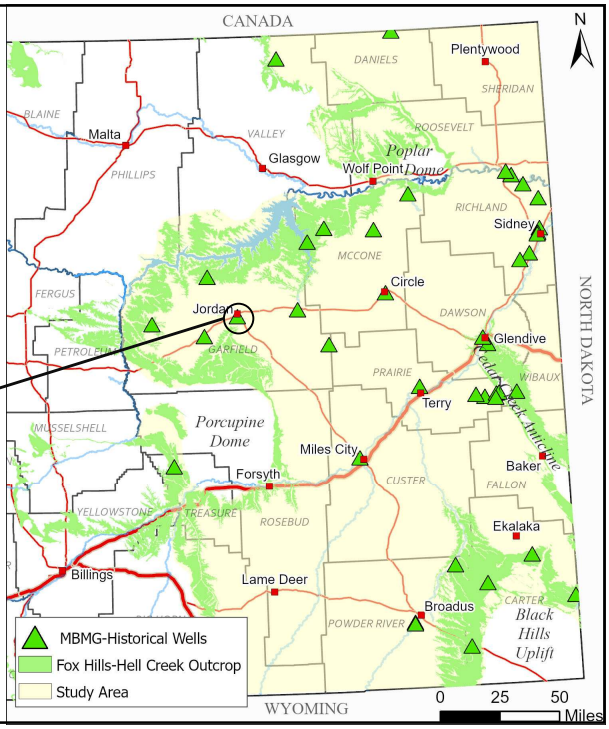


Water levels are not declining everywhere!

GWIC Well 31165 Hydrograph

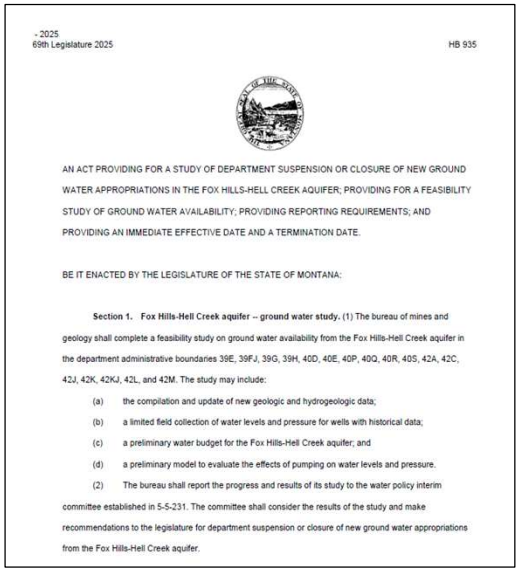


Period of Record: 1983-2025
5 ft net increase in water level



Fox Hills-Hell Creek Aquifer: House Bill 935

- MBMG will conduct a study on the FHHC aquifer, which includes:
  - Compiling existing data
  - Collecting water levels (or pressures) from FHHC wells, prioritizing those with historical data
  - Developing a preliminary water budget
  - Creating a preliminary model that evaluates the effects of pumping
  - Final report due to legislature June 2027



- 2025
69th Legislature 2025 HB 935

AN ACT PROVIDING FOR A STUDY OF DEPARTMENT SUSPENSION OR CLOSURE OF NEW GROUND WATER APPROPRIATIONS IN THE FOX HILLS-HELL CREEK AQUIFER; PROVIDING FOR A FEASIBILITY STUDY OF GROUND WATER AVAILABILITY; PROVIDING REPORTING REQUIREMENTS; AND PROVIDING AN IMMEDIATE EFFECTIVE DATE AND A TERMINATION DATE.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MONTANA:

Section 1. Fox Hills-Hell Creek aquifer -- ground water study. (1) The bureau of mines and geology shall complete a feasibility study on ground water availability from the Fox Hills-Hell Creek aquifer in the department administrative boundaries 39E, 39FJ, 39G, 39H, 40D, 40E, 40P, 40Q, 40R, 40S, 42A, 42C, 42J, 42K, 42KJ, 42L, and 42M. The study may include:

(a) the compilation and update of new geologic and hydrogeologic data;

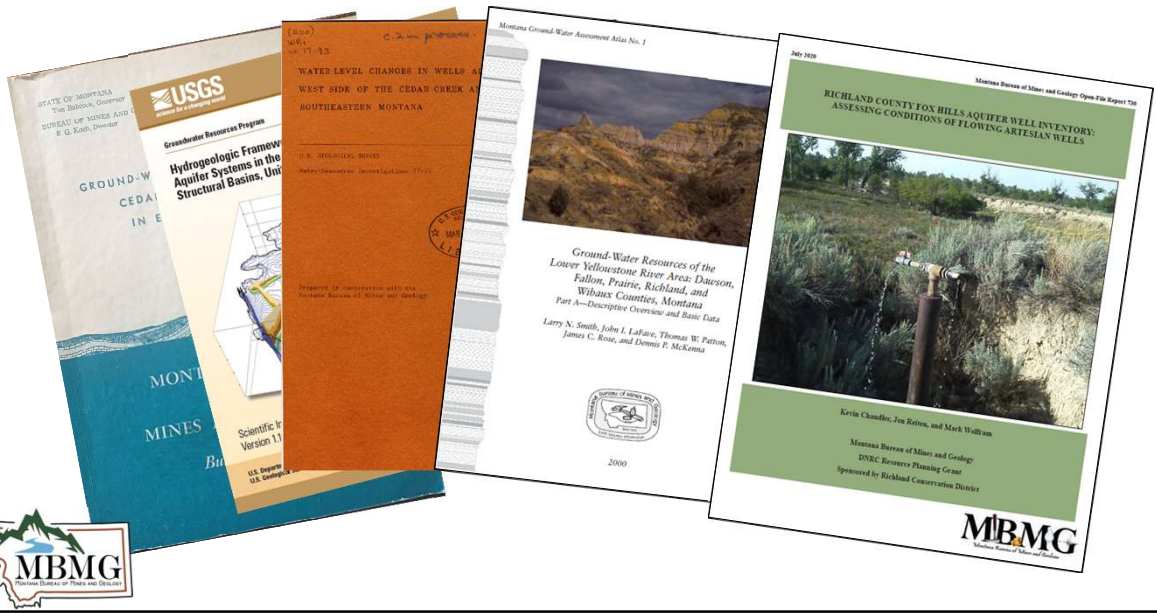
(b) a limited field collection of water levels and pressure for wells with historical data;

