OREGON
WATER RESOURCES DEPARTMENT

Groundwater Allocation Rulemaking Update

Deschutes Basin Water Collaborative Working Group

January 26, 2024

Background

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Key Groundwater Concepts

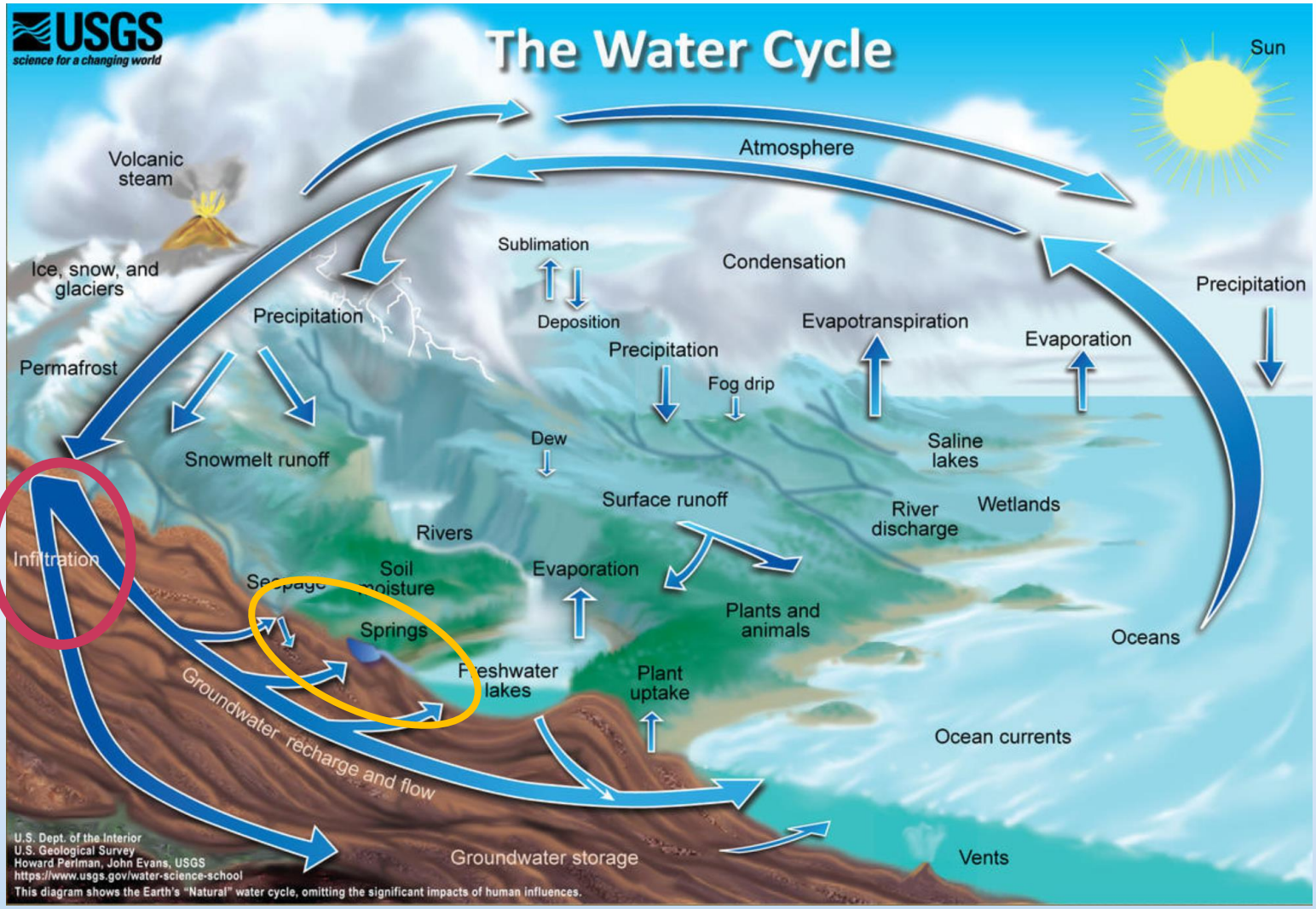

Figure Source: USGS (https://www.usgs.gov/special-topics/water-science-school/science/fundamentals-water-cycle)

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Groundwater & Surface Water Are Hydraulically Connected

