Everybody Drinks!
Evaluating Risks and Build Water System Resiliency Through Source Water Protection

2026 PNWS-AWWA Annual Conference~ Tacoma, WA

Drinking Water Protection Program
DEQ State of Oregon

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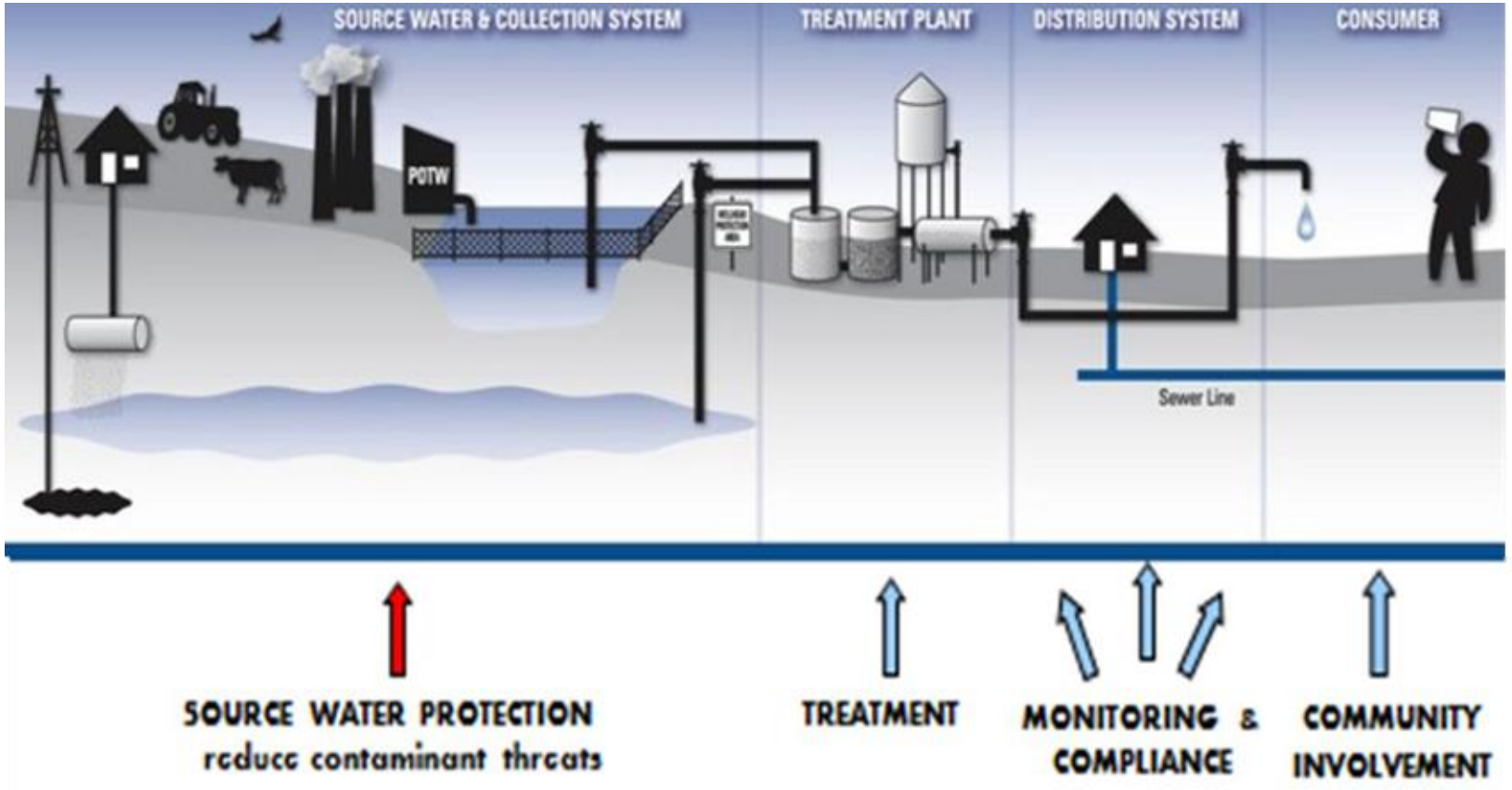


Topics

- Oregon's Drinking Water Source Protection program
- Drinking water risks and source water assessment - harmful algal blooms, land use pressures, and emerging contaminants
- Tools and strategies for protection - Partnerships, small water systems, multi-water system collaboratives, and land acquisition.
- Funding

Oregon's Drinking Water Source Protection Program

- An interagency program between OHA Drinking Water Services and DEQ's Water Quality Division
- Focused on watersheds and aquifers as the first 'barrier' in the multi-barrier approach to public health.
- **Ecosystems** are the first line of defense



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What is Source Water?



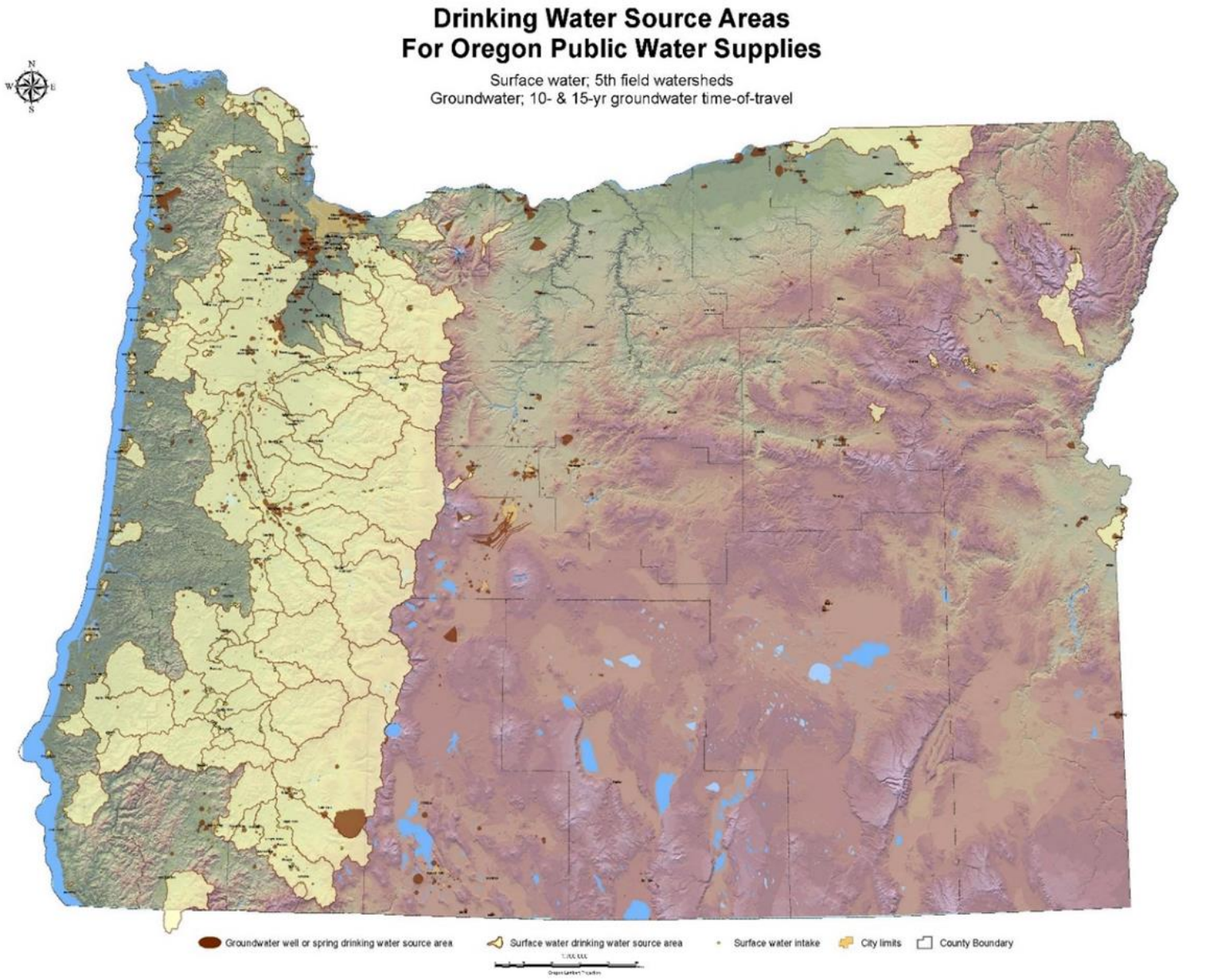
- Any type of surface water or groundwater feature from which we extract water for drinking water use
- Includes rivers, streams, lakes, springs, and groundwater aquifers

