



Division 512 Rulemaking: Ground Water Regulation for the Malheur Lake Administrative Basin

Oregon Water Resources Department

Rules Advisory Committee Meeting

October 25, 2023



Welcome and Introductions





Introductions

- Introduction of new facilitator.
- Ice breaker: How do you use groundwater?



Agenda Review & Meeting Guidelines



Goal of Today's Meeting

- Build mutual understanding and capture feedback related to draft subareas map.
- Review, discuss and capture feedback regarding possible criteria for curtailment.
- Review classification rule language and discussing alternative approaches.

Meeting Agenda

1:00 - 1:20	Welcome and Introductions
1:20 - 2:40	Draft Subareas Discussion
2:40 – 2:50	Break
2:50 - 4:00	Possible Criteria for Curtailment
4:00 - 4:30	Rule Language Discussion – Classification
4:30 - 5:00	Public Comment

Ground Rules

- You are here to express your viewpoint.
- Treat others respectfully.
- If online, remain muted when not speaking.
- If online, use “raise hand” feature to indicate that you would like to speak.
- If in-person, raise hand to indicate that you would like to speak.
- RAC only participates in RAC meeting and Public only participates in comment period.

RAC Operating Guidelines

RAC Role

- Attend and participate in meetings at the horseshoe or online.
- Provide input/advice and help the Department consider various perspectives.

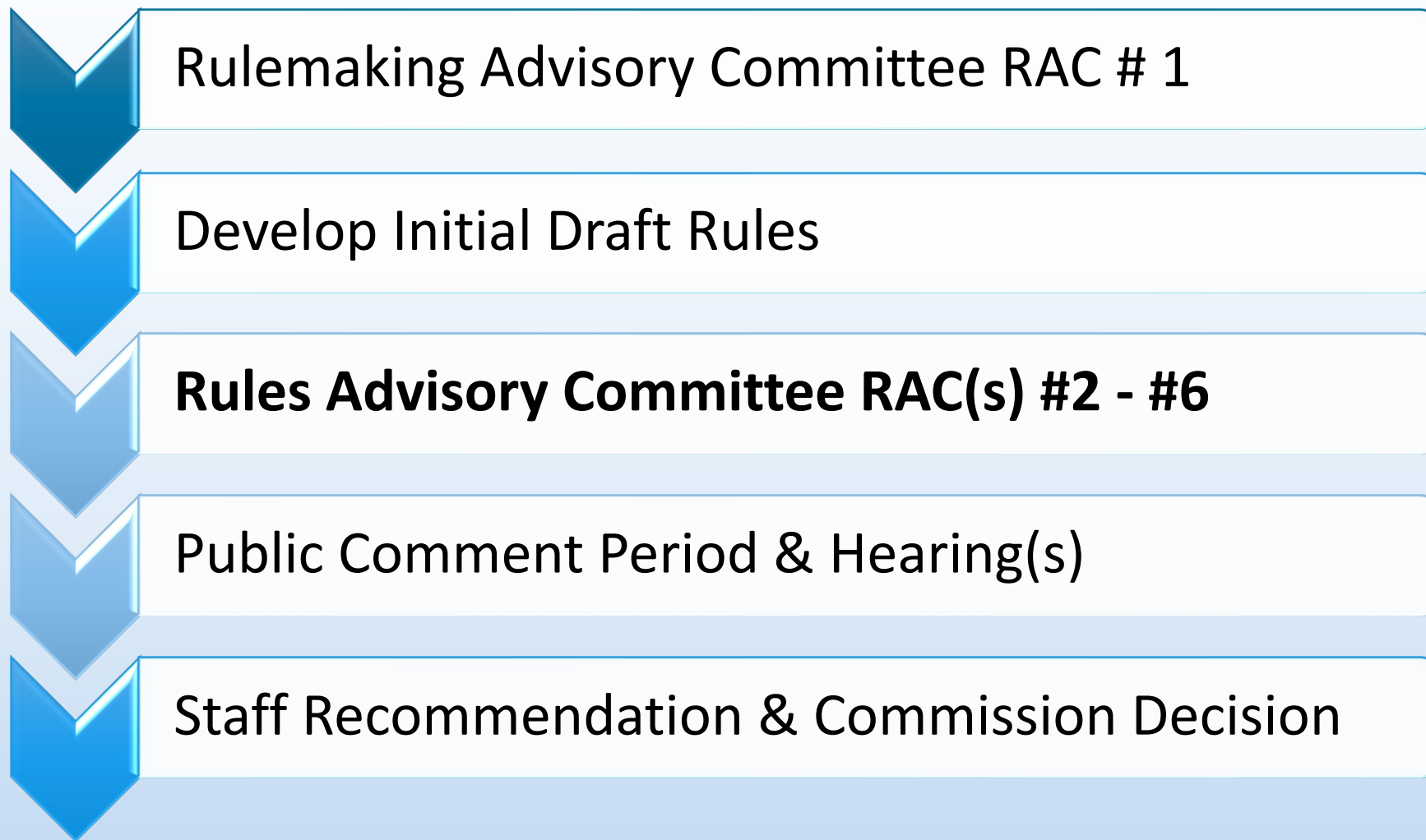
Public Role

- Listen only during the presentations and RAC discussions from the audience or online.
- Provide input/advice during the designated comment time.

Department Role

- Facilitate meetings.
- Foster collaboration.
- Consider RAC and public feedback.
- Draft final rules.

Overview of Rulemaking Process For Division 512



Rulemaking Timeline

April 25, 2023

RAC Number
1

**April 2024 –
June 2024**

Public
Comment

**September
2024**

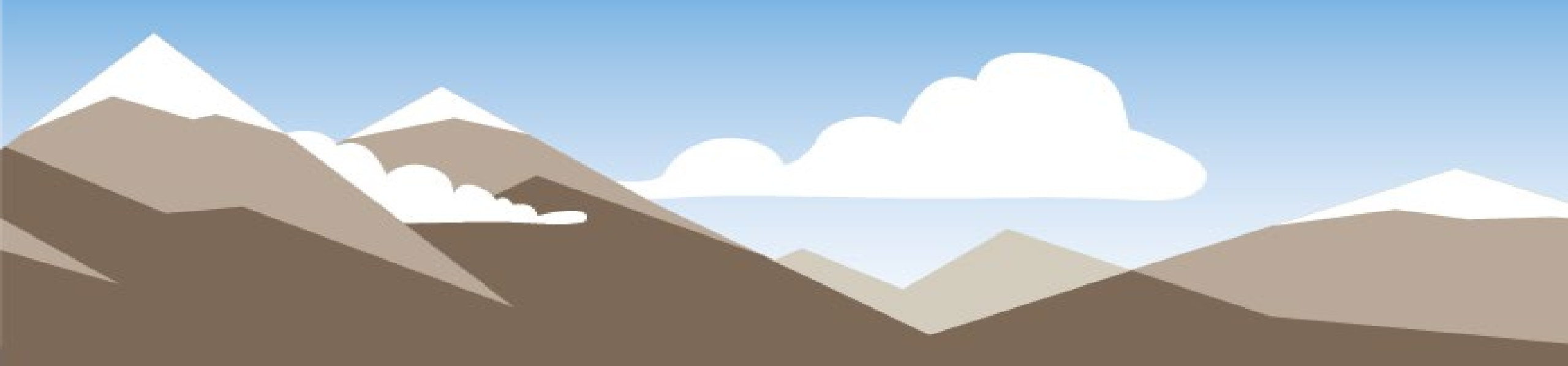
WRC
Adoption

**August 2023
– February
2024**

RAC Number
2– 6

**July - August
2024**

Draft Staff
Report



Subarea Boundaries: A Proposal



What is a subarea?

A CGWA subarea is a portion of a groundwater reservoir that shares similar hydrogeologic properties and similar groundwater conditions including groundwater level elevations, seasonal and annual water level trends, and response to natural and human stresses.

The intent of dividing a CGWA into subareas is to group wells that similarly impact the local portion of the groundwater reservoir and where reductions in groundwater pumpage, through voluntary or regulatory action, will have a timely, measurable, efficient, and similar groundwater response within that sub area.

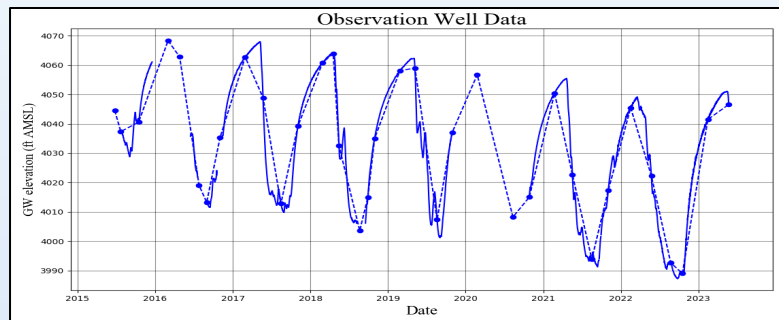
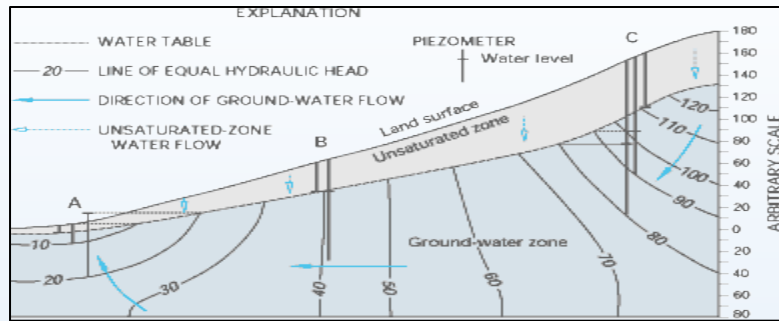
How can subareas be used?

Subareas can be used in several ways:

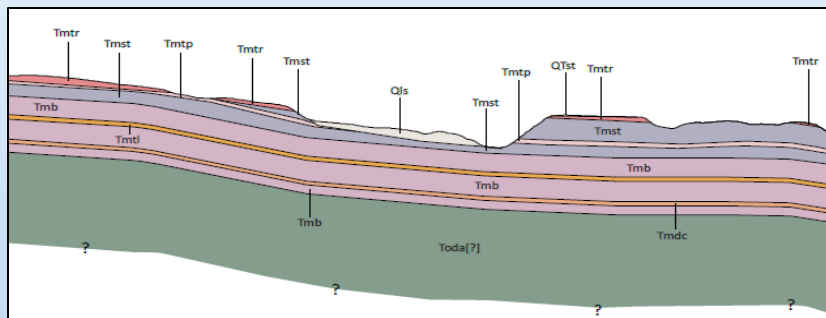
- Voluntary Agreements: Subareas clarify which groundwater users could work together on a voluntary agreement within that portion of the groundwater reservoir.
- Curtailment: Subareas can facilitate targeted curtailment implementation within the CGWA with the goal of reducing groundwater level declines within portions of the groundwater reservoir where declines are most severe. This approach attempts to minimize the impact to groundwater rights not located in areas of greatest decline.
- Transfers: Under consideration is the concept that subareas could be useful to help assess “same source” for the purposes of transfers, meaning that transfers within a sub area could be allowed and transfers between sub areas may not. Again, this relates to timely, efficient, and similar impacts with respect to establishing subareas.
- Water use measurement and reporting (SWMPA): Subareas can facilitate targeting water use measurement and reporting requirements to specific areas, which may delay the cost and burden of measurement and reporting in other portions of the CGWA.

Harney Basin Critical Groundwater Area Boundary Delineation Criteria

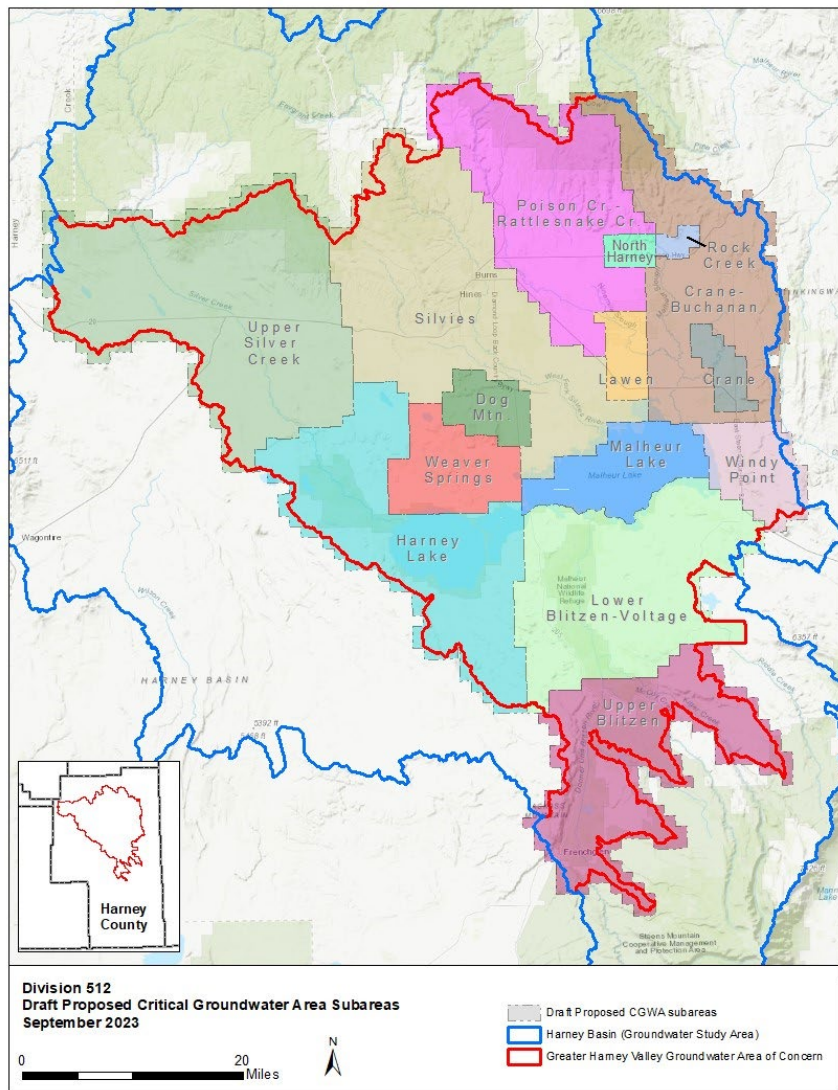
Proposed criteria for sub-area delineation