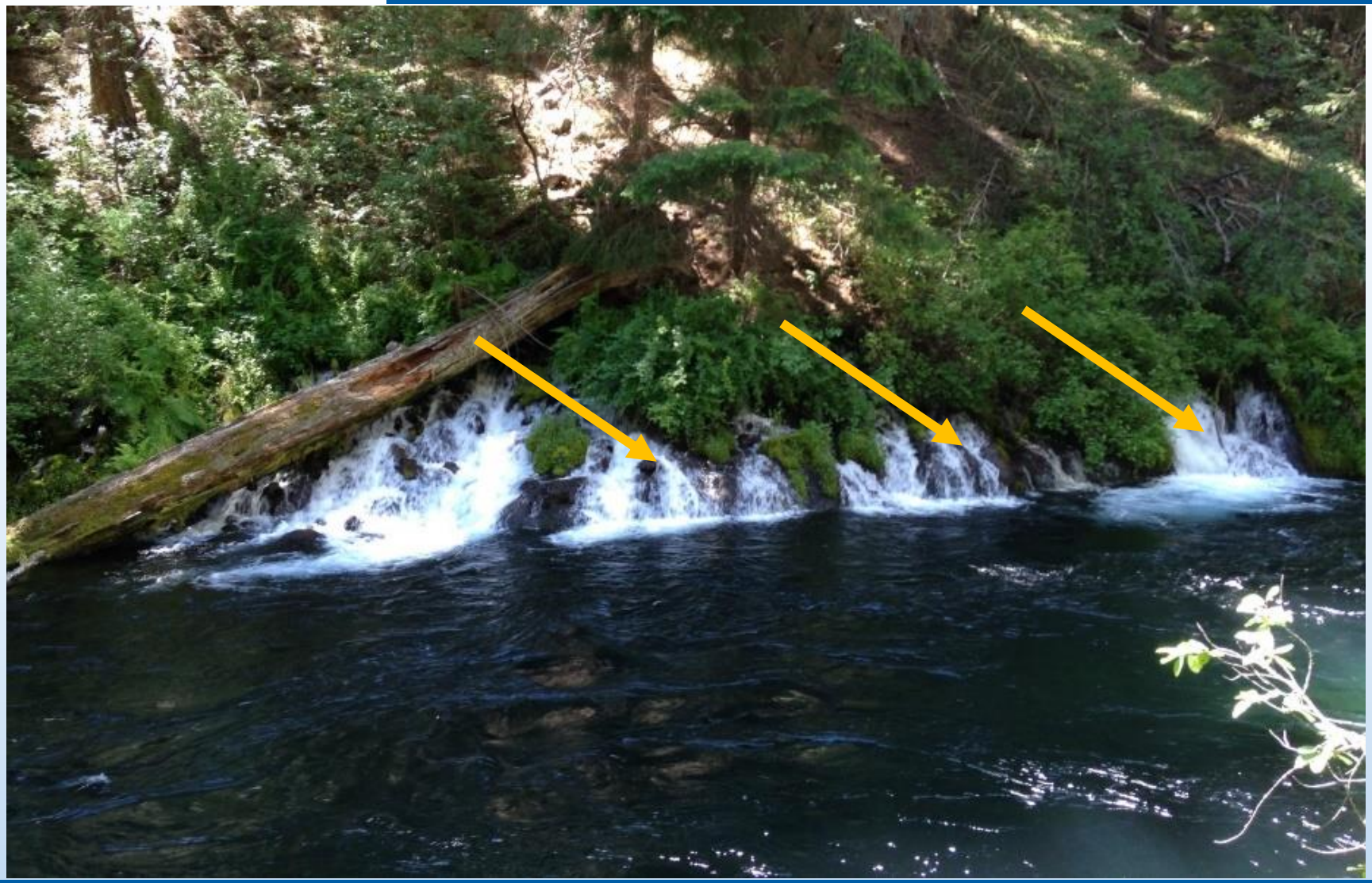

Photo: OWRD, Unnamed spring discharging to the Metolius River

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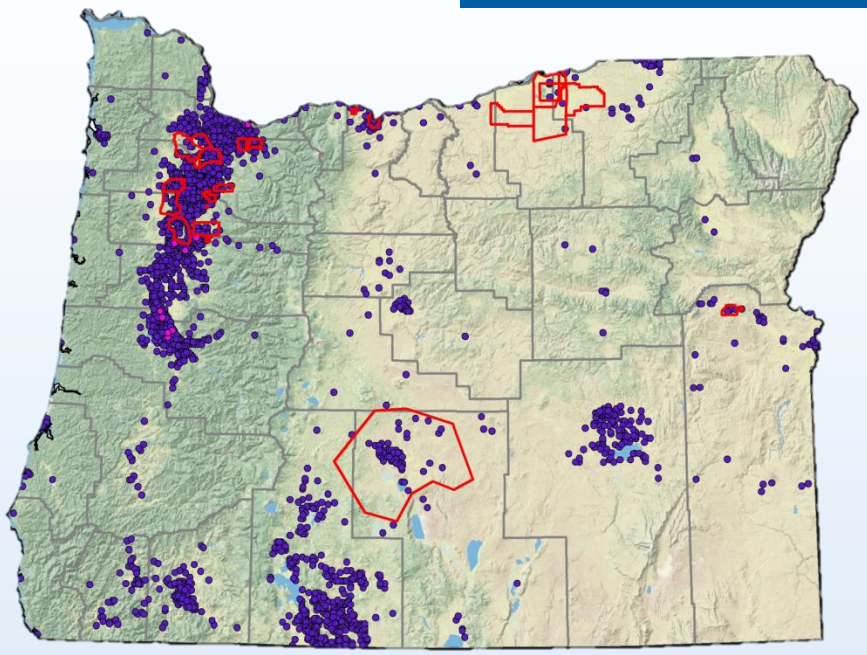
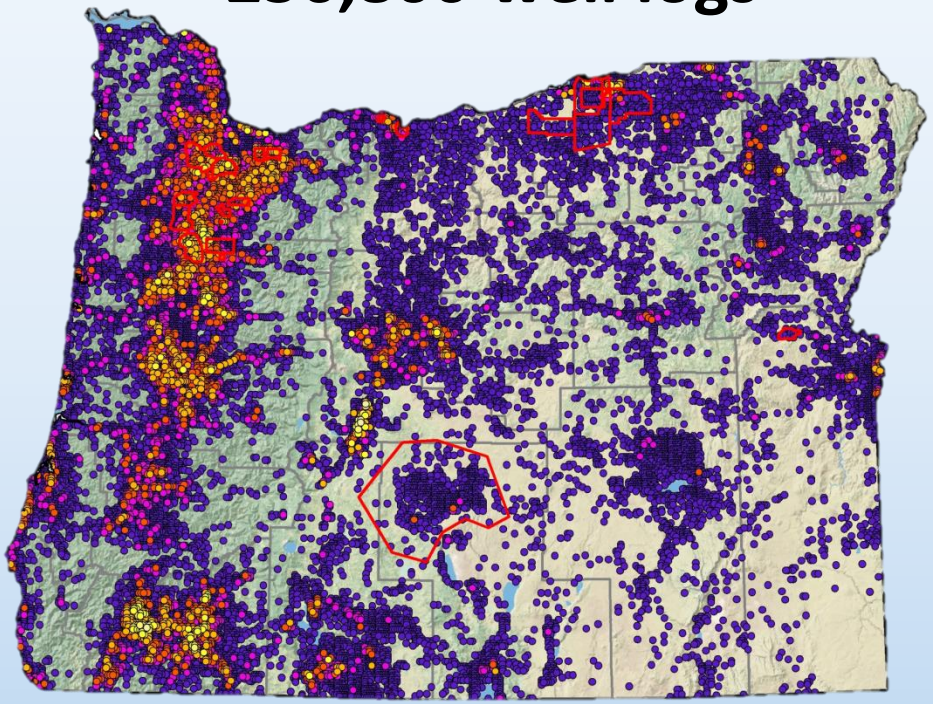
Groundwater Use Since 1955