The Drinking Water Source Protection program supports **public** water systems throughout Oregon. Domestic or private well owners are not part of public water systems.

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Statewide Drinking Water Providers

- Over 2,500 public water systems serve 85% of Oregonians.
- PWS serve >25 people or 10 connections.
- ~160 community public water systems with surface water intakes (all areas in yellow)
- Smaller brown areas contribute to PWS groundwater drinking water wells



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Oregon's Drinking Water Source Protection Program



We work to reduce the risk of drinking water source contamination by

- Helping water systems to **identify risks** to drinking water **and strategies** to address and prevent contamination
- Providing data, including GIS data
- Advocating for consideration of drinking water with programs, agencies, and organizations
- Supporting partnerships with a focus on drinking water protection
- Providing information on funding resources
- And much more!

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Oregon's Source Water Protection Framework

- **Safe Drinking Water Act does NOT provide authorities to prevent pollution in source waters –**
  - SDWA regulates treatment and distribution of drinking water *after* surface water diversion or groundwater extraction
  - Water systems must meet SDWA standards regardless of Source Water Quality

- Source water **protection** is implemented under **Clean Water Act** authorities
  - If water meets Clean Water Act standards, conventional treatment should be adequate for SDWA requirements

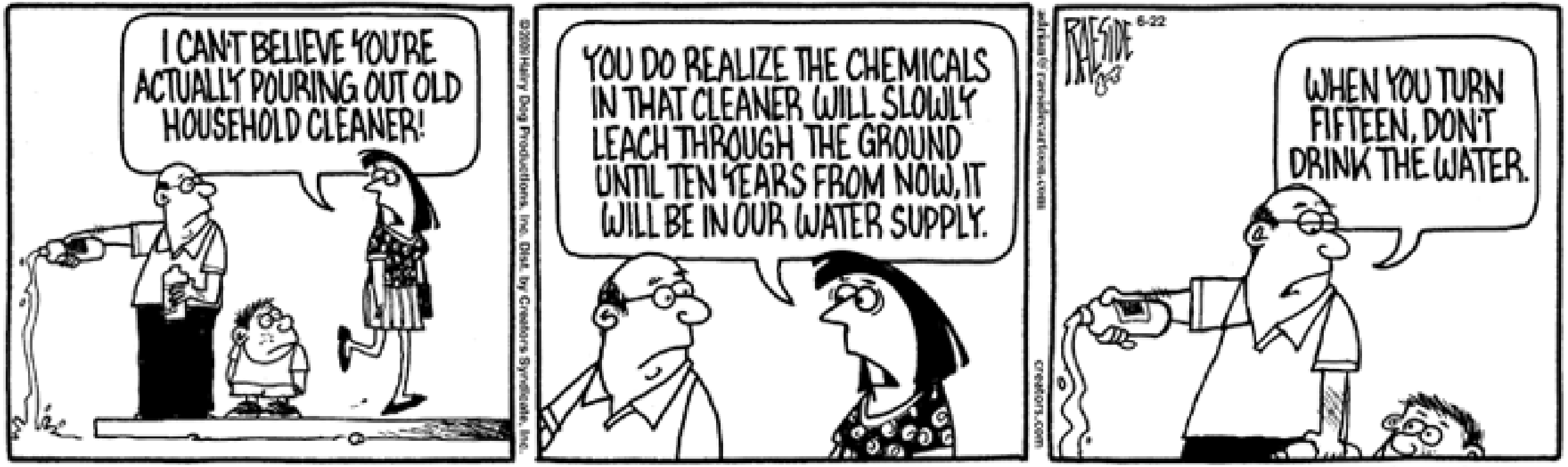




Drinking water risks and source water assessment

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Why protect source water?



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Why protect source water?

Cleaner raw water =

- Reliable drinking water
- Stronger public trust
- Reduced risk to public health from waterborne diseases and chemical contamination.
- Lower treatment costs and deferred or no need for complex treatment.
- Pollution “clean-up” is expensive -- on average 30 – 40x more costly than pollution prevention!



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Why protect source water?

- Financial cost – Investing in natural infrastructure and public awareness can increase system resilience and reduce the need for grey infrastructure
- Time cost – you can choose when to work on prevention, you won't be able to choose when to respond to contamination
- There is funding to help with this work!