- Hydraulic Gradient
 - The driving force of groundwater flow
- Groundwater Level Trends
 - Provide information on seasonal and long-term response to stresses
- Subsurface Materials
 - Control the storage and flow of groundwater



Harney Basin Critical Groundwater Area Proposed Subareas



15 Proposed Subareas:

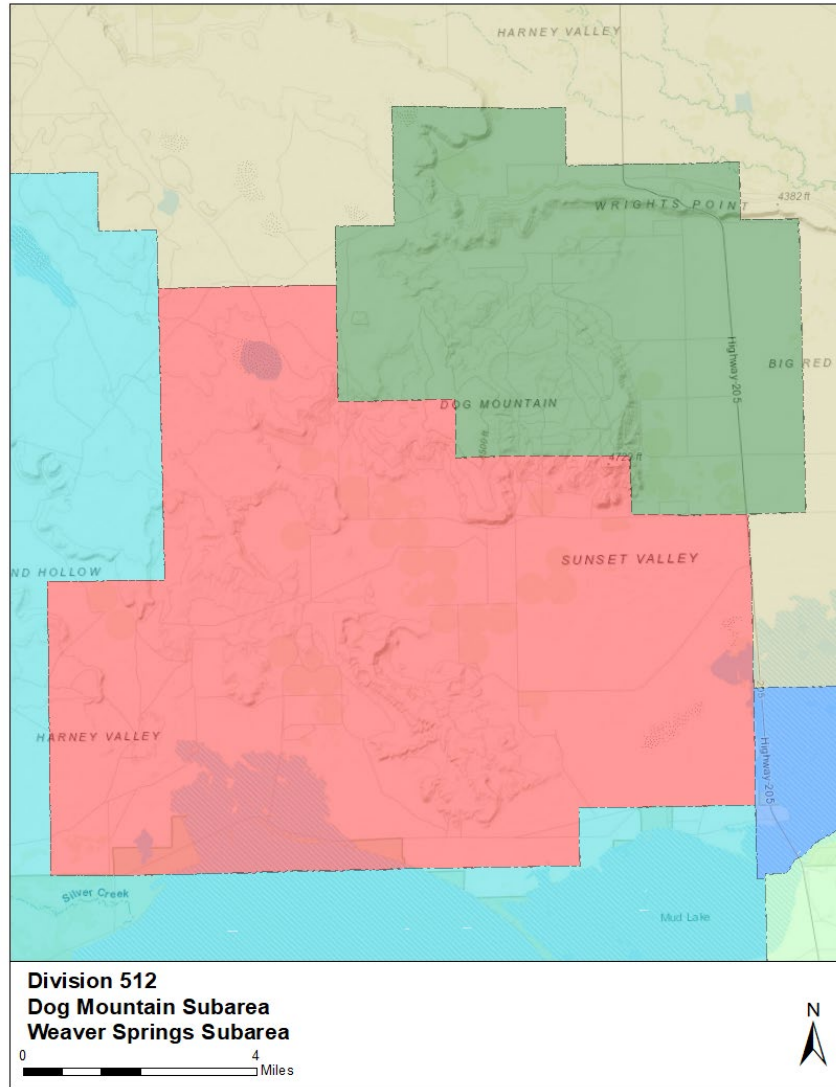
1. Upper Silver Creek
2. Harney Lake
3. Weaver Springs
4. Dog Mountain
5. Silvies
6. Poison Creek – Rattlesnake Creek
7. North Harney
8. Rock Creek
9. Crane – Buchanan
10. Crane
11. Lawen
12. Malheur Lake
13. Windy Point
14. Lower Blitzen – Voltage
15. Upper Blitzen

The Department does not anticipate curtailment in all subareas. How the curtailment process is timed and implemented is open to discussion and has not been determined.

Harney Basin Critical Groundwater Area Proposed Subareas

Subarea Examples

Harney Basin Critical Groundwater Area Dog Mountain & Weaver Springs



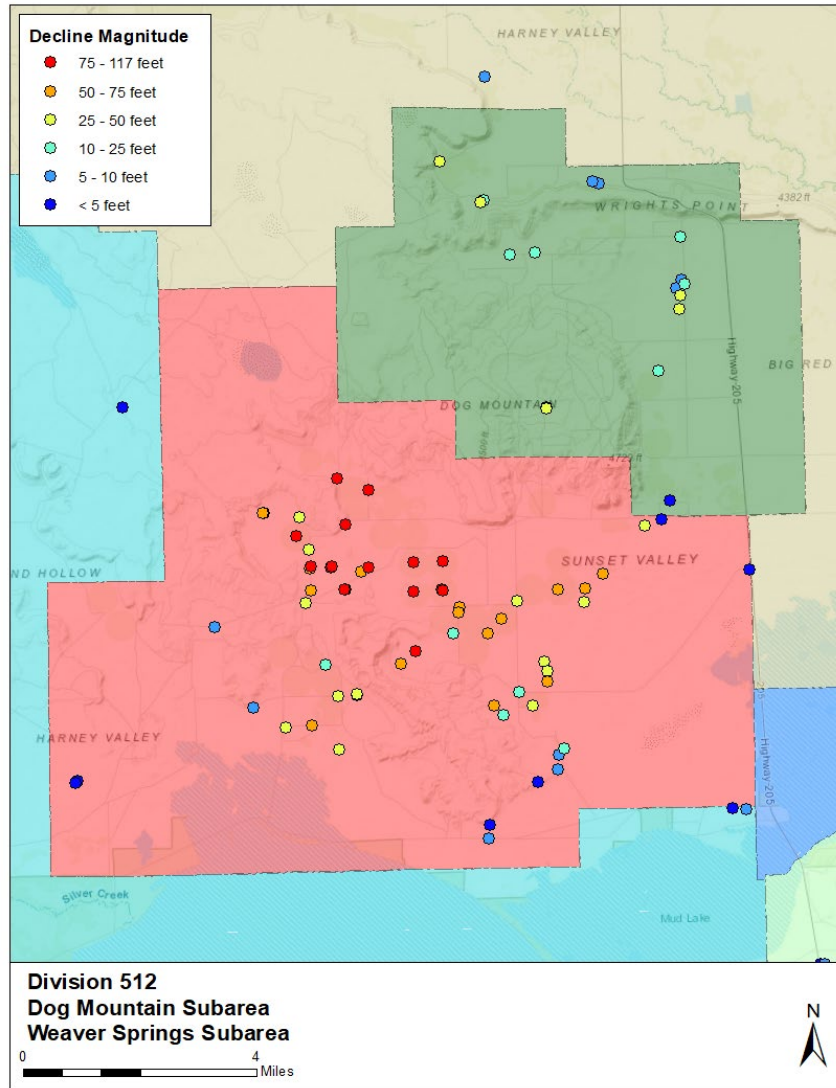
Dog Mountain Subarea:

- Covers lands surrounding Dog Mountain, Sunset Valley Lane, and the western part of Wrights Point.

Weaver Springs Subarea:

- Covers lands enclosing the main Weaver Springs groundwater level cone of depression.

Harney Basin Critical Groundwater Area Dog Mountain & Weaver Springs



Dog Mountain Subarea:

Groundwater levels:

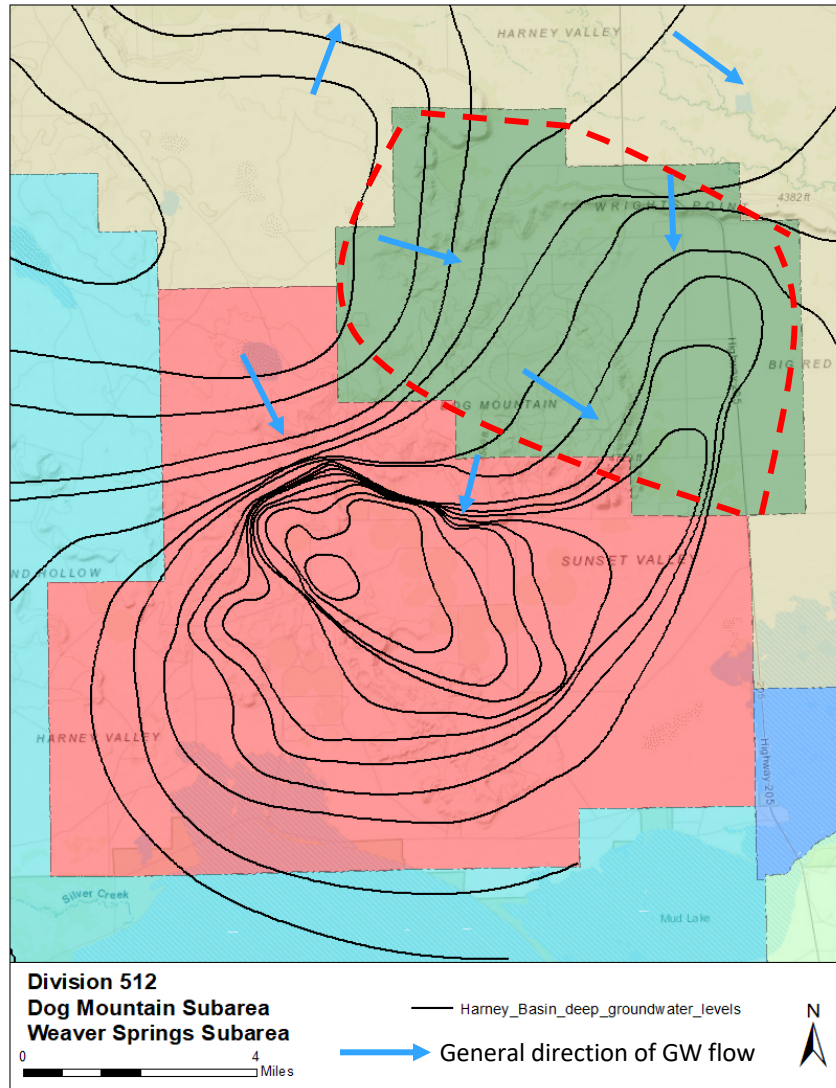
- Declined over 35 feet in some areas
- Median annual decline rate of about 1.5 feet per year.

Weaver Springs Subarea:

Groundwater levels:

- Declined over 100 feet in some areas
- Median annual decline rate of more than 5 feet per year.

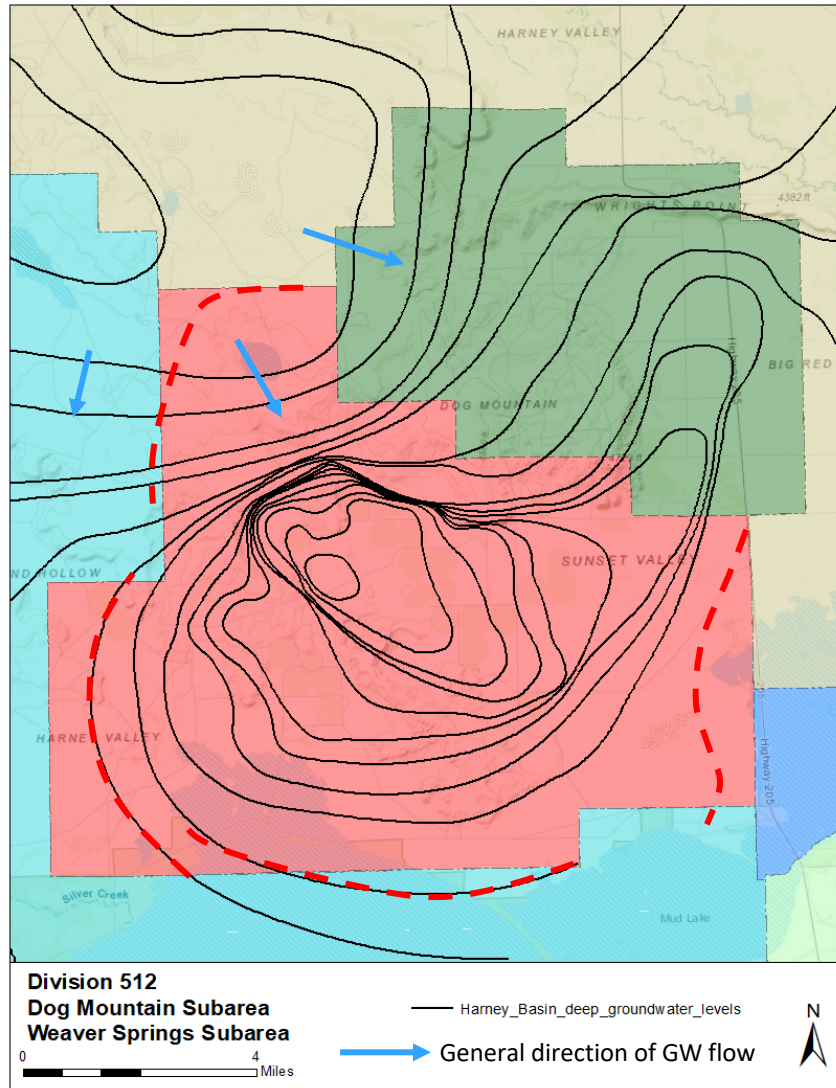
Harney Basin Critical Groundwater Area Dog Mountain & Weaver Springs



Dog Mountain Subarea:

- Southwestern and western margin defined by a hydraulic gradient where groundwater flow transitions from southerly flow to easterly flow.
- Northern boundary defined by a transition from easterly/southeasterly groundwater flow to southerly flow toward Sunset Valley; transition to wells experiencing groundwater level declines similar to wells south of Wrights Point.
- Eastern boundary defined by 4090' water table elevation contour.
- Southeastern boundary defined by transition from the narrowly constrained northern arm of the cone of depression into the main Weaver Springs cone of depression; transition from basin fill sediments to proximal vent deposits.