1955
4,660 well logs

2016
256,800 well logs



Density of Water Well Logs per 640 Acres

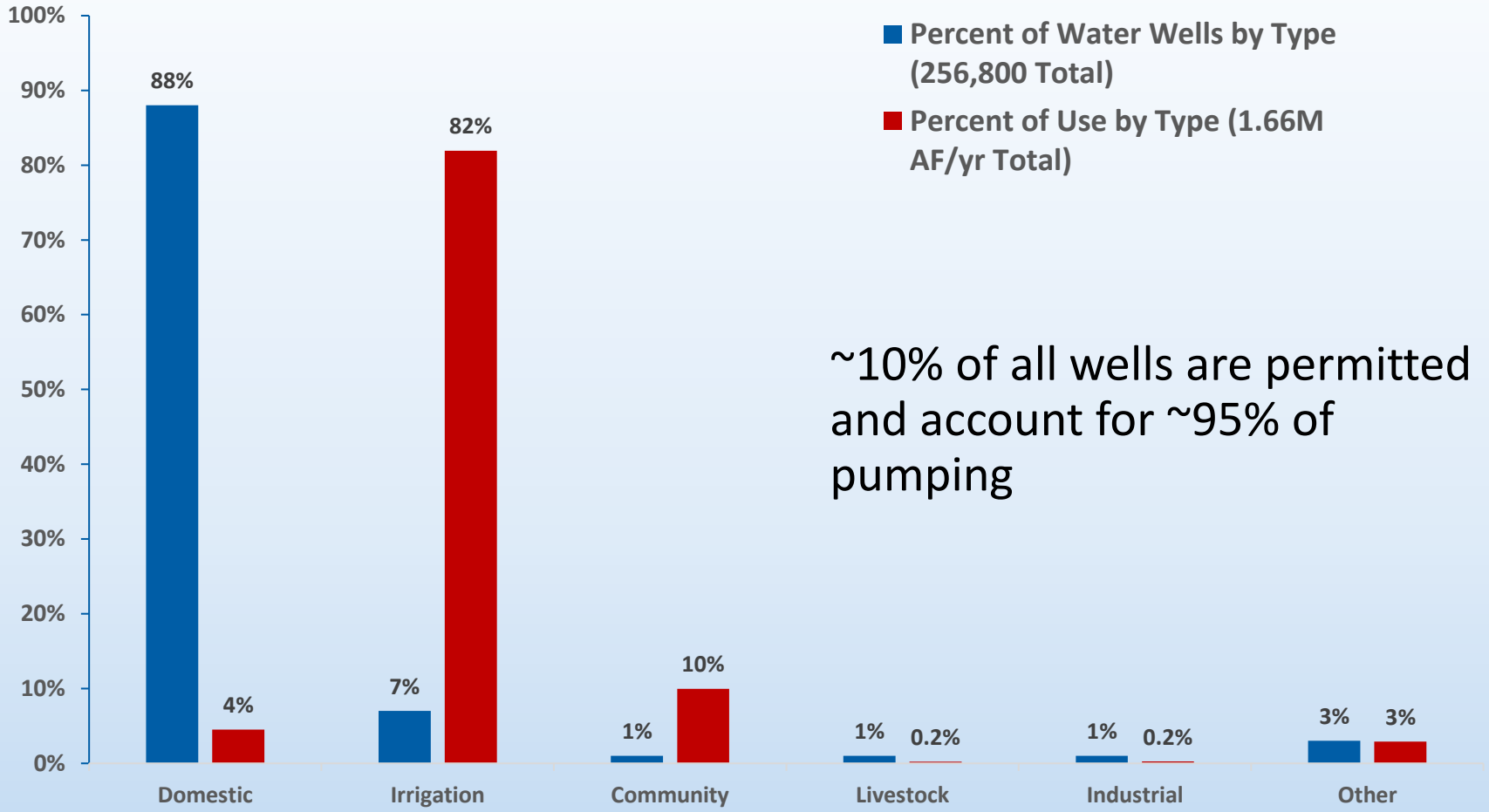
1 - 16	(<= 1 well / 40 acres)
17 - 32	(<= 1 well / 20 acres)
33 - 64	(<= 1 well / 10 acres)
65 - 128	(<= 1 well / 5 acres)
129 - 256	(<= 1 well / 2.5 acres)
257 - 320	(<= 1 well / 2.0 acres)
>320	(<= 1 well / 1.0 acres)