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Source Water Assessment Reports

- Completed for Community & Non-Transient Non-Community public water systems
- Details on land use and ownership
- Maps of drinking water source areas and nearby water systems
- Potential contaminant sources (PCSs), locations, and risk levels
- Susceptibility Analysis
- Strategies and resources to help reduce risks and funding opportunities



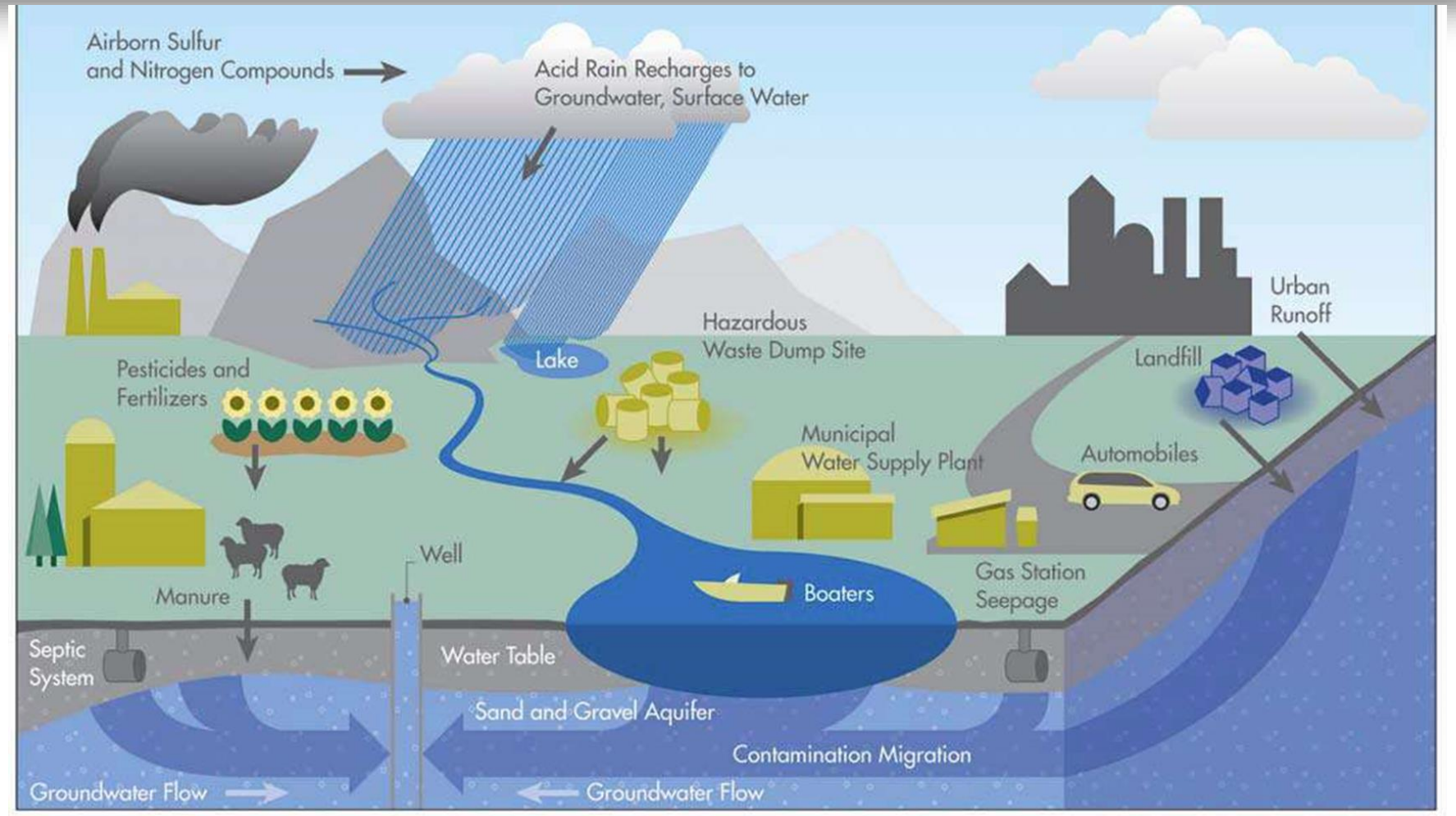
EPA United States Environmental Protection Agency

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Potential contaminant sources

Potential Contaminant Sources

Activities or contaminants that have the potential to affect drinking water quality. Can be point or nonpoint and due to human influence or natural conditions.

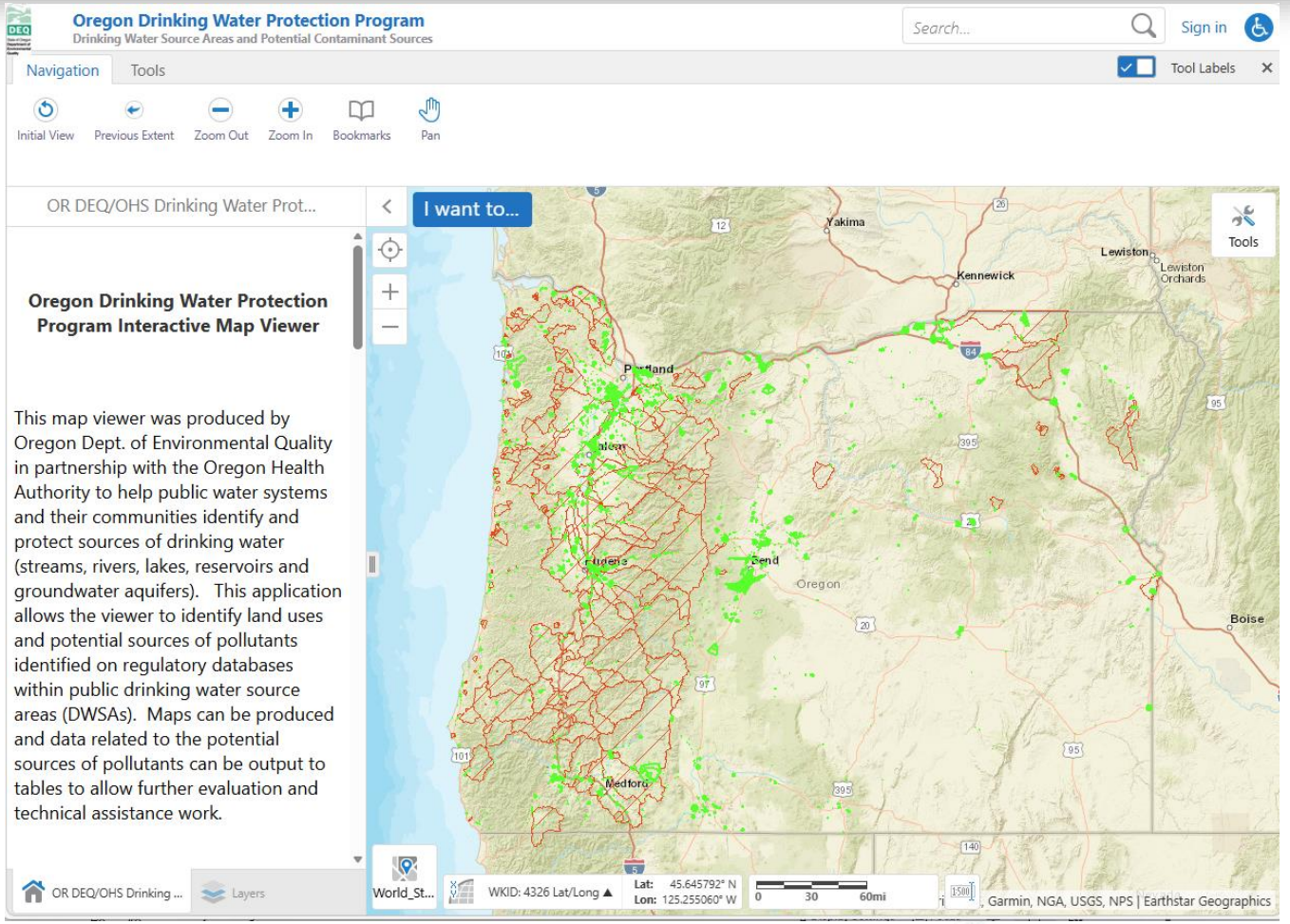


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Source Water Assessment Reports and Data