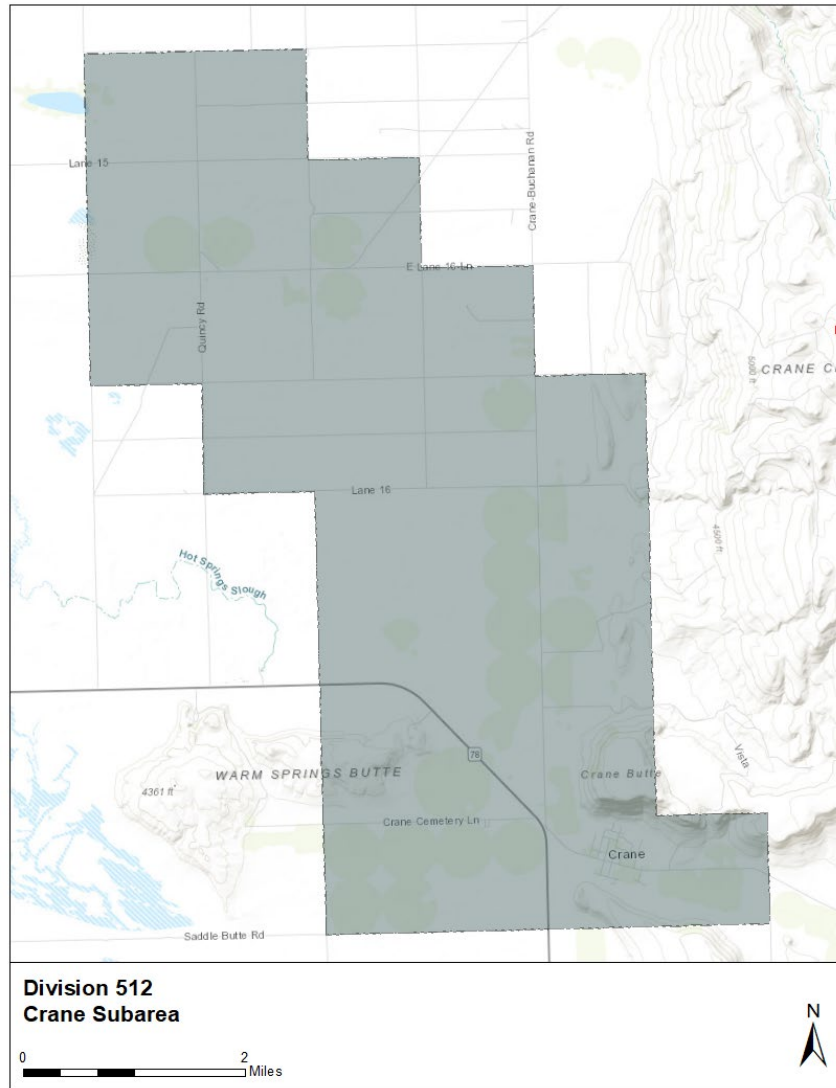
Harney Basin Critical Groundwater Area Dog Mountain & Weaver Springs



Weaver Springs Subarea:

- Southern boundary defined by 4090' groundwater level elevation contour; transition from proximal vent deposits to basin fill sediments.
- Eastern boundary defined by 4090' water table elevation contour; transition from proximal vent deposits to basin fill sediments
- Western boundary defined by 4100' groundwater level elevation contour.
- Northwestern boundary defined by divergent hydraulic gradient where groundwater flow transitions to southeasterly flow.

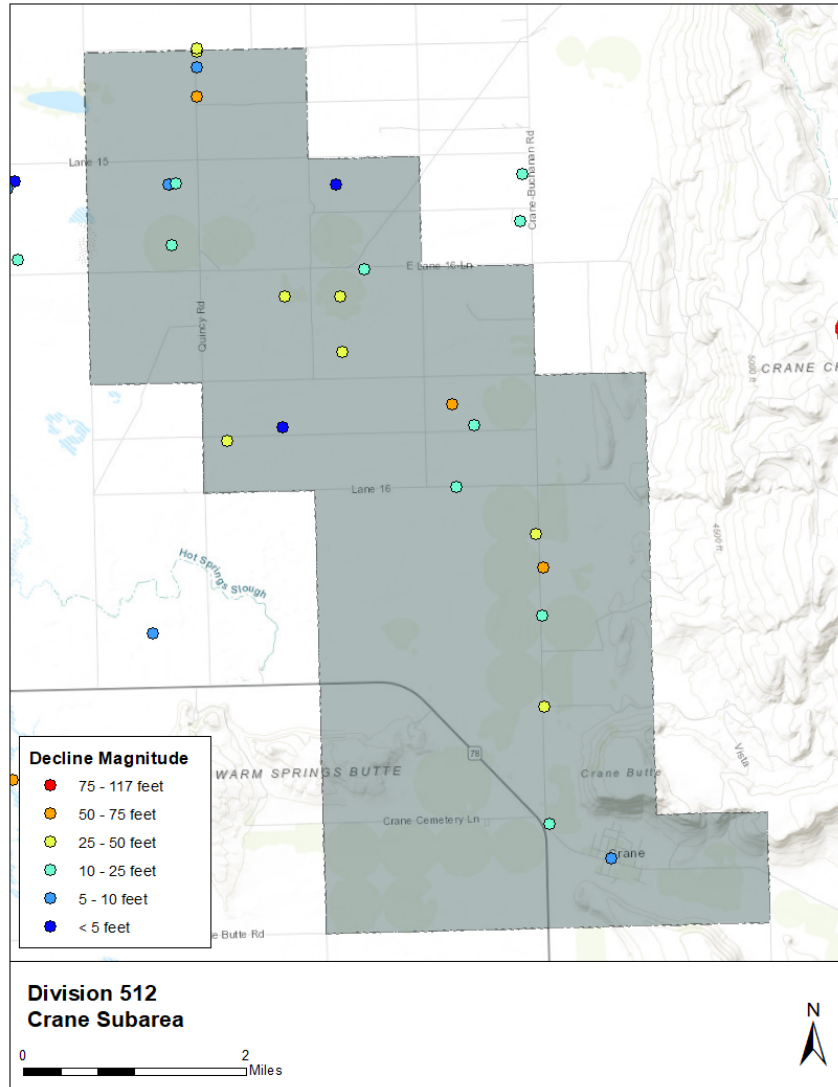
Harney Basin Critical Groundwater Area Crane Subarea



Crane subarea:

- Covers lands in the Crane vicinity and sections up to the northwest of Crane.

Harney Basin Critical Groundwater Area Crane Subarea

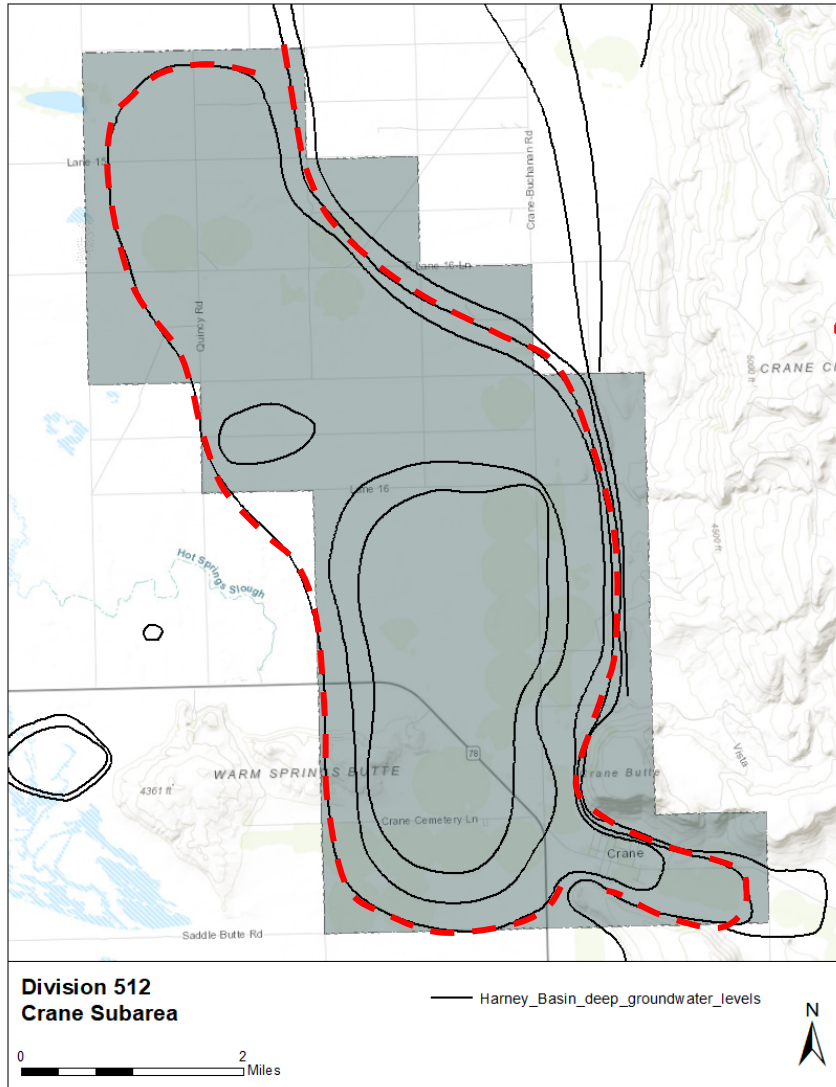


Crane subarea:

Groundwater levels:

- Declined nearly 70 feet in some areas
- Median annual decline rate of about 1 foot per year.

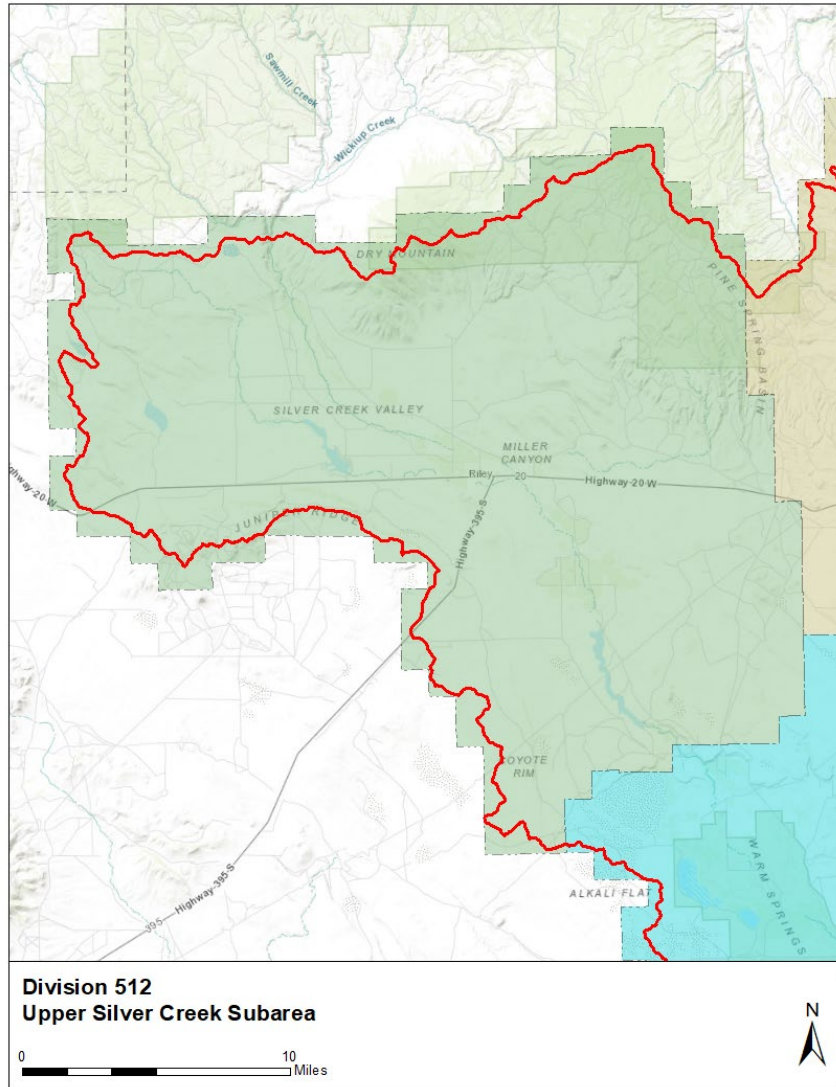
Harney Basin Critical Groundwater Area Crane Subarea



Crane subarea:

- Overall, the subarea is defined by the extent of the cone of depression expressed in the deep groundwater level contours
- Northern, western, and southern boundaries defined by 4080' contour.
- Eastern boundary defined by 4090' contour.