Counties

Ground Water Restricted Areas

Source: OWRD

Groundwater Use by Percent & Type



~10% of all wells are permitted and account for ~95% of pumping

Sources: Use from USGS (Dieter and others, 2018, Estimated use of water in the United States in 2015: Circular 1441, 65 p., https://dx.doi.org/10.3133/cir1441); Well type from OWRD

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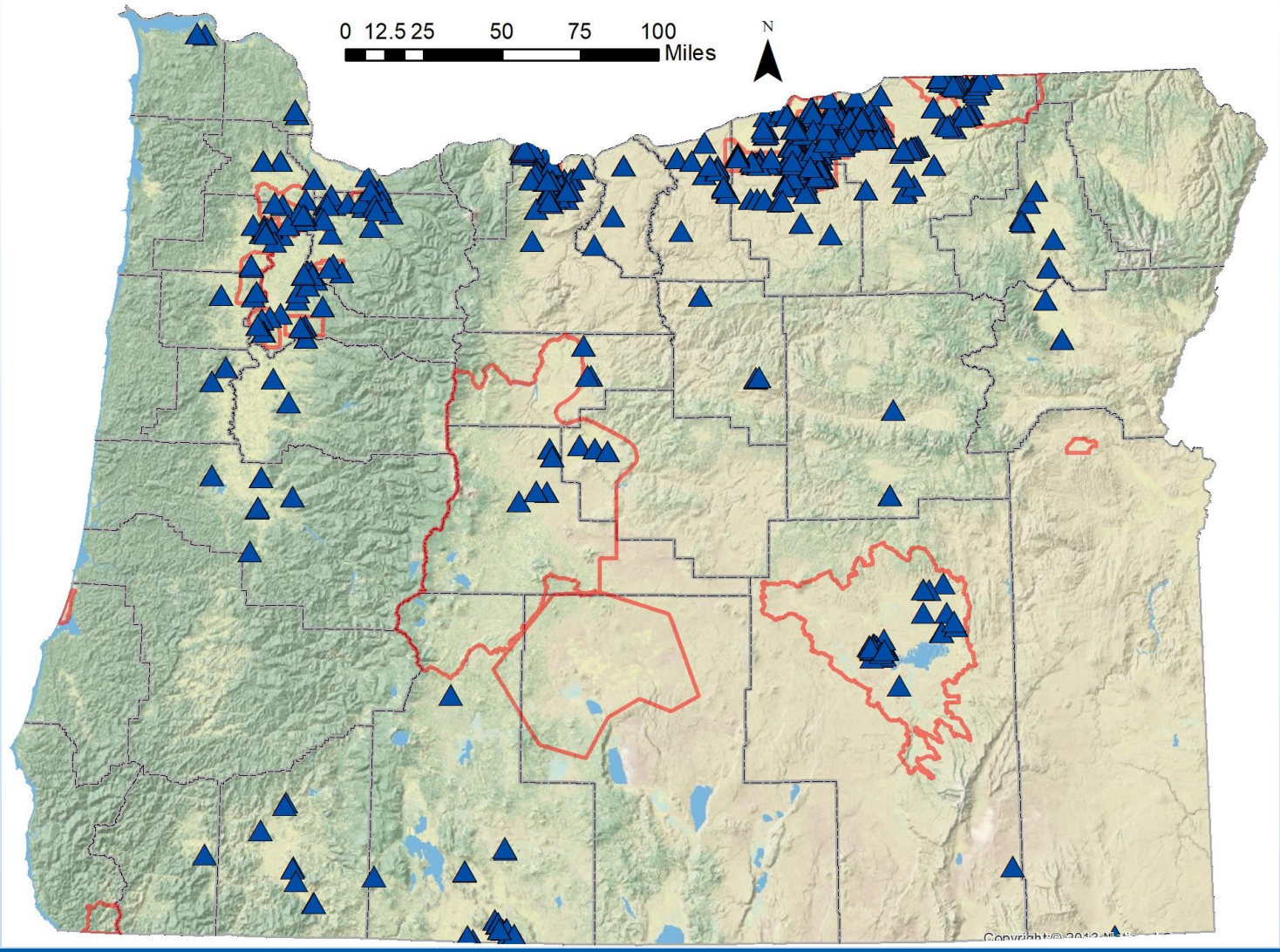
Groundwater Levels – Declines > 50 feet