Accessible data

- Surface water reports are available online
- Groundwater reports are available to water systems upon request
- Interactive map includes drinking water source areas, potential contaminant source inventories, land use data



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Potential Risks from Land Uses

Agriculture

- Coordination with Oregon Dept. of Agriculture and Soil and Water Conservation Districts
- Drinking water input for Agricultural Water Quality Management Plans
- Coordination with NRCS National Water Quality Initiative Projects
  - 14 Planning Assessments funded to date
  - 4 Implementation phase projects
  - These Source water protection projects also help meet state Non-Point Source Pollution Recuction Goals



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Potential Risks from Land Uses

Forestry

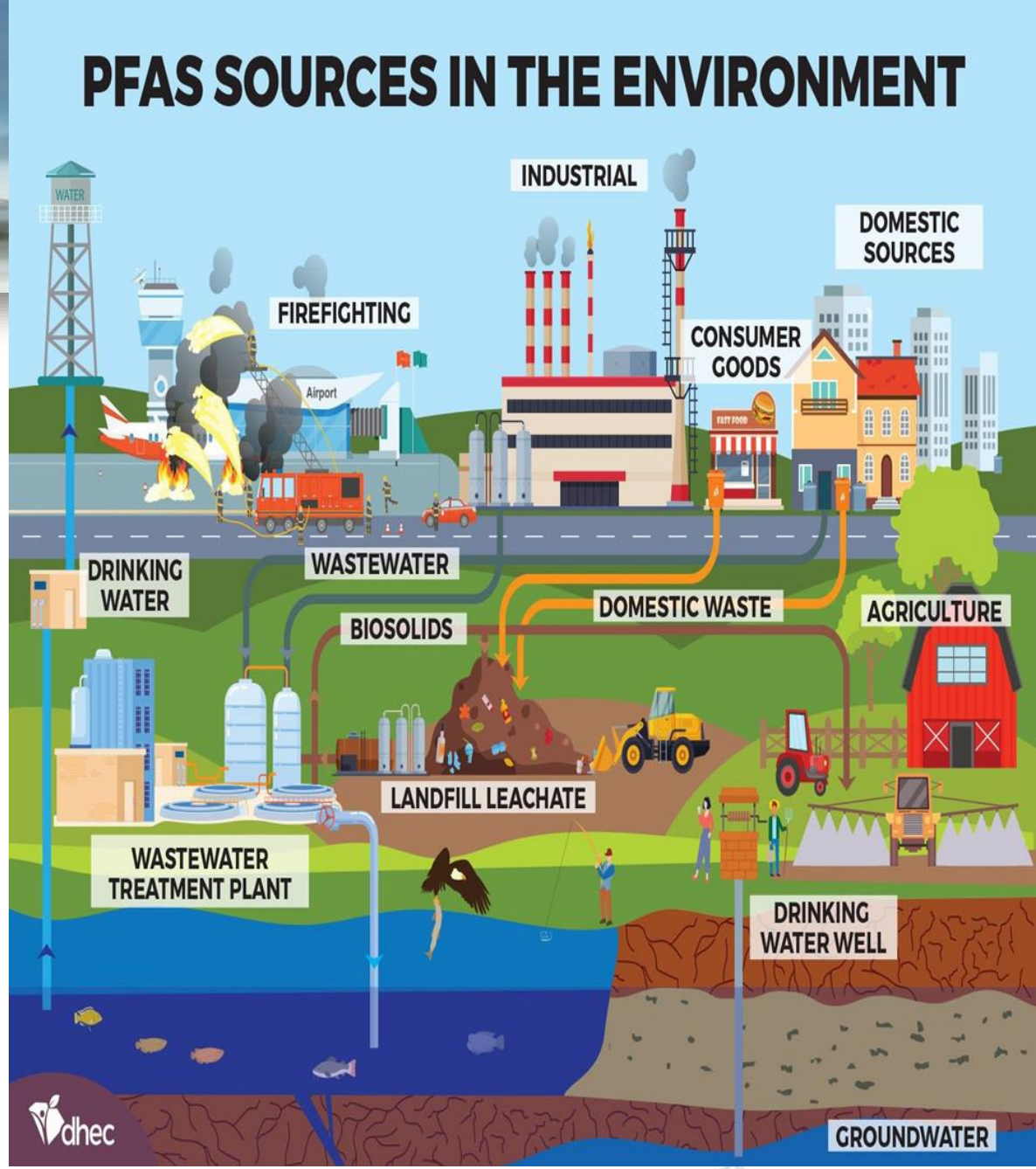
- Coordination with Oregon Department of Forestry on implementation of Private Forest Accords and State Habitat Conservation Plan
- Oregon Department of Forestry staff presenting at workshops and engaging with public water systems



PFAS

DEQ Actions

- Support OHA in sampling, data analysis and mapping
- Review of potential PFAS sources
- Coordination with DEQ Site Assessment and Cleanup program inc. Consult on Rules development for PFAS as a Hazardous Substance
- Pollution Prevention Resource Center strategic planning for source reduction in drinking water source areas
- DEQ PFAS Strategic Plan (June 2025)



HABs – Harmful Algal Blooms

- Annual review of susceptible drinking water sources
- Satellite data evaluation provides an early warning system
  - Prioritizes monitoring for advisories
- DEQ HABs Strategic Plan published
- Coordination on data collection for public advisories with Oregon Health Authority
- DEQ supports OHA's cyanotoxin PWS raw water sampling





Tools and strategies for drinking water source protection

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Water Systems Need Partners

- Public Water Systems have limited resources
- Watershed restoration/enhancement or groundwater protection not usually their specialty
- Source water protection not required
- Much of source area is outside of water system jurisdiction



Partnerships

Land Conservation Partners

- Soil and Water Conservation Districts (SWCDs), Watershed Councils, Land Trusts, Non-Governmental Organizations (NGOs)
- Non-regulatory, voluntary approach to encourage adoption of best practices - Similar geographic priority areas and pollutants of concern
- What's good for fish and aquatic habitat is good for drinking water (and vice versa!)