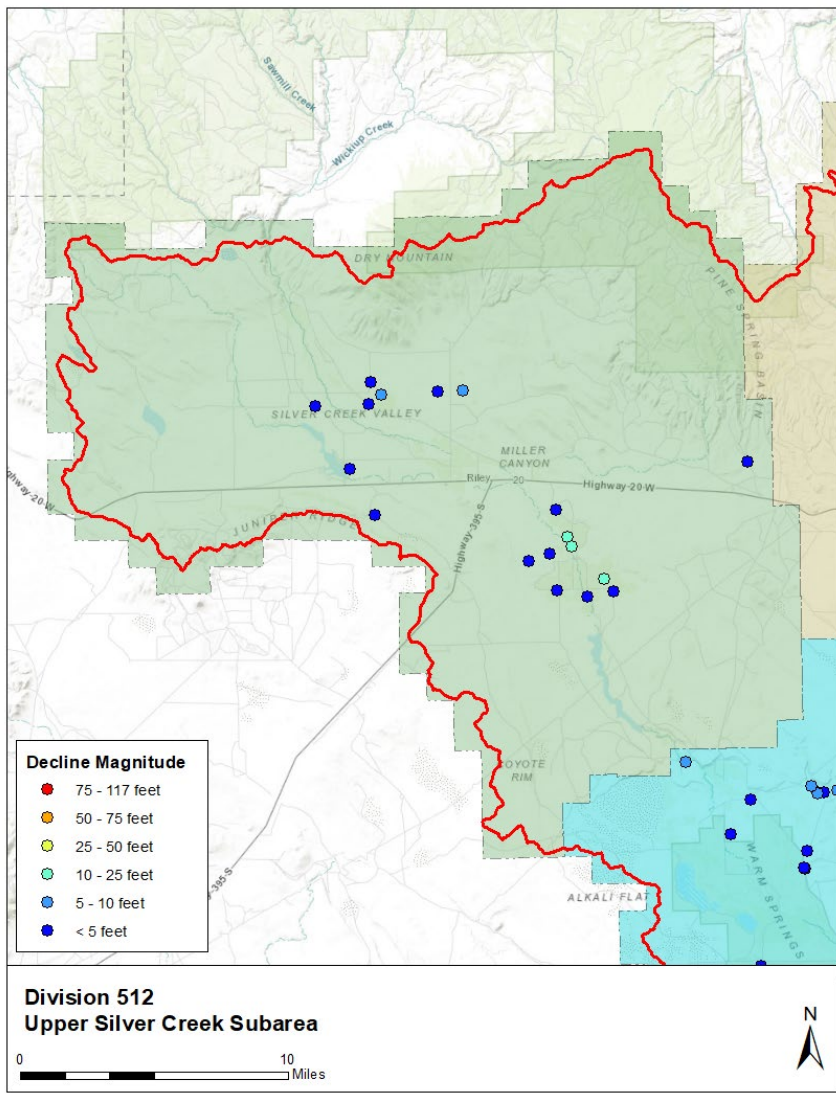
Harney Basin Critical Groundwater Area Upper Silver Creek Subarea



Upper Silver Creek subarea:

- Covers lands surrounding Silver Creek Valley, including Silver Creek and its primary tributaries, Chickahominy Reservoir, Moon Reservoir, and the surrounding upland areas.
- From the western margin of the basin to Sage Hen Creek.
- Dry Mountain down to the bottom of Moon Reservoir.

Harney Basin Critical Groundwater Area Upper Silver Creek Subarea

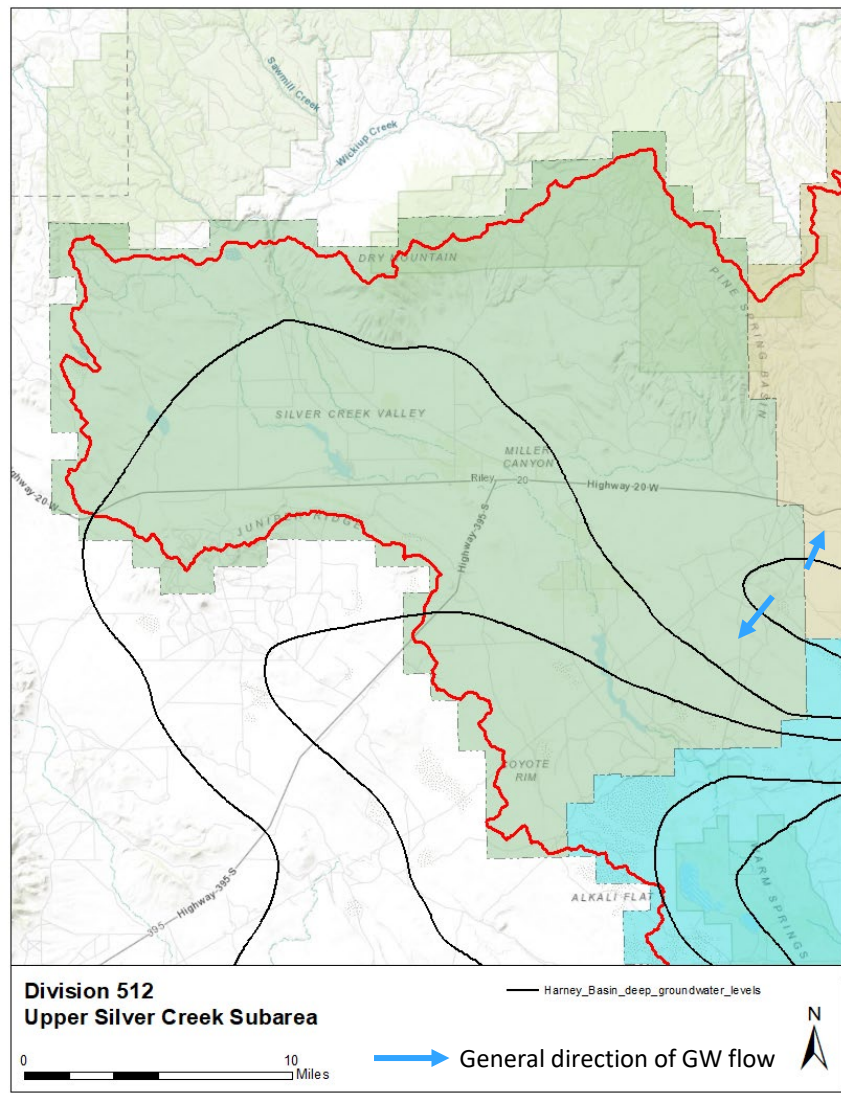


Upper Silver Creek subarea:

Groundwater levels:

- Declined over 10 feet in some areas
- Median annual decline rate of less than 0.5 feet per year.

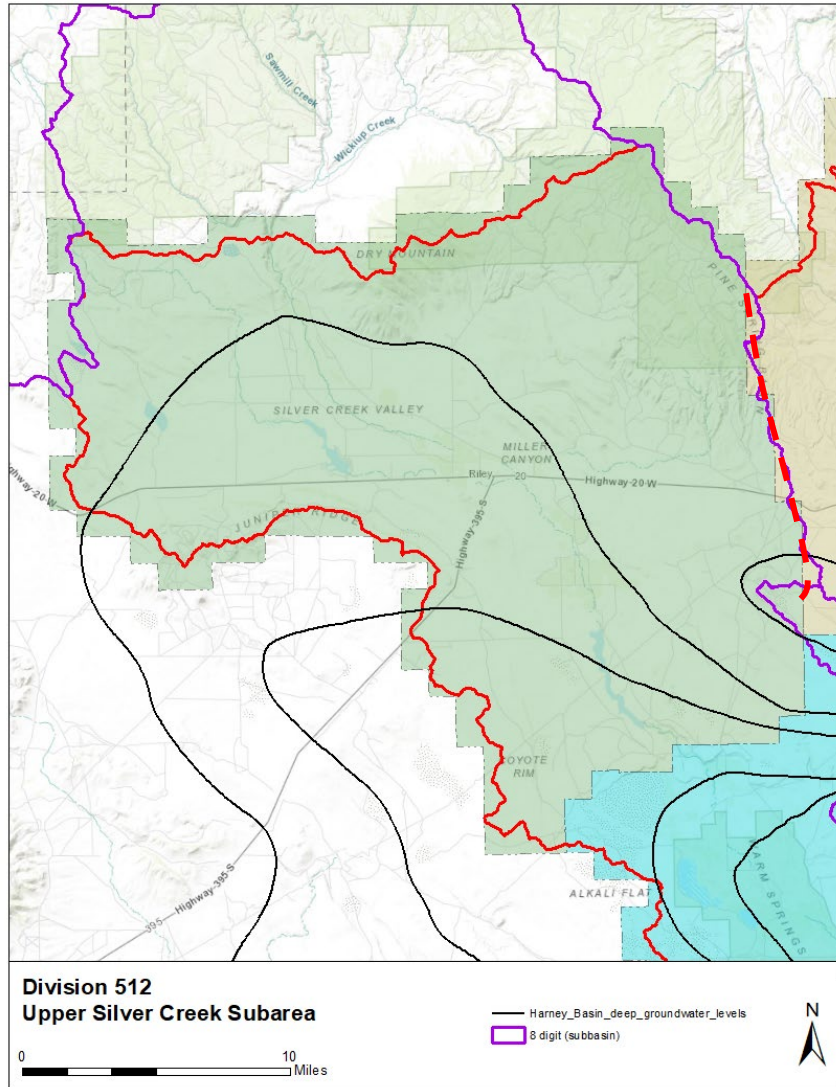
Harney Basin Critical Groundwater Area Upper Silver Creek Subarea



Upper Silver Creek subarea:

- Defined broadly by the extensive flat hydraulic gradient depicted by the groundwater level elevation contours representing the potentiometric surface for wells deeper than 150 feet.
- Western and northern boundaries defined by the extent of the GHVGAC boundary.
- Southeastern boundary defined by divergent groundwater gradient.
- Southern boundary defined by transition from broad flat gradient to an increasingly steeper gradient down into Warm Springs Valley.

Harney Basin Critical Groundwater Area Upper Silver Creek Subarea



Upper Silver Creek subarea:

- Northeastern boundary defined by the USGS Watershed Boundary Dataset (surface water divide).

RAC Questions and Feedback



Criteria for Curtailment

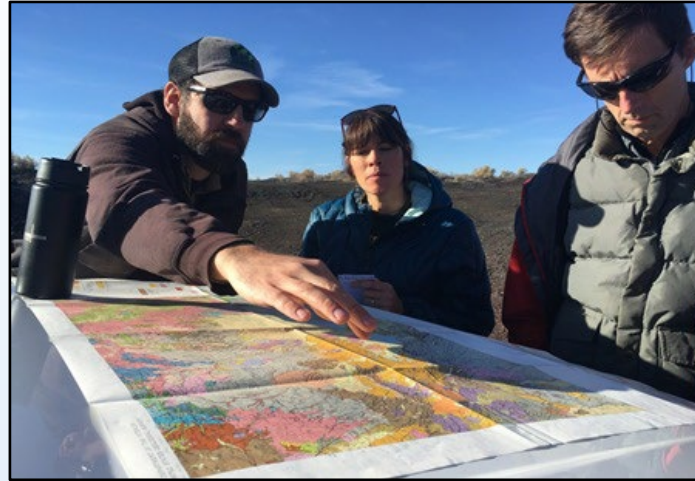


Harney Basin Proposed Curtailment Criteria

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WATER RESOURCES
DEPARTMENT



Jerry Grondin, OWRD Hydrogeologist
OAR 690-512 Rule Advisory Committee
25 October 2023
Meeting

Outline

- 1. Proposed criteria for prioritizing (ranking) critical groundwater area (CGWA) subareas for curtailment.**
- 2. Example of applying the criteria to a subarea.**
- 3. RAC discussion and feedback.**

Proposed Criteria for Prioritizing CGWA Subareas for Curtailment

prioritize subareas for curtailment based on the following

1. Greatest to least groundwater level decline rate (one or more wells)
2. Greatest to least total groundwater level decline (one or more wells)
3. Deepest to least groundwater elevation below 4080-feet amsl (one or more wells)³
4. A well-defined groundwater level cone of depression dominates the subarea⁴

1 4080-feet amsl elevation is below the bottom of Harney Lake (amsl = above mean sea level)

2 Closed GW level contours indicating a depression (a “sink” or low point)

Proposed Criteria for Prioritizing CGWA Subareas for Curtailment

(Example: prioritize subareas where one or more of the following occurs)

1. A GW level decline rate of 3-feet per year or greater exists within the subarea¹
2. A total GW level decline exceeding 50-feet exists within the subarea²
3. A GW elevation below 4080-feet amsl exists within the subarea³
4. A well-defined GW level cone of depression dominates the subarea⁴