Source: OWRD

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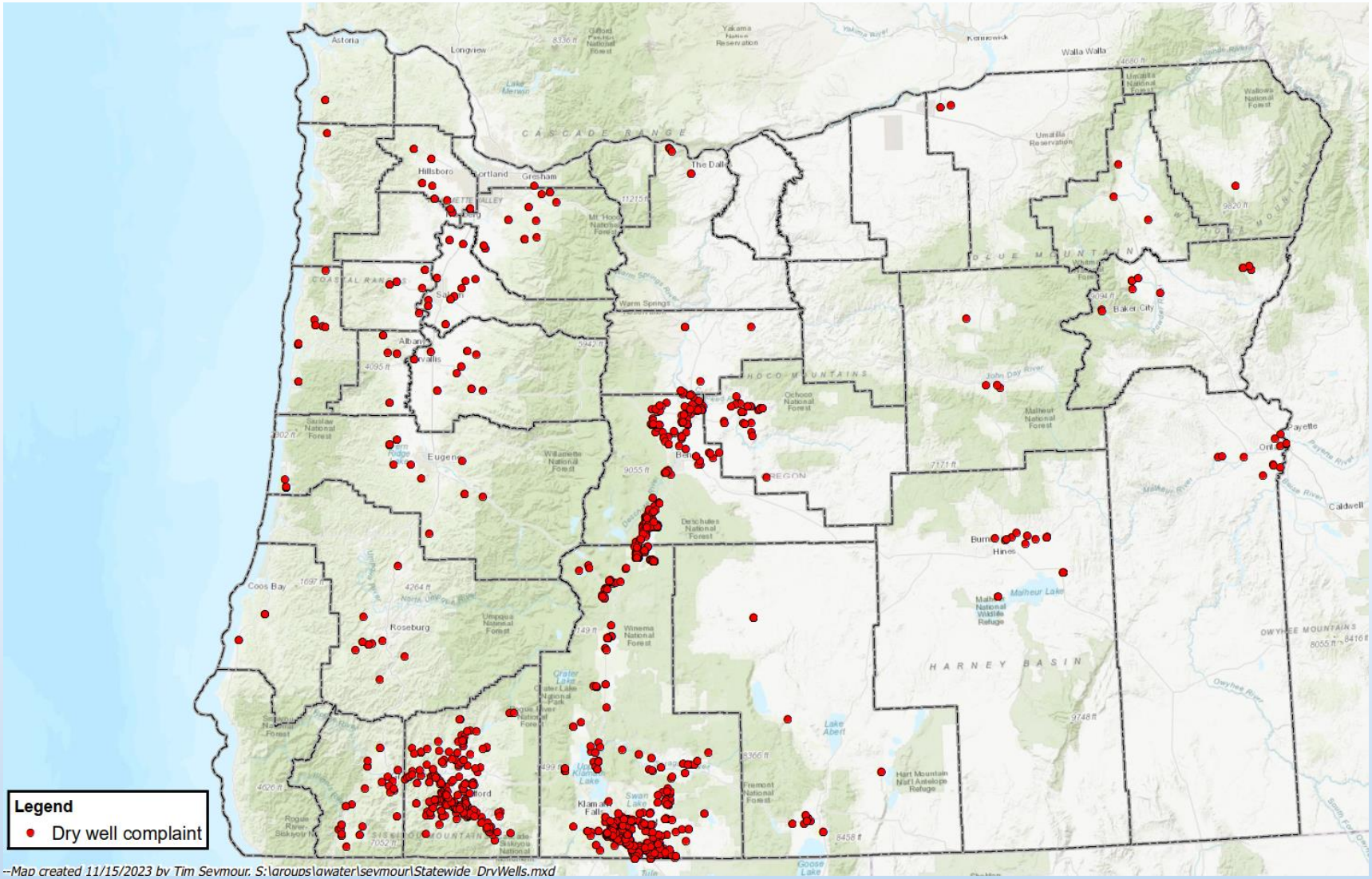
1,200 Dry Well Reports Since 7/2021



Source: OWRD

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Impacts of Groundwater Over-Allocation

- Declining groundwater levels
- Drying domestic wells
- Increased pumping costs/ deeper wells
- Depleted stream flows
- Water quality deterioration
- Curtailment of existing water rights
- Uncertainty over future water availability

Photo: Crooked River, nearly dry

Rulemaking

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Objective

Update groundwater allocation rules to be more sustainable and protective of existing water right holders, both instream and out-of-stream.

Photo: OWRD, Hibbard Spring, Harney Basin

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Exempt Groundwater Uses

"Exempt Uses" (ORS 537.545) remain exempt under proposed rules:

- 15,000 gallons per day (gpd) single or group domestic
- 5,000 gpd industrial or commercial
- Stockwater
- Irrigation up to one-half acre of lawn or non-commercial garden
- 3 other seldom-used exemptions

Statutory Framework

ORS 537.621(2)(a), the "four-part test":

- Proposed use is allowed within basin
- Water is available
- Existing rights will not be injured
- Complies with rules of the Water Resources Commission

ORS 537.621(2)(b), other public interest criteria also apply

Photo: OWRD, well pumping to irrigation ditch in the Klamath Basin

"Water is Available" - Current

Current Rules:

Requested source is available if not over-allocated:

- Allocate up to full annual recharge volume
- Avoid short-term, acute impacts to surface water

Reference: OAR 690-008, -009, -300, -400

"Water is Available" - Proposed

Current Rules:

Requested source is available if not over-allocated:

- Allocate up to full annual recharge volume
- Avoid short-term, acute impacts to surface water

Proposed Rules:

Requested source is available only if:

(1) Groundwater Levels are Reasonably Stable (defined in Division 8)

(2) Hydraulically connected surface water is available for appropriation—No Substantial Interference (defined in Division 8; determination described in Division 9)

Reference: OAR 690-008, -009, -300, -400; https://www.oregon.gov/owrd/programs/GWWL/GW/Pages/Groundwater-Rulemaking.aspx

Water is Available:
(1) New Definition – "Reasonably Stable Groundwater Level"