Cross-Program and Cross Agency Coordination

- Partner with State and Federal Agencies
- Addressing Agriculture, Forestry, Water Quality Permits, Load Allocations (TMDLs), Non-Point Source Program, Wildfire, OWEB funding, DOGAMI mapping, coordination with OEM



Funding organizations

Technical Assistance to Public Water Systems

- Prioritize underserved communities for technical assistance
- Providing input to Agency and Statewide Initiatives:
  - Coordination with Clean Water and Drinking Water SRFs on DAC criteria
  - Input to Oregon EJ Council on drinking water layers available
- As of June 30, 2025, a total of 398 community water systems (42% of Oregon's community water systems) have "substantially implemented" a strategy to protect their drinking water. This represents ~87% of Oregonians served by community PWSs.
- Significant focus on small systems outreach



Small Systems Outreach Project

- 70% of CWSs serve ≤500 people, mostly groundwater
- Face risks from contaminants but lack resources & funding
- Initial efforts focused on Manufactured Home Communities with vulnerable low-income & senior populations

DEQ's Outreach Effort

- Building Community water system capacity through education, technical support & relationship building
- Developed outreach materials (inc. translated versions) and implementation checklist
- Contacted all 233 small water systems that are identified as Manufactured Home Communities



Small Systems Outreach Project



Key Results (As of June 30, 2025)

- Site visits – significant technical assistance to support substantial implementation actions
  - Listening to drinking water concerns
  - Reviewing Source Water Assessment Reports
  - Identifying potential contaminant sources
  - Discussing protection strategies
- Implementation Progress:
  - 59 small CWSs initiated protection activities.
  - 37 MHC CWSs reached substantial implementation.
- Focused outreach for DWSPF grants, limited capacity to apply and do the work
- More info on DEQ's Small Water Systems Webpage including a new story map

bitly

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Supporting Regional PWS Projects and Partnerships



Multiple public water systems, all using the same surface water source or are in the same geographic area, working with local partners to develop and implement strategies to protect drinking water

- Clackamas River Water Providers – 5 intakes
- Molalla River Drinking Water Protection -Cities of Molalla, Canby, and Colton
- North Santiam Drinking Water Protection
- McKenzie River Drinking Water Protection Work – EWEB, SUB, and Rainbow WD
- Rogue Drinking Water Partnership:
- Umpqua Basin Efforts
- Mid-coast Water Planning Partnership
- John Day Basin Place Based Planning Partnership
- Mt. Hood Corridor - Small Systems Workshop in June 2025

Enhancing Resiliency through Land Conservation

Program special initiative in 2023-2026

- Increasingly important to make long term land use changes due to climate change, population growth, & aging infrastructure
- Focus area partially due to availability of Federal Infrastructure Investment and Jobs Act funds and opportunity for generational changes



City of Reedsport Watershed – August 2024

Enhancing Resiliency through Land Conservation

Multi-pronged approach starting with Coastal Workshops and Watershed Tours

- Agenda driven by community needs – focus on providing opportunities for drinking water providers to share successes and challenges and access resources
- October 2023, February 2024, October 2024 with next workshop planned for Fall 2026
- Workshops in Oregon's North, Mid and South Coast regions
- Multiple PWSs, commissioners and city staff/administrators, TA partner organizations, agency staff, regional community/ economic development organizations, funding agencies, tribal government representatives
- Presentations and resources: DEQ's Source Water Protection Workshops webpage







Coordinating with Clean Water Act Partners

Water Quality Assessments & Impaired Waters

- Consider listing parameters relevant to drinking water supply
- Example: Oregon's turbidity impairments for drinking water beneficial use.
- Public water systems can support assessments by sharing raw water data

Water Quality Complaints & Compliance

- Complaints help identify gaps in protection within Drinking Water Source Areas
- Coordinate with CWA agencies and support complaint response and follow-up
- Information sharing strengthens protection efforts

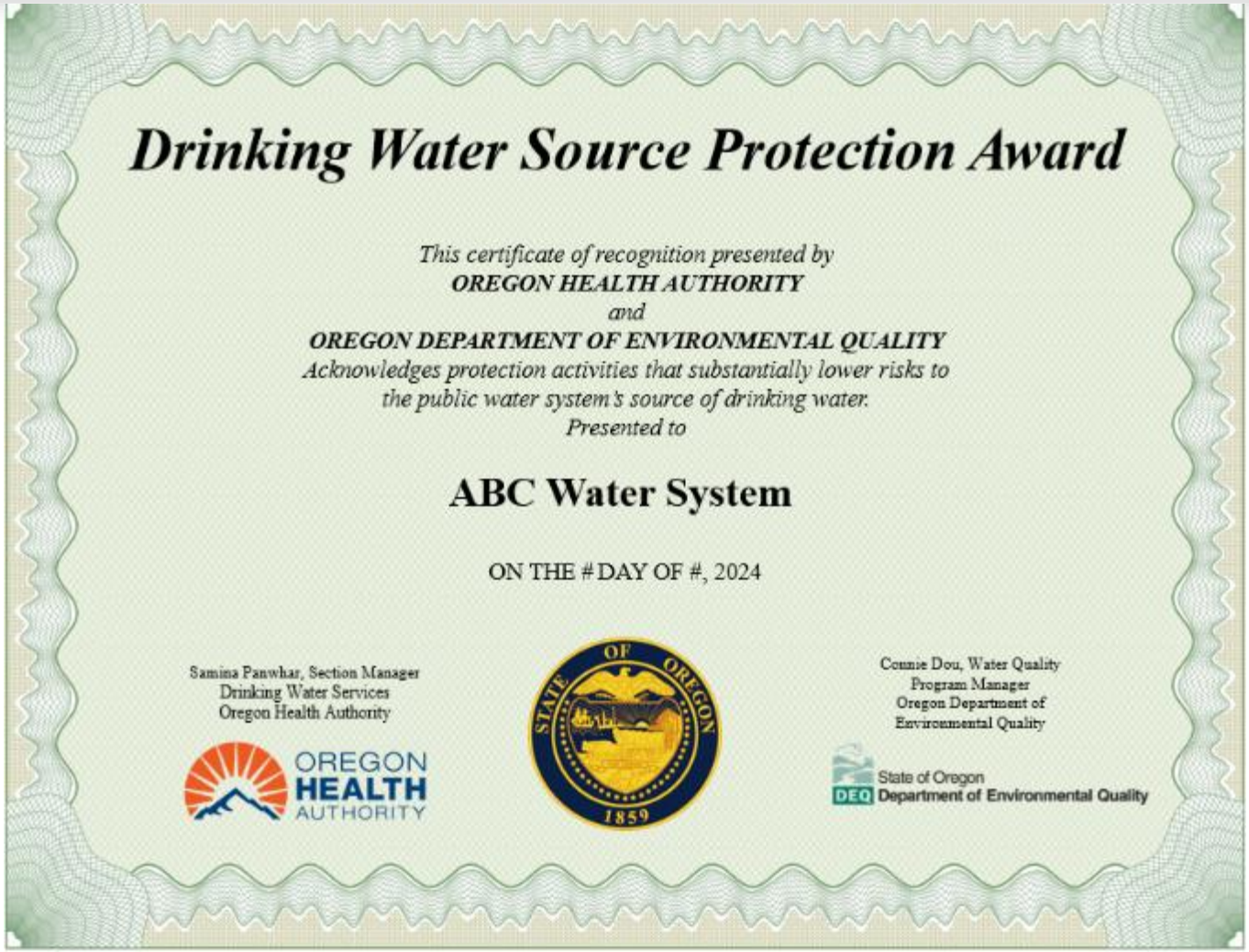
Water Quality Permitting (NPDES, WPCF)