1 Adapted from OAR 690-008-0001(6)(b)

2 Adapted from OAR 690-008-0001(4)(d)

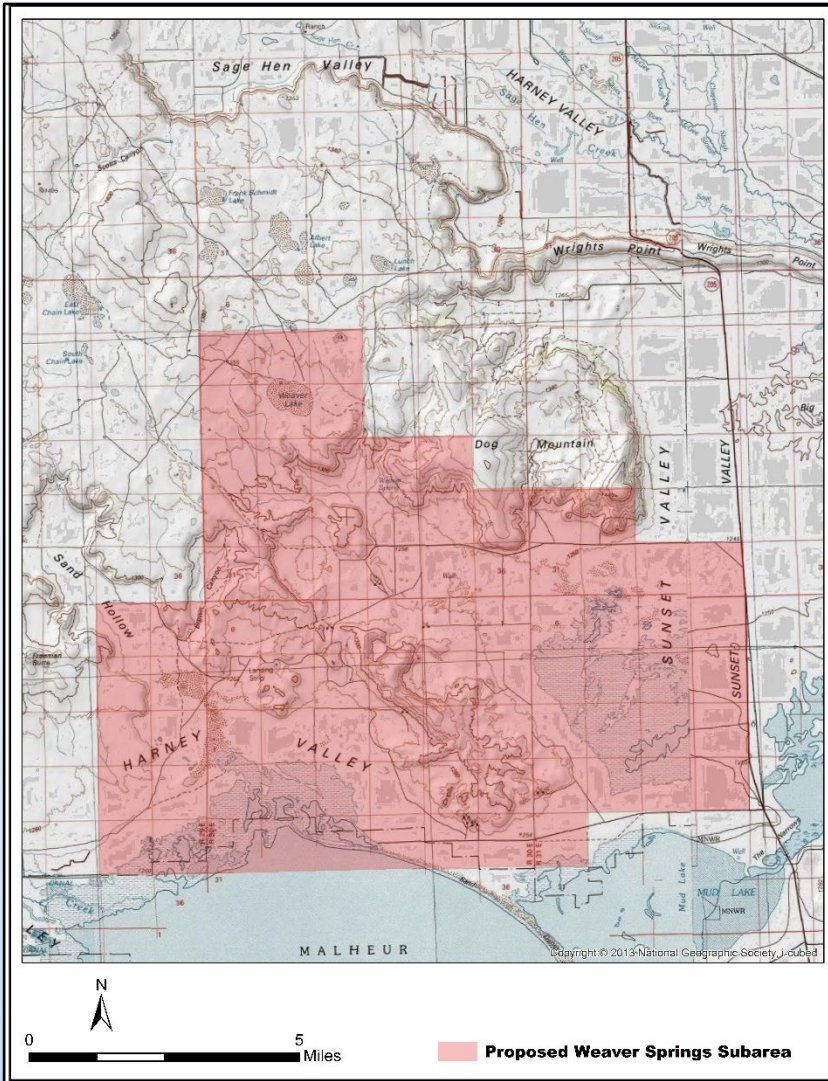
3 4080-feet amsl elevation is below the bottom of Harney Lake (amsl = above mean sea level)

4 Closed GW level contours indicating a depression (a “sink” or low point)

Proposed Weaver Springs Subarea

(all of the example prioritized curtailment criteria occur)

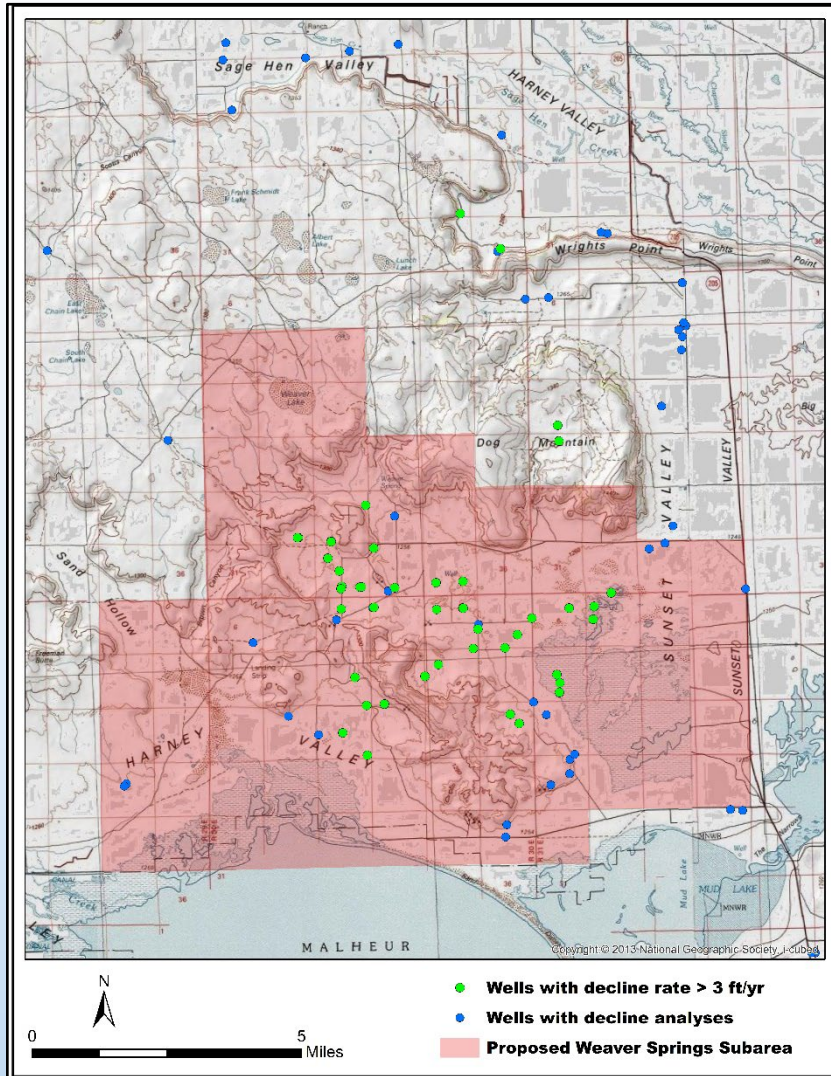
1. A GW level decline rate of 3-feet per year or greater exists within the subarea.
2. A total GW level decline exceeding 50-feet exists within the subarea.
3. A well-defined GW level cone of depression dominates the subarea.
4. A GW elevation below 4080-feet amsl occurs within the subarea.



Proposed Weaver Springs Subarea

(the following occurs)

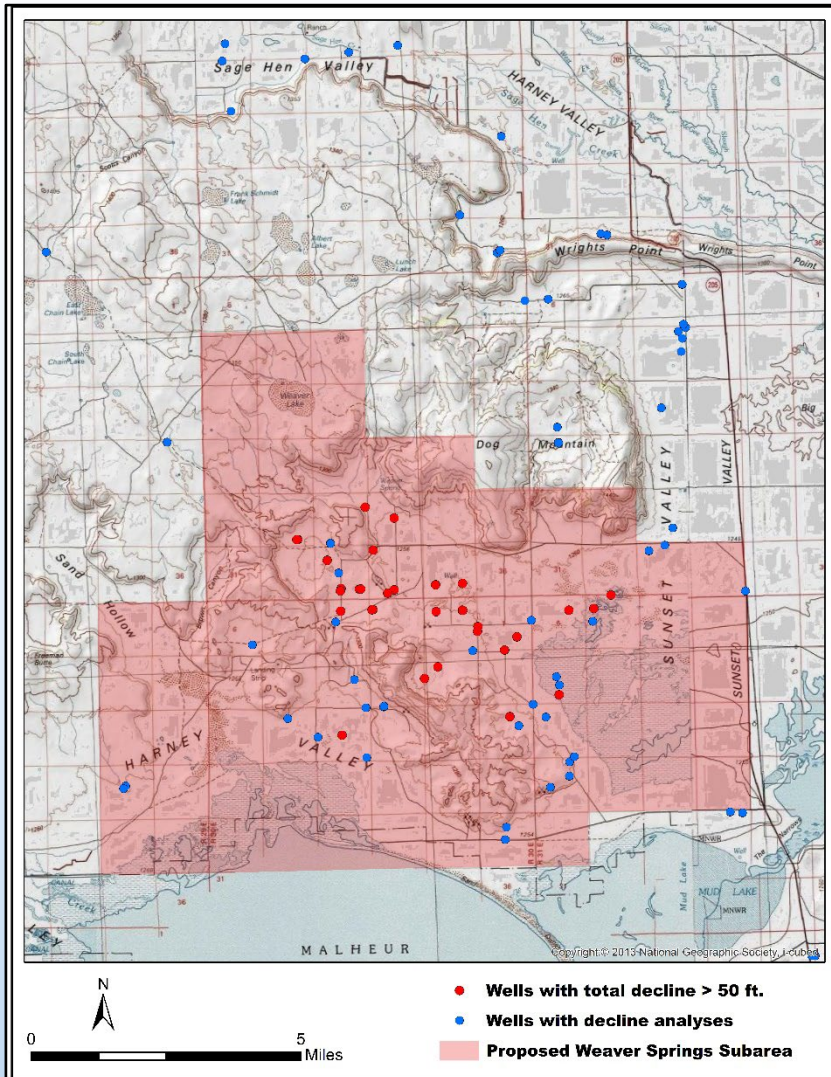
- A GW level decline rate of 3-feet per year or greater exists within the proposed subarea.
 - Available data indicates the GW level measured at multiple wells is declining 3-feet per year or greater (green dots on map.)



Proposed Weaver Springs Subarea

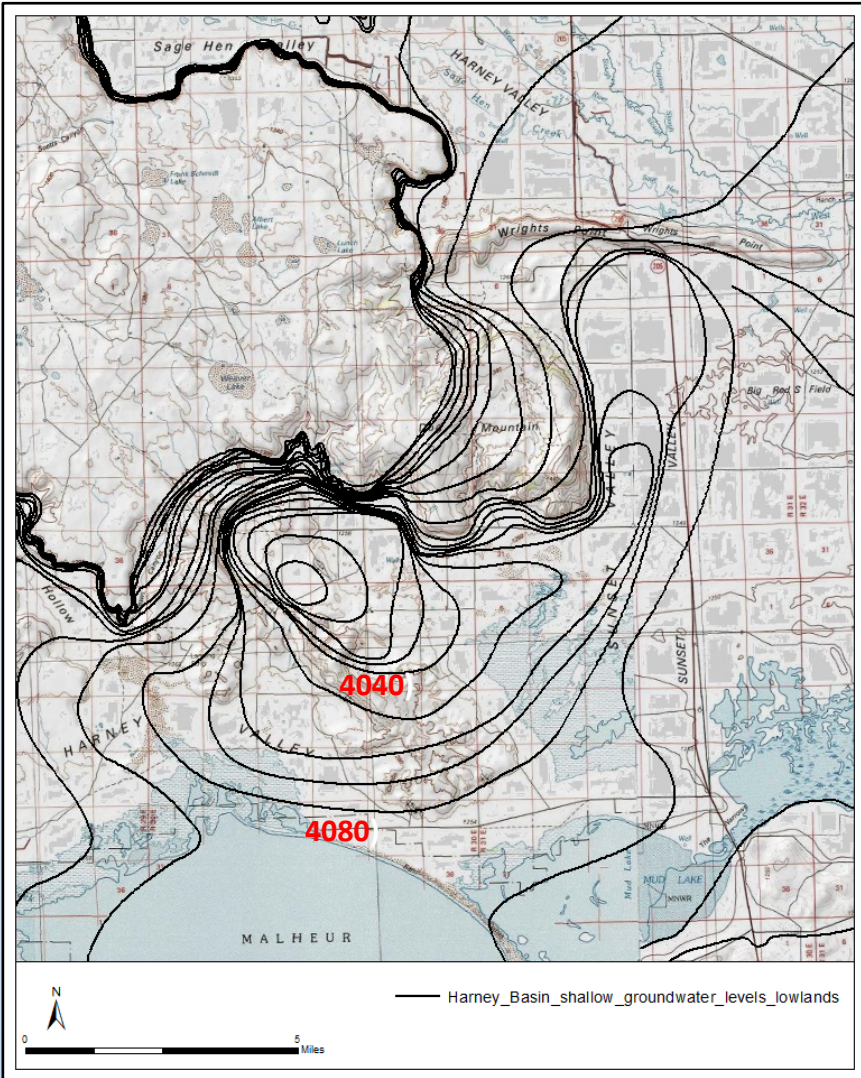
(the following occurs)

- A total GW level decline exceeding 50-feet exists within the proposed subarea.
 - Available data indicates the GW level measured at multiple wells has declined more than 50-feet (red dots on map.)