"Water is Available" - Proposed

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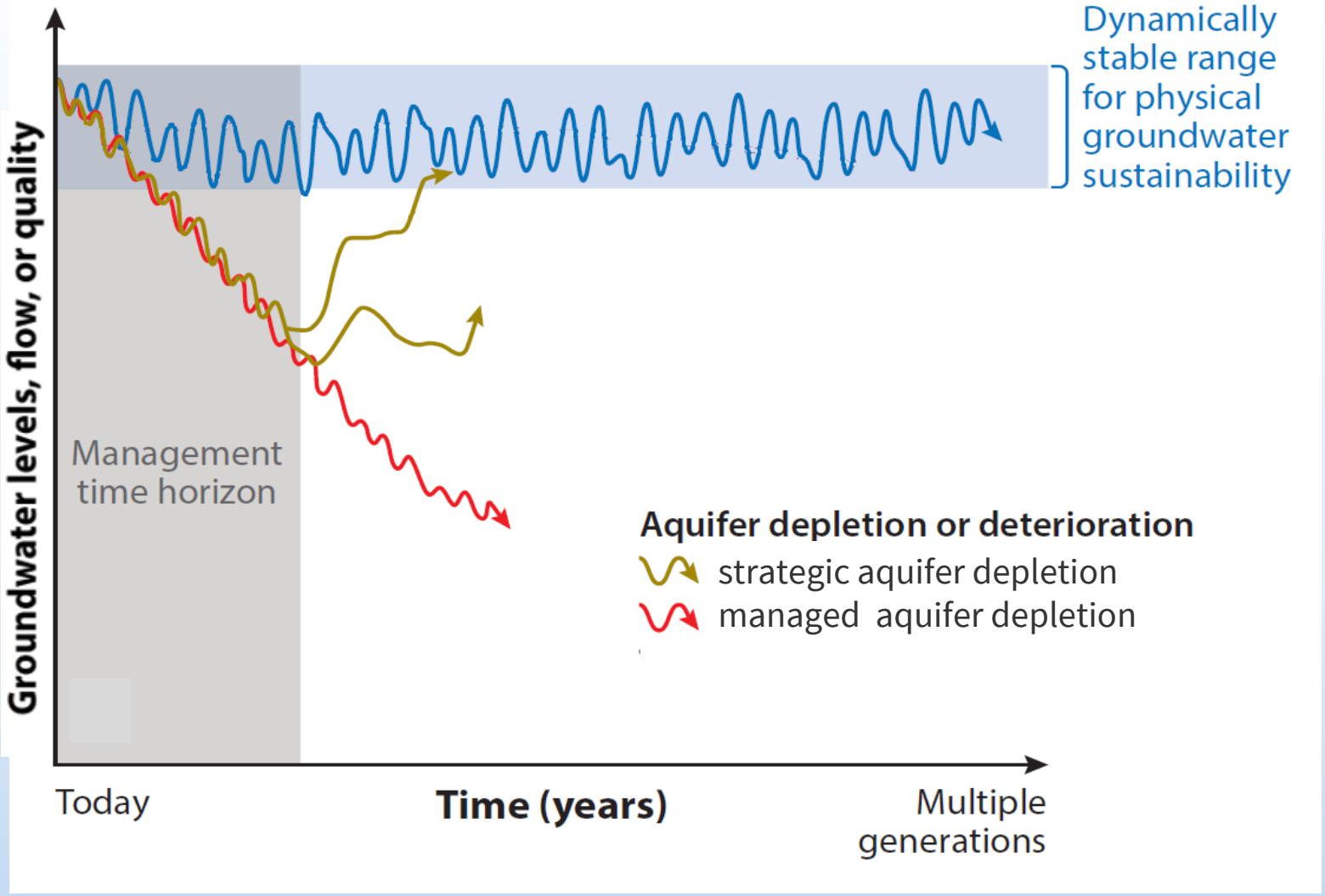
Groundwater Stability - Scientific Framework



Excerpted and modified from: Gleeson and others, 2020, Annual Review of Earth and Planetary Science, 48, 431-63 (Figure 2b). Available at: https://www.annualreviews.org/doi/10.1146/annurev-earth-071719-055251