- Ensure drinking water beneficial uses are considered
- Notification to water systems of spills, releases, and bypasses required in permits

Source Water Protection Awards

Goals:

- Publicly recognize drinking water risk reduction activities and encourage continued action
- Increase awareness of source water protection
- Incentivize public water systems to learn about source water protection and take protective actions



Drinking Water Source Protection Award

This certificate of recognition presented by
OREGON HEALTH AUTHORITY
and
OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY
Acknowledges protection activities that substantially lower risks to the public water system's source of drinking water.
Presented to

ABC Water System

ON THE # DAY OF #, 2024

Samina Panwhar, Section Manager
Drinking Water Services
Oregon Health Authority

OREGON HEALTH AUTHORITY

STATE OF OREGON 1859

Connie Dou, Water Quality
Program Manager
Oregon Department of
Environmental Quality

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DataOnline: Source Water Protection Status

Oregon Public Health
Drinking Water Data Online

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Introduction :: Data Search Options :: Water System Search :: DWS Home :: DWS Rules :: Quick Data Links

PWS ID: 01200 ---- CHATEAU MOBILE HOME PARK OR41

Drinking Water Source Protection

Drinking water source protection refers to actions that protect raw water sources (such as rivers, streams, lakes, reservoirs, springs, and groundwater) that provide water to public water system wells, springs, and intakes. OHA encourages water systems and their communities to implement best management practices to reduce risks of contamination to their drinking water sources. By addressing potential and current concerns at the source, water systems can reduce the risk of exposing consumers to contaminated water, as well as reduce treatment costs. Implementing source protection might also help avoid or defer the need for complex treatment in the future.

Current Status for CHATEAU MOBILE HOME PARK

- State Approved Drinking Water Source Protection Plan: **No**
- Source Water Assessment: **Yes**
- Source is Substantially Protected: **Yes**
- Drinking Water Source Protection Award: **No**

Source Protection Activities Survey

Expand the sections below to learn more about each of these items.

Drinking Water Source Protection Plans

Source Water Assessments

Drinking Water Source Protection Implementation

Drinking Water Source Protection Award

Examples of Implemented Strategies

- Drinking Water Protection Plans
- Expanded/restored riparian buffers
- Landowner agreements re pesticide applications
- Underground Storage Tank removal/replacement
- Unused well abandonment
- Septic system replacement, education, and maintenance
- Signs, cameras, security fencing (source water related)
- Land conservation and acquisition





Funding projects to protect drinking water sources

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Funding – Drinking Water Source Protection Fund

Drinking Water Source Protection Fund Grants

- Base Set-aside funds +IIJA funds for land acquisition planning
- Grant cap of $50K/$70K per PWS project
- OHA incorporates disadvantaged community status

As of June 30th, 2025:

- $2,946,193 funded for 97 completed water protection projects.
- Impacted 107 water systems, serving 1,774,388 people.

New Interactive Map of previous grant recipients/projects





City of Monroe (4100540) using OHA SPF funds for stormwater retrofitting



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What's New for 2026?

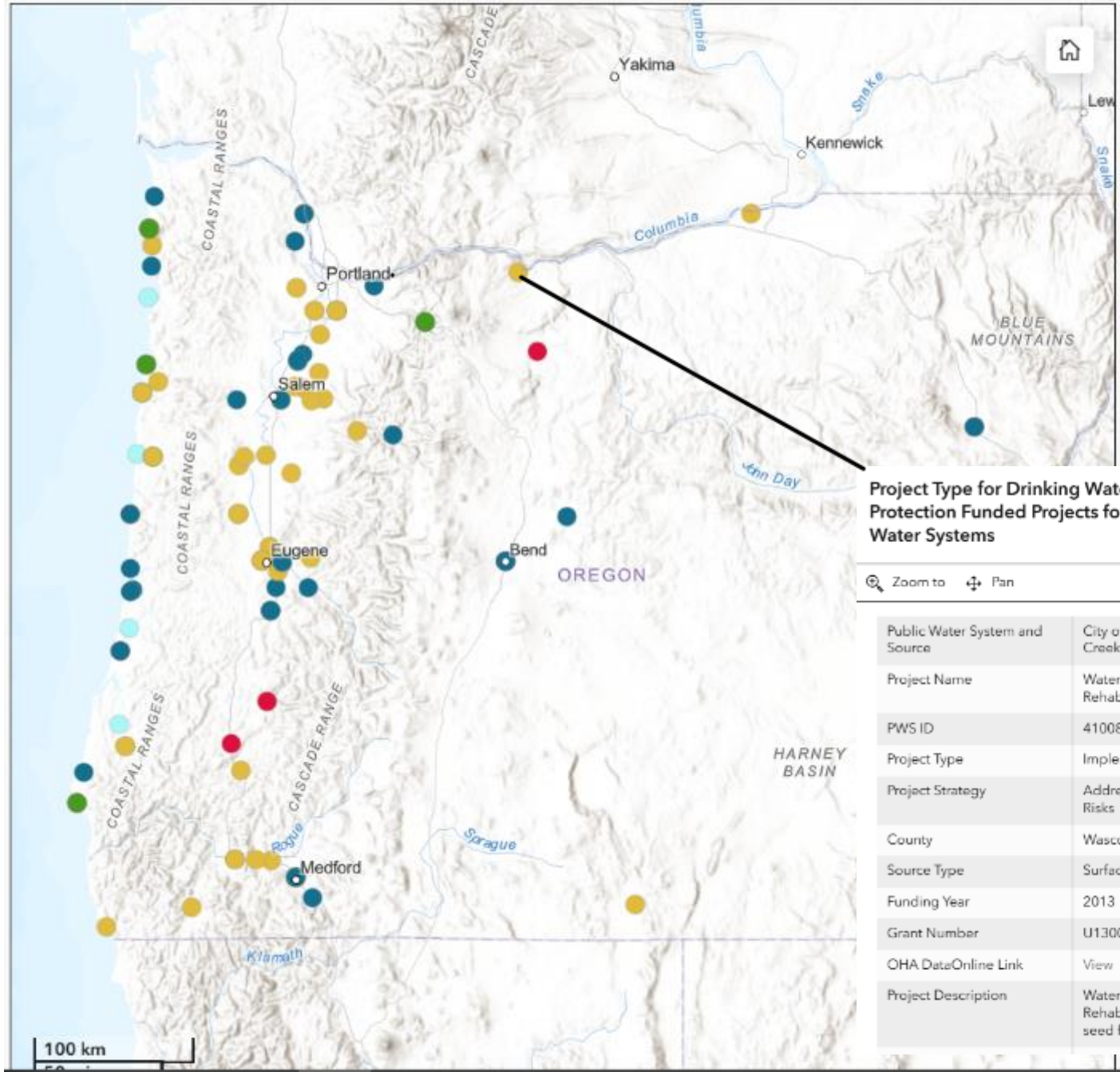


Regional Source Water Collaborative Grants

- $175,000 per project
- Intended to foster source protection coordination among water systems both large and small, groundwater and surface water... who's source areas are overlapping (i.e., watershed areas that have multiple groundwater source areas contained within).
- Involves a "Lead Applicant" that will manage the funding and "Official Partners" that support and participate in the project.
- Must have a minimum of three smaller Official Partners (pop < 3,300)
- Expectation that roughly half of project funds will be directed at Official Partners.