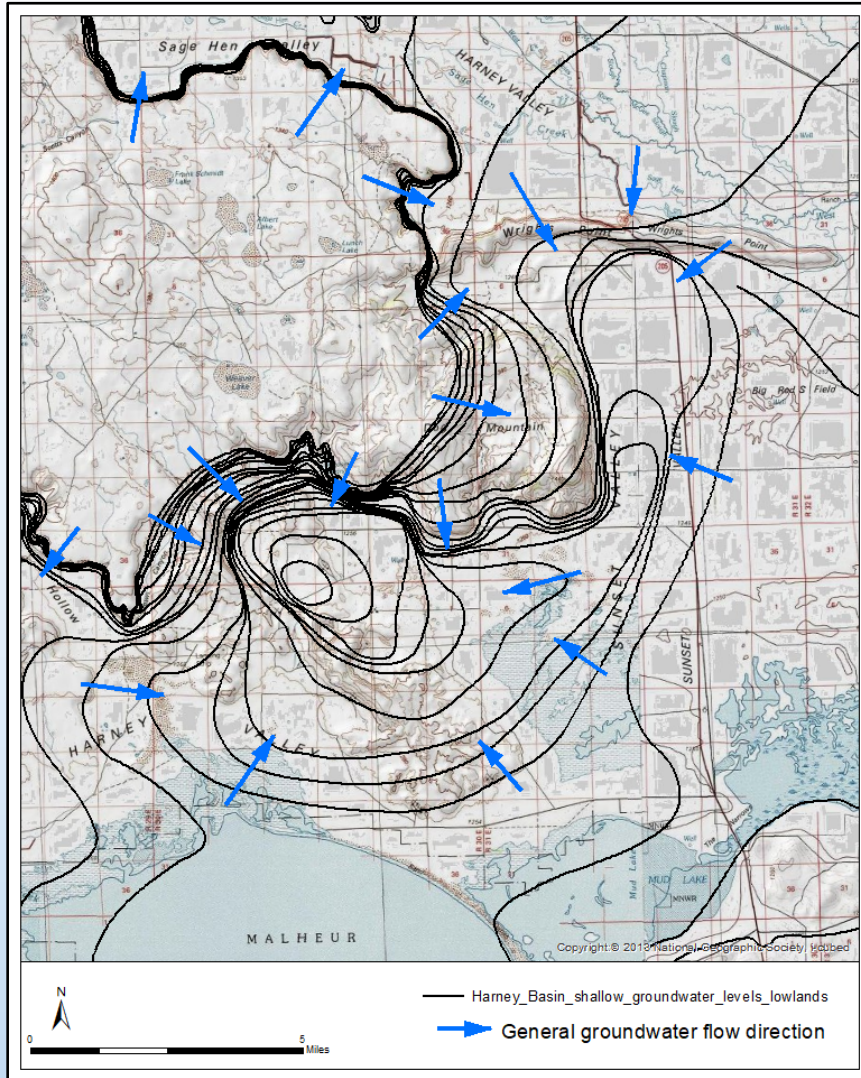
Proposed Weaver Springs Subarea

(the following occurs)



- **A GW elevation below 4080-feet above mean sea level (amsl) occurs within the proposed subarea.**
 - **The basin groundwater low point has moved north from Harney Lake to Weaver Springs**
 - **The lowest elevation contour on this map in the proposed Weaver Spring subarea is 4000-feet amsl**

Curtailment Criteria Example



Proposed Weaver Springs Subarea (the following occurs)

- **A well-defined GW level cone of depression dominates the proposed subarea.**
 - **Groundwater flow has been redirected toward the cone of depression.**
 - **The basin groundwater low point has moved north from Harney Lake to Weaver Springs.**

Discussion and Feedback

- Do these proposed curtailment criteria meet RAC expectations?
- Does the RAC have suggestions for additional criteria?
- What should be the curtailment goals per subarea related to:
 - Moderating the groundwater level decline rate?
 - Moderating the total groundwater level decline?
 - Moderating groundwater elevations below 4,080 ft. amsl?
 - Moderating cones of depression?
- Any questions or discussion items?



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Thank You





Rule Language Discussion: Classification



Intent of Classification

- Prevent new groundwater permits from being issued in upland/recharge areas and the Critical Groundwater Area
- Without preventing certain types of projects from being able to access water.
 - CREP Limited Licenses.
 - Community water systems.
 - Construction projects.
 - Artificial Recharge/Aquifer Storage and Recovery (AR/ASR)
 - Municipal uses.

GHVGAC Example

- Allows new permits when canceling a right:
 - In the 2016 GHVGAC rules, a new permit may be issued if:
 - No potential for substantial interference.
 - Total rate and duty is offset by a voluntary cancellation of a valid right.
 - The application was pending as of April 15, 2016.
 - Also includes a clause making the use classified when it is issued under these rules.

Deschutes Example

- Allows permit application review to bypass a test for interference:
 - Deschutes mitigation program allows a new permit application to bypass the potential for substantial interference test.
 - If new use will impact surface water the same or less than the right being voluntarily cancelled, then the permit application may be approved without additional mitigation.

Stage Gulch CGWA Example

- Prioritizes one type of use over all others:
 - Groundwater allocation will be distributed for municipal use first and does not follow priority date.
 - All other groundwater allocations will be distributed based on priority date of the rights within a subarea.

Options for Achieving the Goals

1. Classify for exempt uses only with exceptions for new applications that require offset (similar to Deschutes example.)
2. Classify for exempt uses only and rely on transfers to get water for projects.

Option 1

- Classify for exempt uses only with exceptions for new applications that require offset.
- Offset requirements:
 - Offset would be provided by cancelling a valid right that is subject to transfer and not subject to regulation in CGWA.
 - Total rate, duty, and acres for the new right cannot exceed the total rate, duty, and acres for the offset right.
- New right would have a new priority date and the rules would need to provide preference to that use so that it wouldn't be subject to regulation within the CGWA.

Option 2

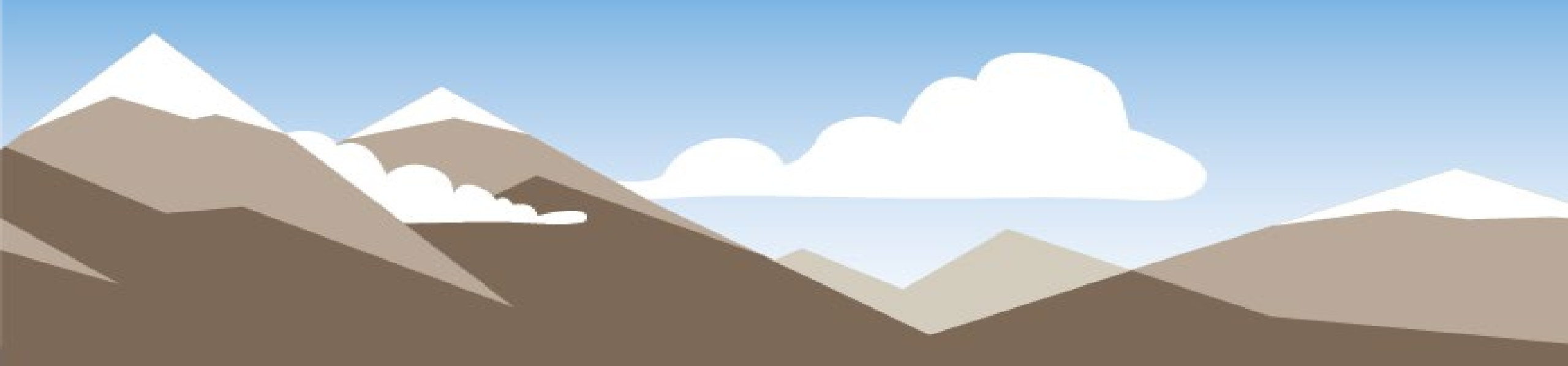
- Classify for exempt uses only and rely on transfers
 - No new permit applications would be approved.
 - Transfers in the Harney Basin would be evaluated for same source (likely same subarea within the CGWA) and injury.
 - Transfers would allow a change in the type and season of use provided the total rate and duty did not exceed the original right being transferred.
 - Example: A right with a 3 acre feet per acre duty and a season of use of March 1 – October 31, could be transferred to expand the season of use to the entire year. The duty would remain 3 acre feet per acre and the rate would be adjusted down so as not to exceed the duty.

Considerations

- Both options require a valid groundwater right.
- An offset program will likely require a complicated set of rules that may have unintended consequences.
- ORS 537.742(2)(b) states that the WRC may only accord preference for residential and stockwater uses. All other uses must follow prior appropriation.
 - This creates challenges for issuing new rights.

Classification Rule Language 690-512-0030

- (1) Except as provided in OAR 690-512-00230(2), the groundwater and surface water of the Malheur Lake Basin are classified for direct appropriation of, or storage and use of, water for domestic, livestock, irrigation, municipal, quasi-municipal, industrial, mining, agricultural water use, commercial, power development, forest management, public uses, road watering, dust abatement and wildlife refuge management.
- (2) The Classification Boundary defined in 690-512-0020(4) is classified for Exempt groundwater uses only.
- (3) Notwithstanding section (2) of this section, limited licenses may be issued to groundwater right holders participating in the Harney County CREP program with an approved conservation plan that contains a determination of need for short term irrigation.



Questions or Comments?



The background features a stylized landscape. The top portion shows brown mountains with white snow-capped peaks and white, fluffy clouds against a light blue sky. The middle section is a solid dark blue band. The bottom portion shows rolling green hills with light tan outlines, suggesting a valley or a path.

Public Comment



Next Steps/ Wrap up



Summary and Next Steps

- Next RAC: RAC #4, November 29, 2023
- Location: Harney County Community Center.
- Time: 1 pm to 5 pm.
- RAC #5 being moved to **January 24, 2024, from 1 to 5 pm.**
- RAC #6 on **February 20, 2024, from 10 am to 2 pm.**



Thank you





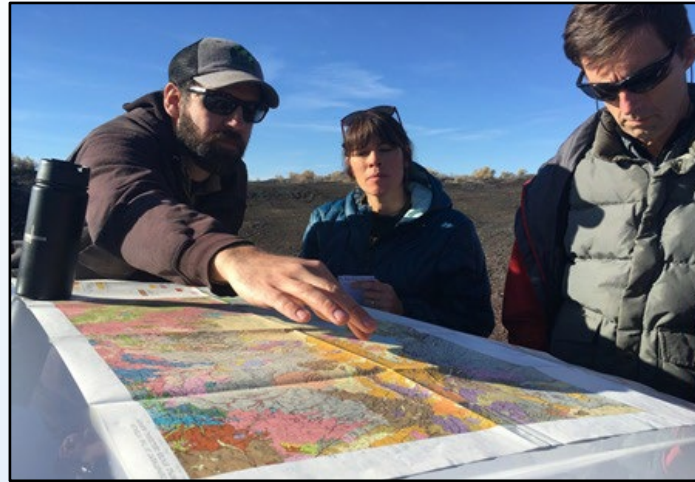
Appendix

Harney Basin Proposed Curtailment Criteria

OREGON



WATER RESOURCES
DEPARTMENT



Jerry Grondin, OWRD Hydrogeologist
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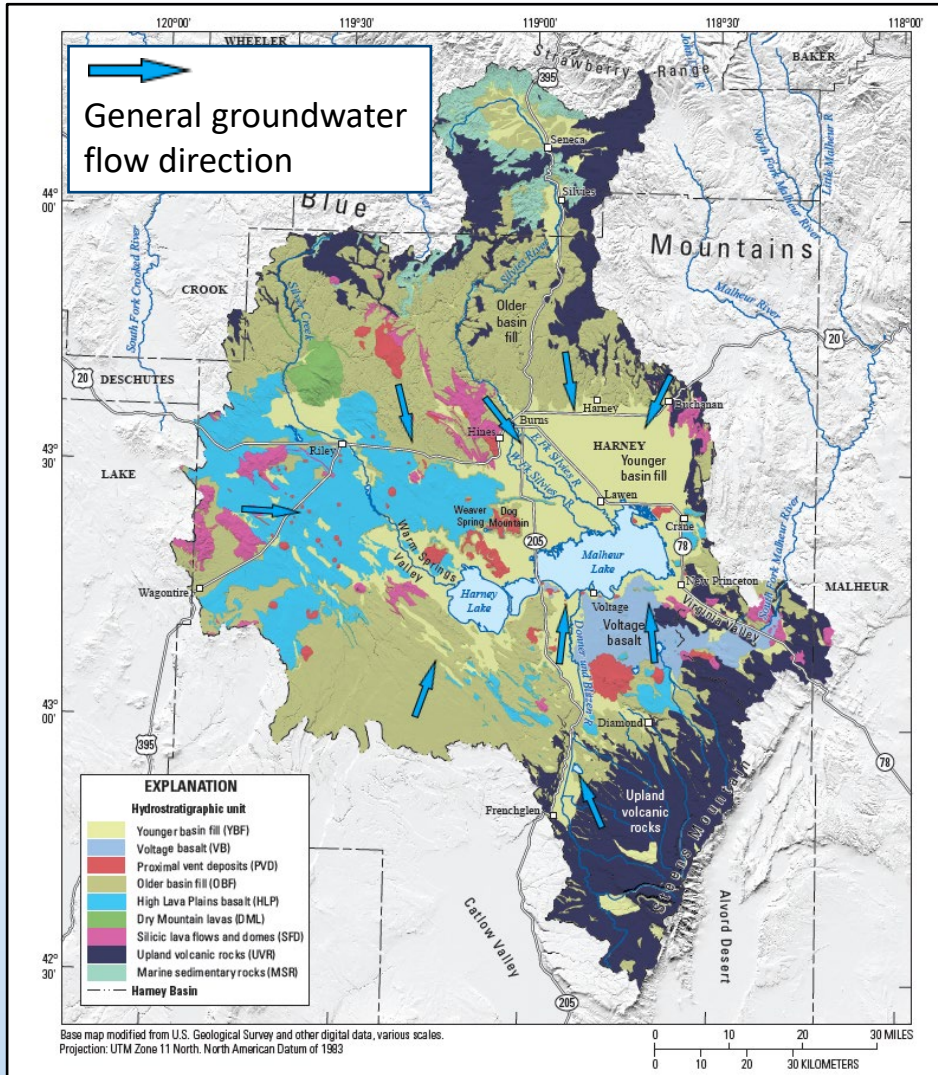


Presentation Outline

Outline

- 1. Recap Harney Basin groundwater system**
- 2. Recap Harney Basin groundwater system response to pumping**

Harney Basin GW System Recap



Recap of Basin Groundwater System

1. Harney Basin groundwater occurs in multiple hydraulically connected hydrostratigraphic units, each with unique and varying hydraulic properties (key to understanding the basin's groundwater)
2. Harney Basin groundwater is a single, hydraulically connected system, a continuum, no impermeable barriers are known to exist
3. Harney Basin groundwater generally flows radially inward from the surrounding upland areas toward the central part of the basin