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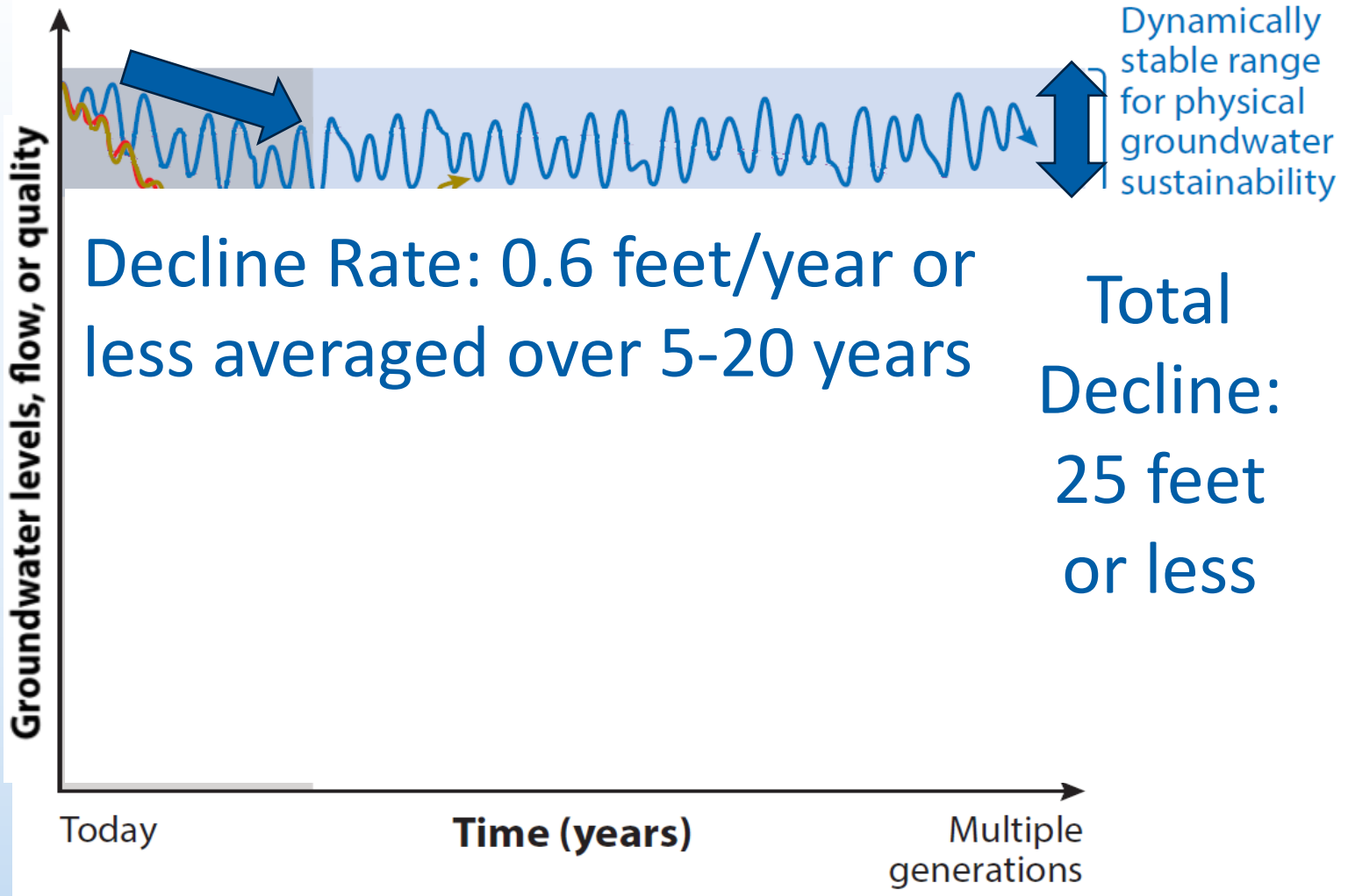
Defining Reasonably Stable Groundwater Levels



Decline Rate: 0.6 feet/year or less averaged over 5-20 years

Total Decline: 25 feet or less

Source: OWRD

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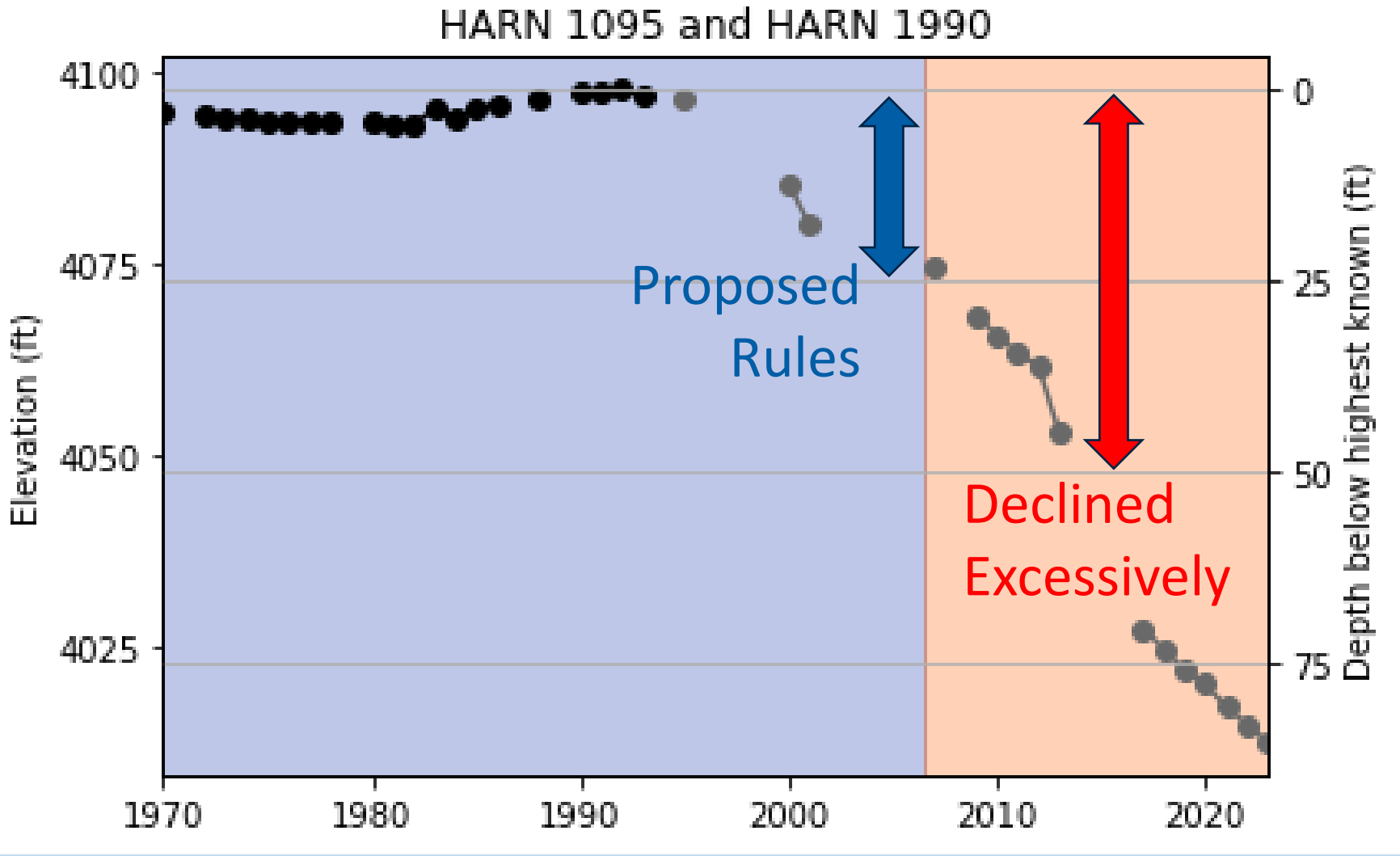
Reasonably Stable Water Levels - Harney Basin Example