(c) a preliminary water budget for the Fox Hills-Hell Creek aquifer; and

(d) a preliminary model to evaluate the effects of pumping on water levels and pressure.

(2) The bureau shall report the progress and results of its study to the water policy interim committee established in 5-5-231. The committee shall consider the results of the study and make recommendations to the legislature for department suspension or closure of new ground water appropriations from the Fox Hills-Hell Creek aquifer.

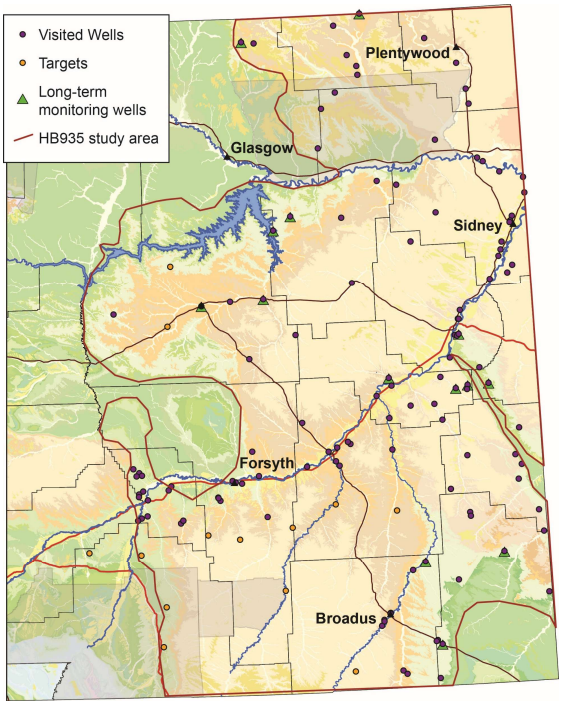
Compile existing data



Water level measurements

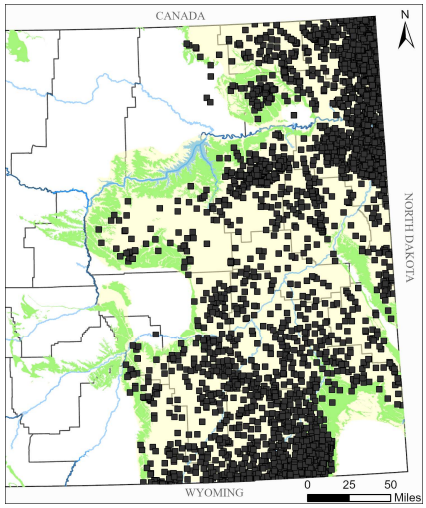
Water level measurements:

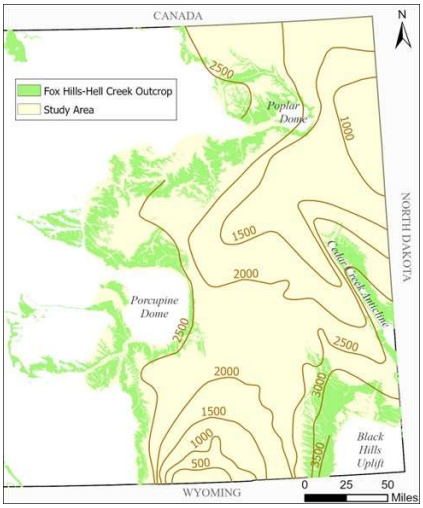
- 120 sites visited as of 4/30/2026
- 76 with historic data
- 20 with >25 years of data
  - MBMG long-term monitoring network!
- 9 sites are instrumented to collect hourly data



Groundwater Model Development

- Current effort: create maps showing elevation and thickness of the aquifer using existing data from petroleum and water well logs.
- Base layer for upcoming model





Working to create a more detailed version of this (original surface from Feltis, 1984)

Fox Hills-Hell Creek: HB935
What's next?

- Wrap up water level measurements
- Release web-app interactive map
- Finalize well coding in GWIC
- Complete structure maps
  - Will be released as an MBMG publication
- Construct water-table maps
  - Will be released as an MBMG publication
- Develop preliminary groundwater model
- Calculate preliminary water budget

THANK YOU!

QUESTIONS?

Link to the GWIC database: https://mbmggwic.mtech.edu/

Link to our publications: https://mbmg.mtech.edu/mbmgcat/catMain.asp#gsc.tab=0

Sara Edinberg
Hydrogeologist
sedinberg@mtech.edu
(406) 496-4381