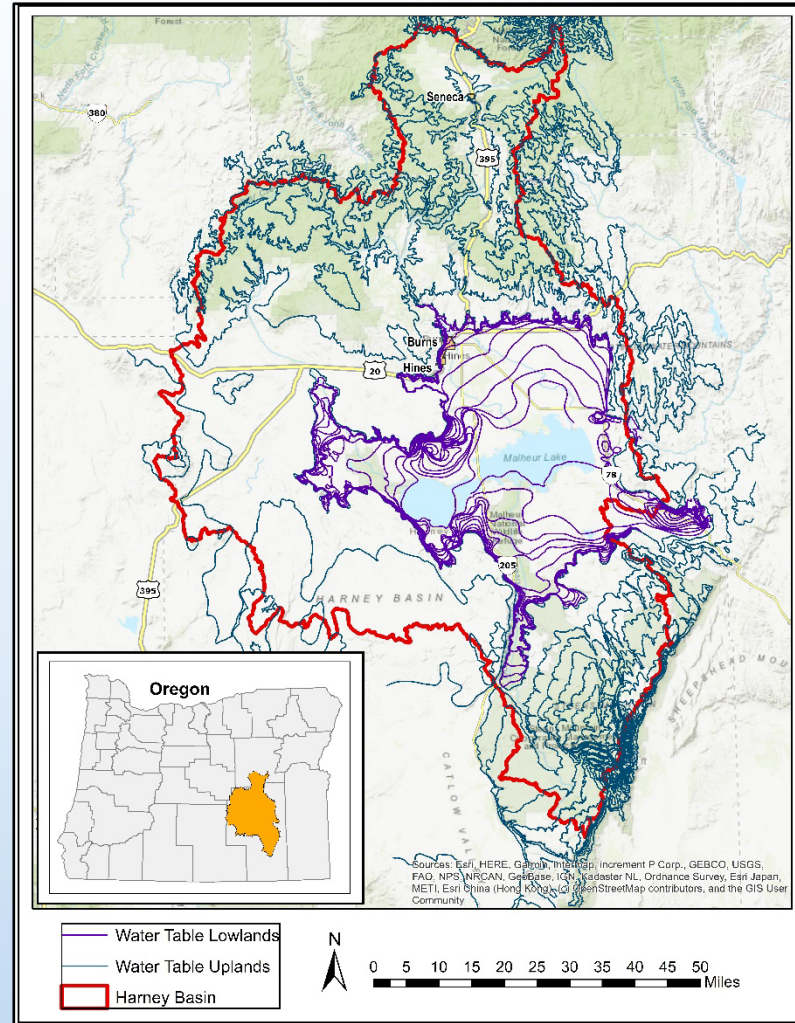
Study Groundwater Level Maps

Groundwater Level Contour Maps

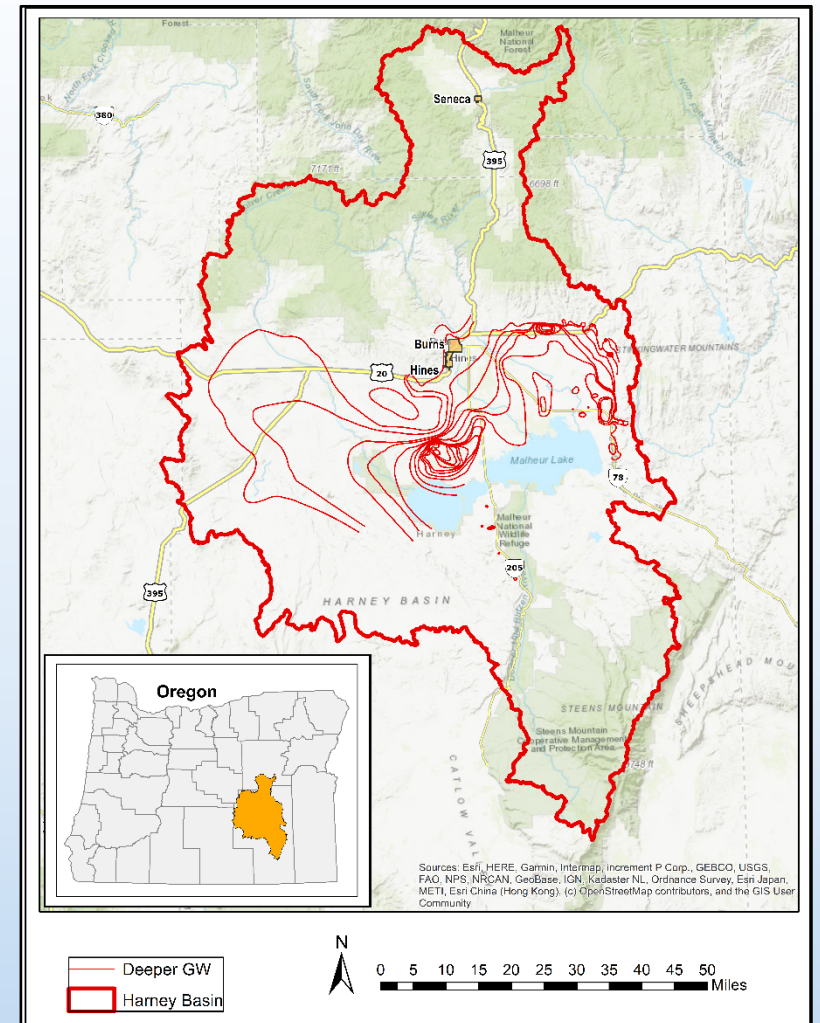
**Water Table Map
(groundwater top)
(wells <150-ft deep)
(uplands & lowlands)**

**Potentiometric
Surface Map
(groundwater at depth)
(wells >150-ft deep)
(lowlands only)**

Water-Table

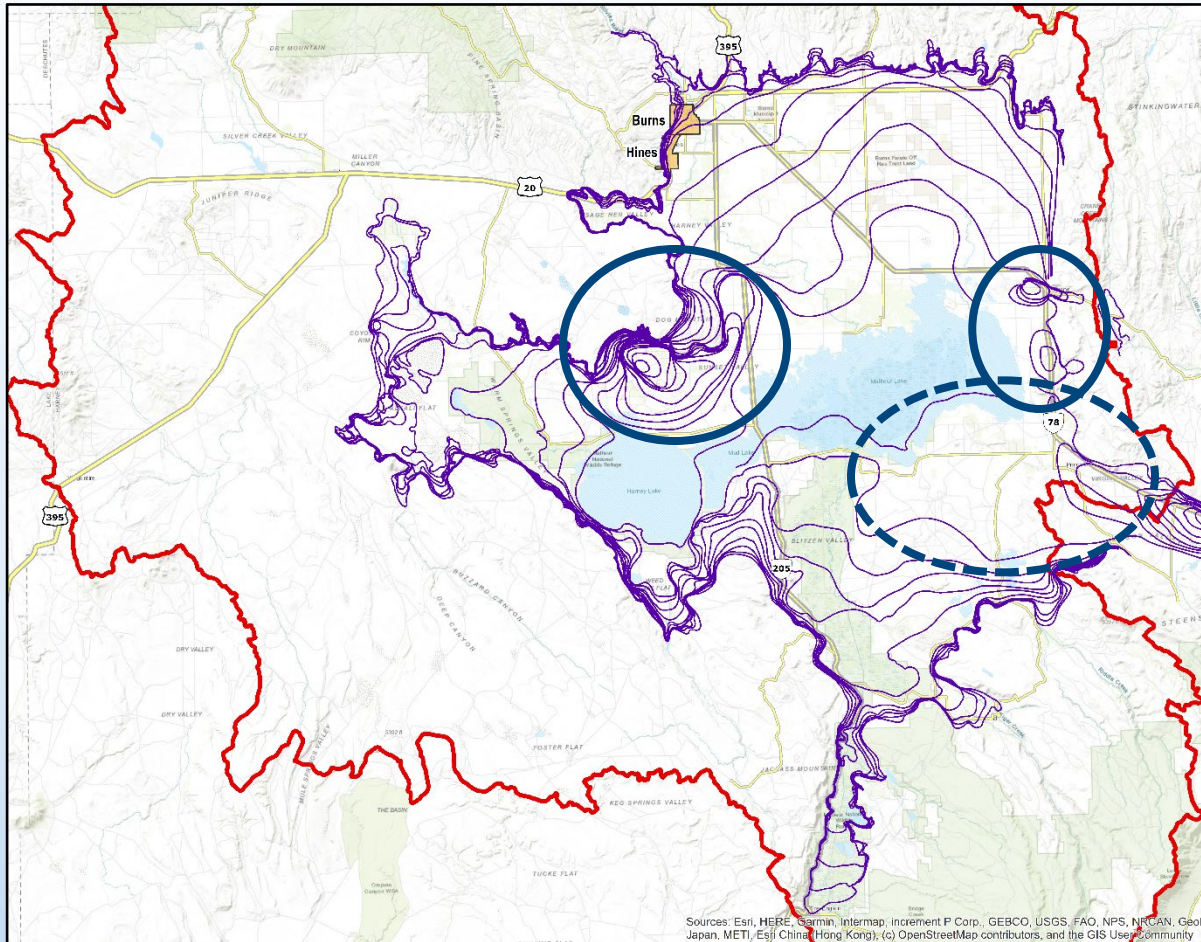


Potentiometric Surface

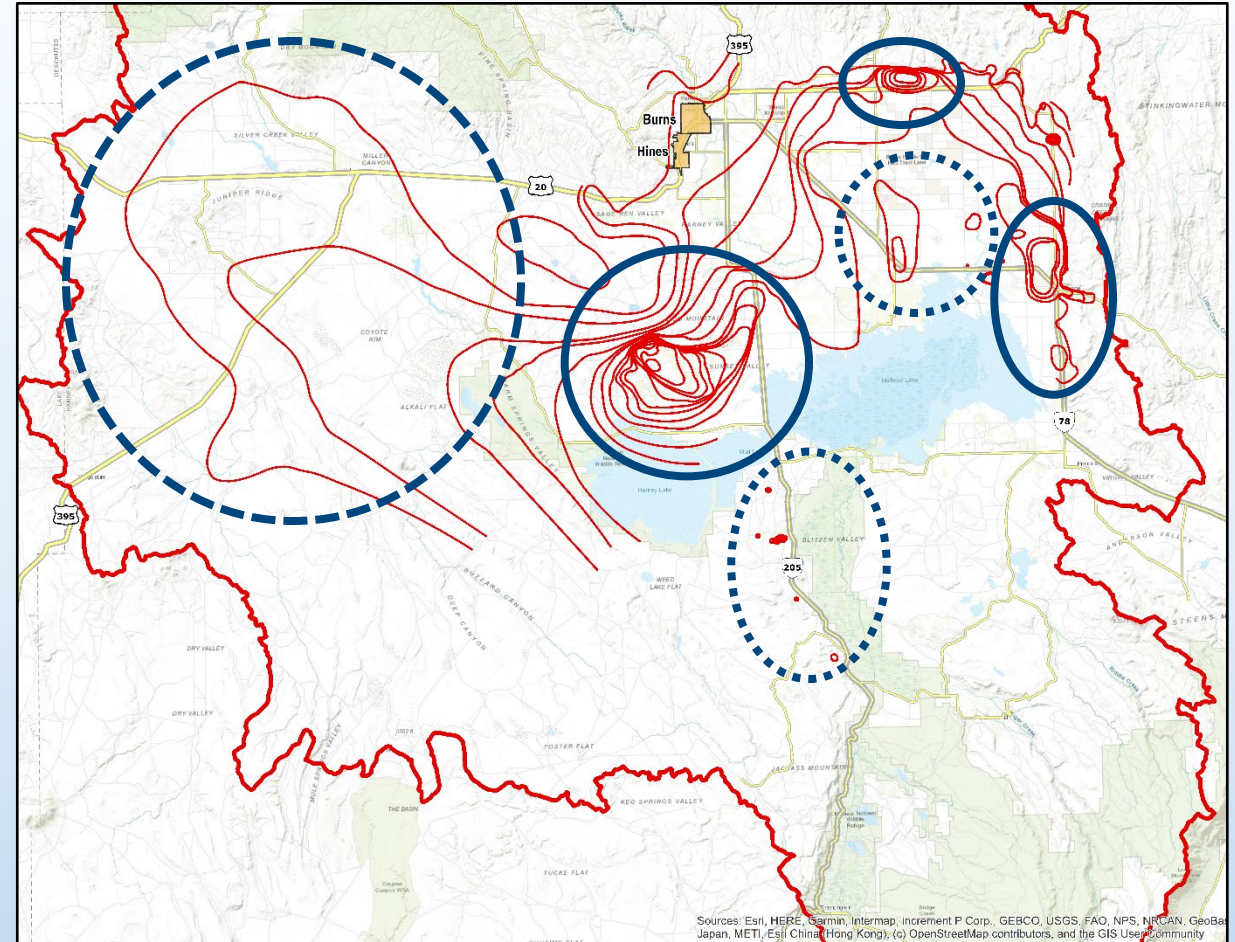


Harney Basin GW Response to Pumping

Water-Table (wells <150-ft total depth)