Source: OWRD

Economic Impacts – Dry Wells

Domestic Dry Wells:

- 1,225 dry well complaints since July 2021
- Average cost to deepen a well is $26,500

State-Wide Risk (all water wells):

- Approximately 40,000 additional wells may go dry without the new rules
- Costs in the $100s of Millions

Source: OWRD

Water is Available:
(2) Updated Definition – PSI or "Potential for Substantial Interference"

"Water is Available" - Proposed Potential for Substantial Interference

Current Rules:
Requested source is available if not over-allocated:

- Allocate up to full annual recharge volume
- Avoid short-term, acute impacts to surface water

Proposed Rules:
Requested source is available only if:

- Groundwater Levels are Reasonably Stable (defined in Division 8)
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Groundwater & Surface Water Are Hydraulically Connected

Photo: OWRD, Eagle Creek in late-August

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Surface Water Availability

Figure Source: OWRD

Evaluating "Potential for Substantial Interference" (PSI)

Current rules

PSI determination (Division 9)

- Groundwater source hydraulically connected to surface water source
- PSI within < 1 mile, < 1 year
- Ignores long-term, cumulative impacts to over-appropriated surface

Substantial Interference (Division 8)

- Some surface water depletion criteria

Proposed rules

PSI determination (Division 9)

- Groundwater source hydraulically connected to surface water source
- PSI not limited by timing, distance, or magnitude of impact

Substantial Interference (Division 8)

- More surface water depletion criteria added

Reference: OAR 690-008, -009, -300, -400; https://www.oregon.gov/owrd/programs/GWWL/GW/Pages/Groundwater-Rulemaking.aspx

Public Input

Public Involvement to Date

Extensive Public Involvement

- Commission agenda item – since December 2021
- Groundwater Advisory Committee agenda item – since March 2022
- Public Outreach – 5 informational sessions in Fall 2022
- Rules Advisory Committee – 8 meetings since April 2023
- Additional outreach and meetings as requested

All rulemaking information and public meeting recordings are available on the Department's website.

Rules Advisory Committee (RAC) Roster

47th Ave Farms
Anderson Perry & Associates
Applied Economics, OSU
Association of Oregon Counties
Atmospheric Science, OSU
Central Oregon Cities Organization
Citizen-at-Large
Confederated Tribes of the Umatilla Indian Reservation
Deschutes River Conservancy
Dunn Carney/Oregon Cattlemen's Association
Environmental Law, Willamette University
Exempt Well User
Grown Rogue
GSI Water Solutions
Jefferson County Commission
Klamath Irrigation District
Klamath Tribes
League of Oregon Cities
Northwest Groundwater Services
Oregon Association of Nurseries
Oregon Environmental Council
Oregon Farm Bureau
Oregon Lakes Association
Oregon Water Resources Congress
Pacific Hydro-Geology, Inc.
Rancher
Seven Hills Winery
The Nature Conservancy
Verde
WaterWatch

Other Options for Meeting Future Water Supply Needs

Currently Available

- Conservation & Efficiency
- Aquifer Storage/ Aquifer Recharge
- Reuse
- Purchase/Transfer of Water Rights

May require additional rulemaking/ statutory authority

- Market-based approaches
- Mitigation programs
- Implementation of basin/regional planning

Schedule

RAC Meetings #1-8

Input on Draft Rules; Input on Draft Statement of Need, Racial Equity Impacts, Economic & Fiscal Impacts

April 2023 - January 2024

Notice of Proposed Rulemaking/

Start of ~90-day Public Comment Period

March 1, 2024

Public Hearings

April, May 2024

Last Day of Public Comment Period

May 31, 2024

Review Public Comments

Revise Draft Rules as needed; Develop WRC Proposal

June/ July/ Aug 2024

WRC Decision on Proposed Rule Adoption

September 12/13, 2024

Effective Date of Final Rule

By October 1, 2024

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Public Comments

Written Comments accepted

March 1 – May 31, 2024

Informational Sessions (5:30-6:30 pm) & Public Hearings (7:00-9:00 pm)

April 4, Bend
April 18, La Grande
May 16, Central Point
May 21, Salem (Hybrid)

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Thank you! Questions?

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