Also encouraging water systems to collaborate on a regional (joint) project and combine funds

OHA/DEQ Drinking Water Source Protection Funded Projects 2008-2023



Project Types for Drinking Water Source Protection Funded Projects for Public Water Systems

- Implementation
- Source Protection and Planning
- Land Acquisition Planning
- Enhanced Assessment
- Security
- Enhanced Delineation

Project Type for Drinking Water Source Protection Funded Projects for Public Water Systems ×

Zoom to | Pan

Public Water System and Source	City of The Dalles (Mill Creek)
Project Name	Watershed Post-fire Rehabilitation
PWS ID	4100869
Project Type	Implementation
Project Strategy	Addressing Post-Wildfire Risks
County	Wasco
Source Type	Surface Water
Funding Year	2013
Grant Number	U13009
OHA DataOnline Link	View
Project Description	Watershed Post-fire Rehabilitation. Purchace seed for land stabilization.

Description of Project Types

Implementation: Pollution prevention and risk reduction projects within the source water area or that contribute to a reduction of contaminant concentration within the drinking water source(s).

Source Protection and Planning:Projects designed to identify appropriate protection measures and best management practices.

Land Aquisition: Land conservation planning for land purchase or purchasing easement restrictions.

Enhanced Delineation: Projects that complete, update, or refine source area delineations using new or additional site-specific information as part of a more comprehensive protection strategy.

Enhanced Assessment: Projects that improve, expand or help prioritize existing and potential threats to water quality evaluating based upon new or more detailed information.

Security: Projects that reduce the risk of contamination to the source water through fencing, gates, alarms, signs, cameras, locks and lights if these are clearly intended to protect highly sensitive source water areas.

ontal Quality

Coordinating with Clean Water Act Partners



Clean Water State Revolving Fund (CWSRF)

- Traditionally funds wastewater treatment, but nonpoint source (NPS) projects are eligible
- Foundational funding source for applicants able to take on debt
- NPS projects often require extra coordination - they protect land rather than build infrastructure

Nonpoint Source (NPS) Programs

- Priorities identified in NPS Management Plan - updated every five years
- 319 grants – this can be a key source of funding in many states

National Water Quality Initiative (NWQI)

NWQI was established as an initiative delivered with state water quality agencies to **address agricultural sources of water pollution**, specifically nutrients, sediment, and pathogens, in priority watersheds. The long-term goal of NWQI is to **achieve water quality improvements through conservation practice implementation**.



National Water Quality Initiative (NWQI)



NWQI Watershed	Established in FY2012 and delivered jointly with state water quality agencies and EPA to address agricultural sources of water pollution, specifically nutrients, sediment, and pathogens.
NWQI Source Water Protection	NWQI was expanded in FY2019 to include source water protection for ground and surface waters that face pollution challenges that would otherwise make them eligible for NWQI.

Planning Phase – Provide technical assistance dollars to a partner for conservation planning, outreach, and coordination with other partners to develop an implementation plan.

Implementation Phase – Financial assistance dollars provided to NRCS to implement developed plan through Farm Bill program contracts.

Benefits of Planning and Implementation Phases



Planning Phase

- Determination of feasibility for implementation
  - Identifies source of water quality concerns and necessary actions to treat resource concerns
  - Local participant eligibility and willingness to participate
  - Local partnerships able and willing to support implementation

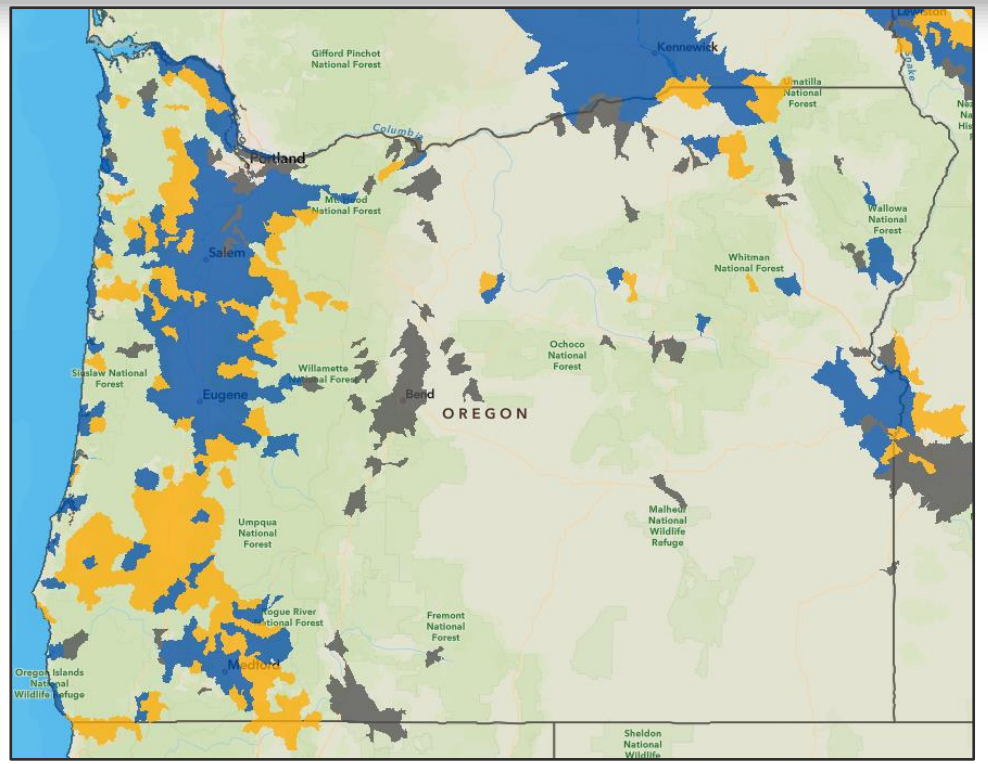
Implementation Phase

- Environmental Quality Incentive Program (EQIP) dollars for implementation of conservation practices identified as needed to treat sources of water quality concerns in the specific area
  - FY25 SWP NWQI implementation allocation – $1,582,100.00 (4 projects)
  - FY24 SWP NWQI implementation allocation – $722,681.00 (2 projects)
  - FY23 SWP NWQI implementation allocation – $695,775.00 (2 projects)

Source Water Protection High Priority Areas (SWP HPAs)

- The 2018 Farm Bill directs NRCS to identify high priority areas (HPAs) for source water protection, identify practices that address water quality and quantity resource concerns, and offer producer's a higher payment rate (up to 90%) through the Environmental Quality Incentives Program (EQIP).