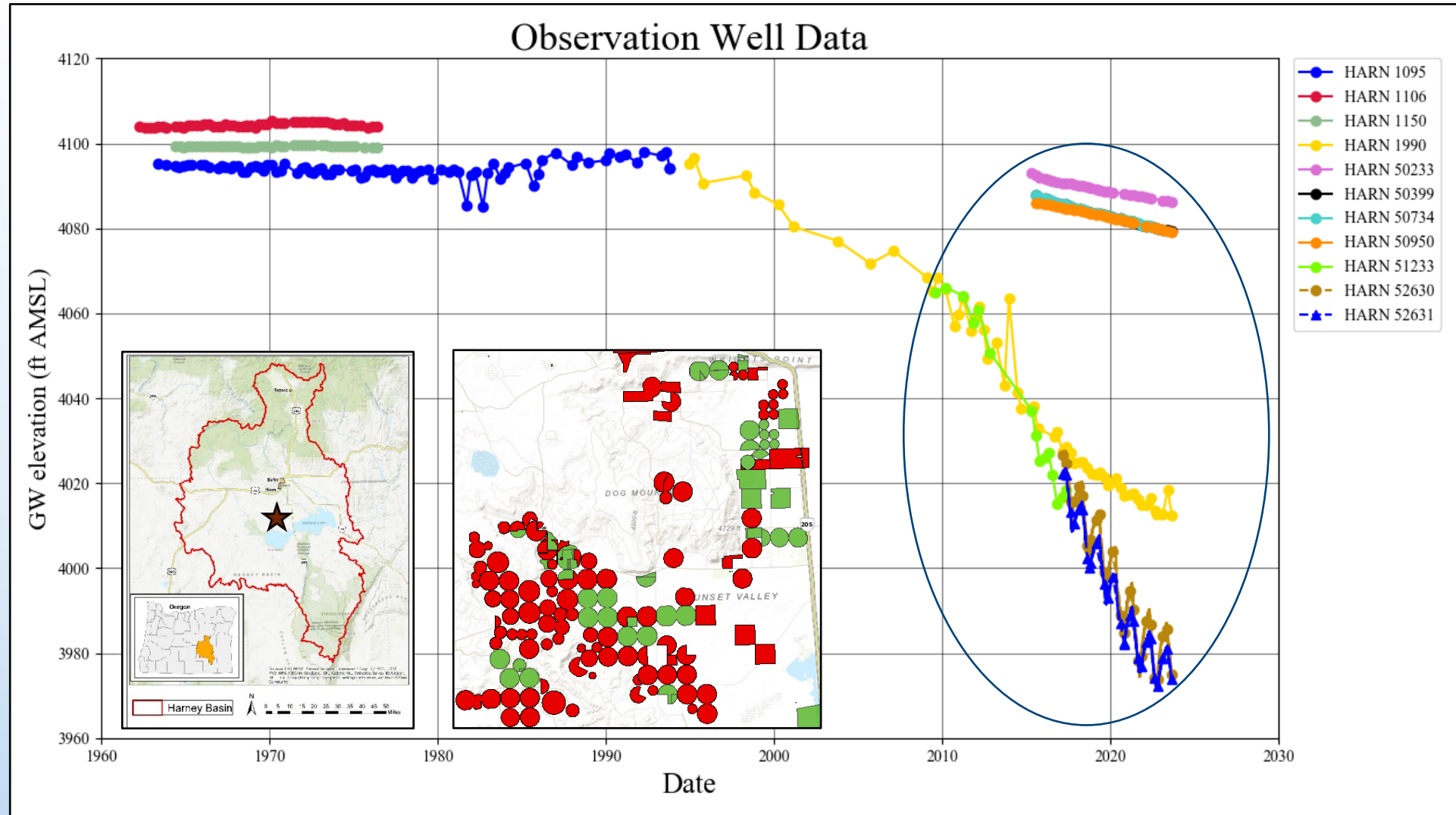
Potentiometric Surface (wells >150-ft total depth)



Harney Basin GW Response to Pumping

Groundwater
Development
&
Groundwater
Level Response

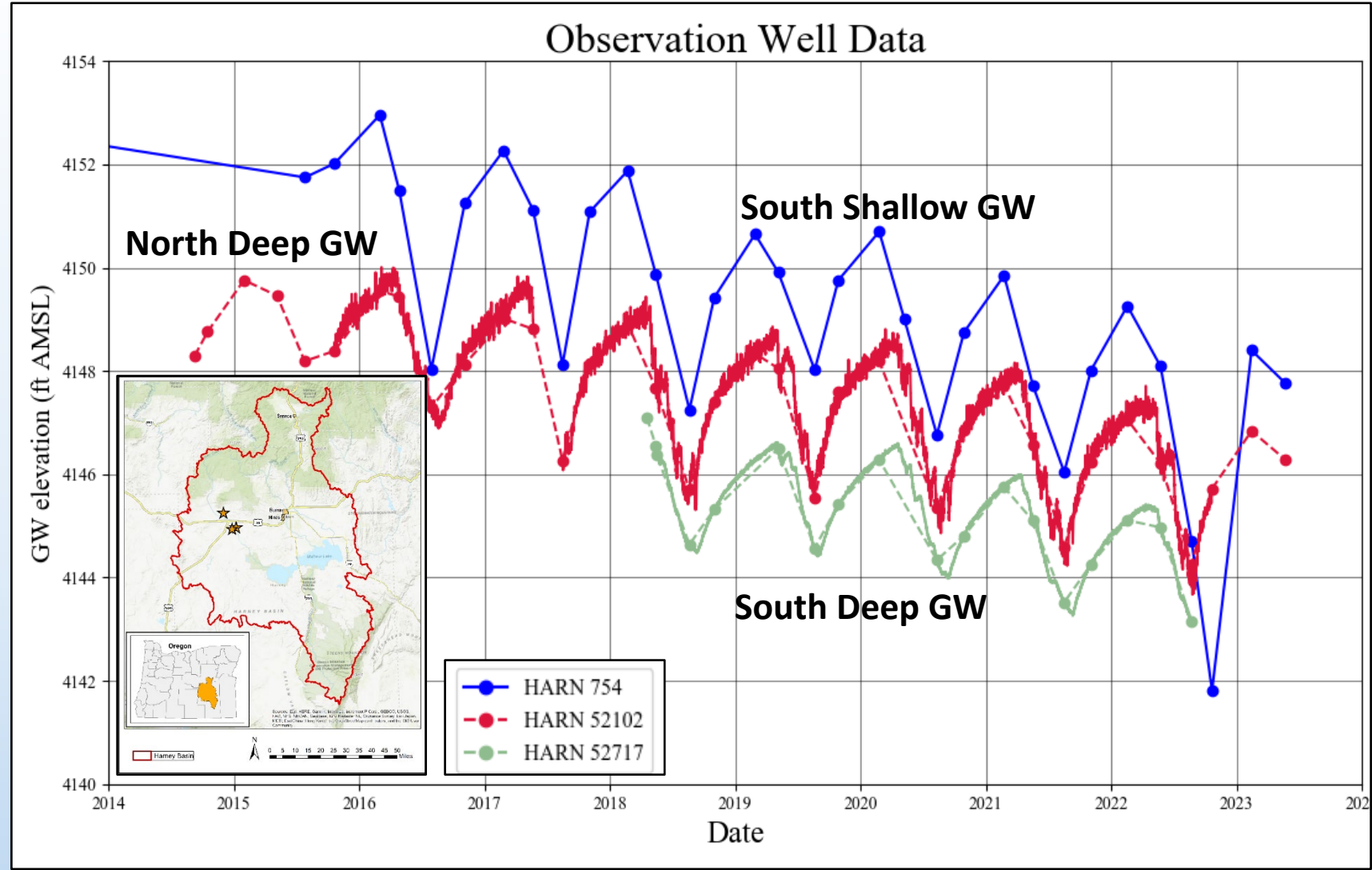
Weaver Springs
Vicinity
Cone of Depression
Example



Harney Basin GW Response to Pumping

**Groundwater
Development
&
Groundwater
Level Response**

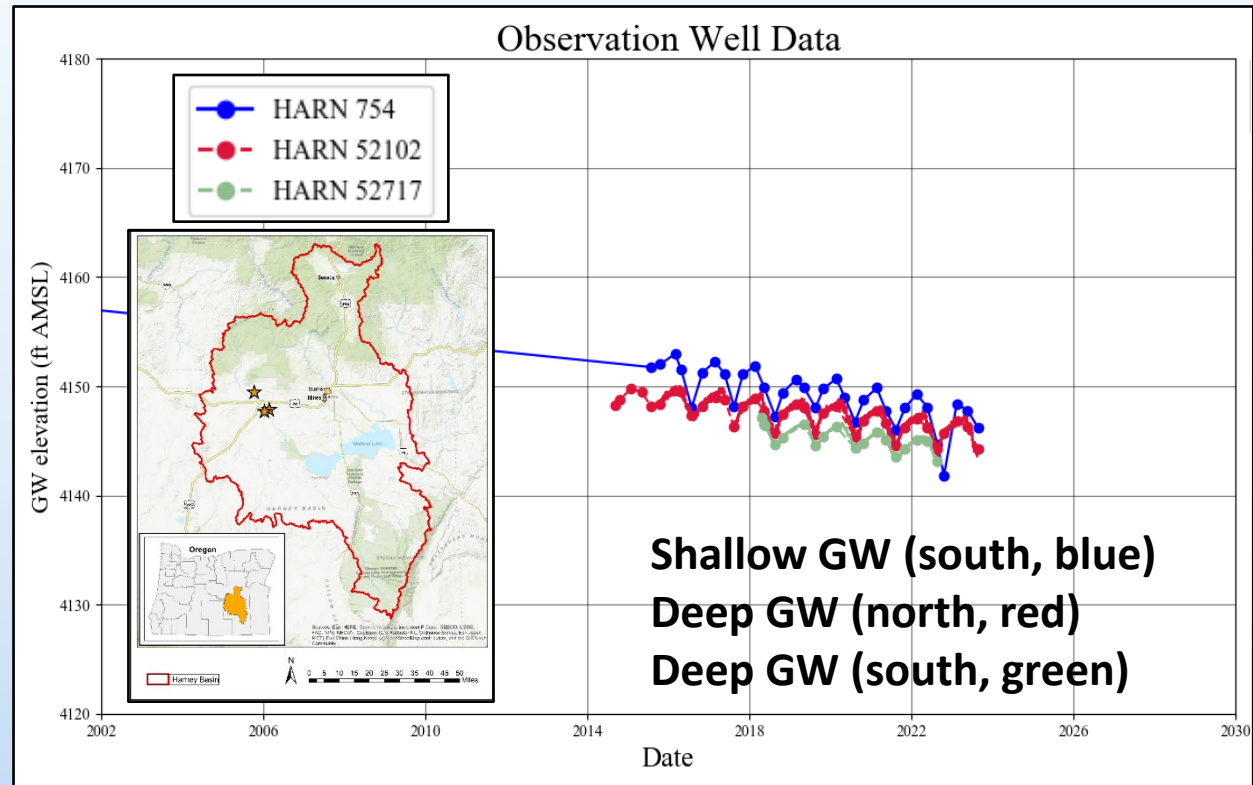
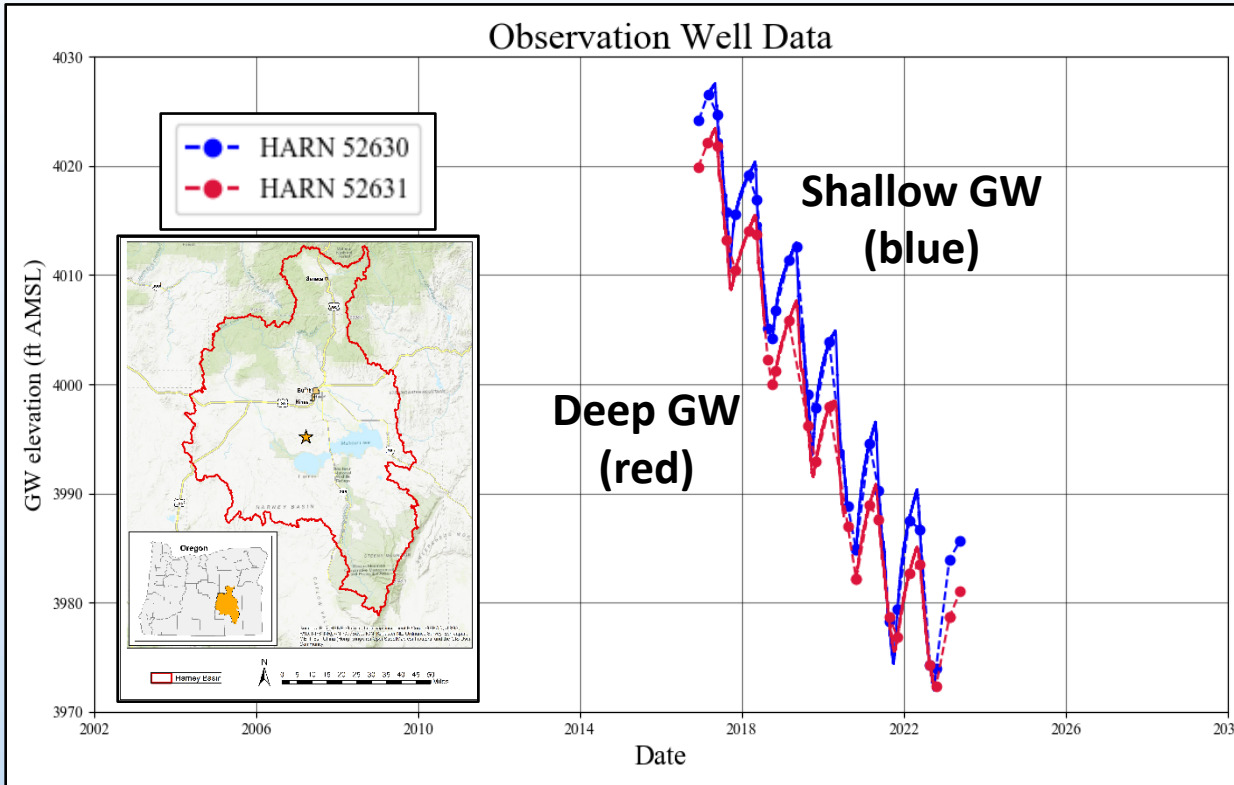
**Riley Vicinity
Flat Gradient Area
Example**



Harney Basin GW Response to Pumping

Cone of Depression Decline Weaver Springs (well pair)

Flat Gradient Area Decline Riley Vicinity Wells



Harney Basin GW Response to Pumping

Lawen (well pair)

Crane Vicinity (nearby wells)