- Oregon worked with DEQ to identify HUC12s that include source water areas with NRCS eligible lands, and state designated area of groundwater concern (groundwater management areas, groundwater vulnerability areas).



Source Water Protection High Priority Areas - Type of System

Type of System

- Both
- Ground
- Surface

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Source Water Protection Priority Practices



Source Water Protection Practices			
313	Waste Storage Facility	422	Hedgerow Planting
317	Composting Facility	441	Irrigation System, Micro irrigation
327	Conservation Cover	443	Irrigation System, Surface and Subsurface
328	Conservation Crop Rotation	449	Irrigation Water Management
329	Residue and Tillage Management, No-Till	484	Mulching
340	Cover Crop	512	Pasture and Hay Planting
342	Critical Area Planting	521	Pond Sealing or Lining, Geomembrane of Geosynthetic Clay Liner
345	Residue and Tillage Management, Reduced Till	528	Prescribed Grazing
367	Roofs and Covers	550	Range Planting
380	Windbreak/Shelterbelt Establishment and Renovation	558	Roof Runoff Structure
390	Riparian Herbaceous Cover	561	Heavy Use Area Protection
391	Riparian Forest Buffer	612	Tree/Shrub Establishment

Funding – Drinking Water Providers Partnership

- 2016-2023+ Public and private organizations pooling funds to improve health of drinking water watersheds and benefit aquatic life
- Supports local partnerships between downstream drinking water providers and upstream landowners and restoration practitioners.
- Projects that are a good fit for Source Protection Funds are referred to state DWSP program



DWPP Project McKenzie River Watershed Council / EWEB DWSA



Multiple Interconnected Funding Sources

- Supports PLANNING activities – Technical Support
- Funding from EPA Northwest Forest Geographic Program



- Supports PLANNING activities
- Loans for property PURCHASE available but $100K max

- Loans for PLANNING and PURCHASE
- Potential for Principal Forgiveness (PF)

- State Grants for PURCHASE
- OWEB Drinking Water Source Protection Fund - $5M for Land Acquisition – awarded April 2025 to 6 PWSs for land purchase.
- One-time legislative allocation- No additional funds at this time.
- OWEB Grants

Key funding supports land conservation planning and purchase.

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Other Funding

- Oregon Watershed Enhancement Board
  Drinking Water Source Protection Fund
  - $5 Million for Land Acquisition in DW Source Areas
- Identifying new and “new to us” funding - What’s good for fish is good for drinking water.
  - CWSRF Planning Loans $100K
  - OWEB Stakeholder Engagement Grants ($75K)
  - ODFW Private Forest Accord Grants



NRCS DWQI funding for Baker City Wildfire Risk Reduction



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Practical Guidance for Advancing Source Water Protection

- Be Strategic and Creative with Funding

Leverage and replicate existing models; engage EPA, USFS, BLM, NRCS, and state Clean Water Act programs to find the right fit and the right champions.

- Recognize That Champions Vary by Landscape

Within forest agencies, the key ally may be a watershed coordinator, forester, fish biologist, or wildfire specialist—keep asking and learning.

- Consider Land Acquisition for Lasting Impact

Source area land acquisition is a heavy lift but can deliver generational benefits through resilient, fire-safe watershed management.



Practical Guidance for Advancing Source Water Protection

- Lead with a Champion and a Shared Vision

Progress requires a committed champion, diverse partners, and flexible funding to adapt over time.

- Use Data to Drive Decisions

Source Water Assessments provide information on risks, vulnerabilities, and priorities.

- Invest in Relationships, Not Just Projects

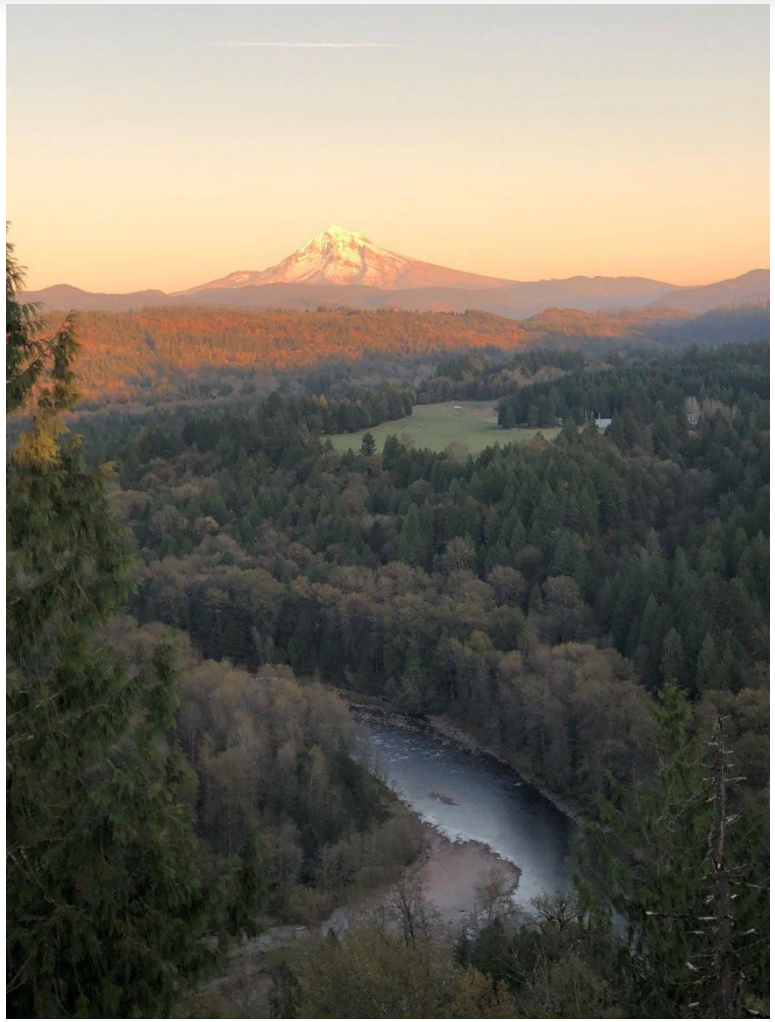
The Source Water Collaborative model works—ongoing relationships with local, state, and federal partners build long-term resilience.

- Engage Decision-Makers and Communities Early and Often

Sustained outreach, education, and technical assistance are essential to move from planning to action.



Contact the Drinking Water Protection Team



Oregon Drinking Water Source Protection Program

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Lots of info on our website!
https://www.oregon.gov/deq/wq/dwp/Pages/default.aspx

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