Written Testimony

Thank you to Chair Read, Vice Chair Sanchez, and members of the Environmental Justice Council for the opportunity to speak to this critical Environmental Justice issue, which has been called the most documentable EJ issue in the State.

While the state of Oregon has known the nitrate levels in the groundwater of the Lower Umatilla were high and unsafe for 34 years, until recently it has failed even to tell people who depend on domestic wells for drinking water the risk. Even after the state's recent efforts, there are people still unaware and drinking and cooking with the unsafe water As DEQ administrator Greg Pettit stated, "The state's voluntary groundwater management approach failed." This "is the most documentable environmental justice issue in the state of Oregon.

In 2022, Oregon Rural Action began working with people in Morrow County to test their wells - going door-to-door. Morrow County declared an emergency based on the number of test results finding 3, 4, up to 6 times unsafe levels. Working together – ORA and people with contaminated wells reached out to their neighbors to test more wells – waiting for a state response.

These directly impacted community members are rural families who live outside city limits and therefore don't have access to regulated city water supplies. They instead rely on domestic wells that draw directly from groundwater. Domestic wells are unregulated, and as a result there are few protections for those who rely on them.

The LUB was designated as a Groundwater Management Area in 1990 due to unsafe levels of nitrate in groundwater, following passage of the Groundwater Protection Act in 1989. DEQ studies since then have shown that groundwater conditions have only continued to worsen while the sources of industrial and agricultural pollution have continued to grow.

The very farms and factories that continue to pollute the groundwater in the Basin are also among the largest and most profitable employers in the region. And, as is so often the case, the people who have been harmed by drinking contaminated water or have lost access to their wells are the same people who rely on sources of pollution to keep a roof over their heads and food on their table. In the Basin, the workers who make industry and big ag's profits possible are the same ones who have been harmed by their practices – the stuff of EJ 101.

The need to protect the people of the LUB from the public health risk posed by nitrate has been clear for decades. Unfortunately, most well users only became aware that the water in their homes was contaminated in the last two years after ORA and community volunteers began going door-to-door to test wells. We have seen the blood drain from people's faces as they learned their test results, heard about the health effects of nitrate, and connected the dots for themselves.

We've provided these written stories in testimony to the House Agriculture, Land Use, Natural Resources, and Water Committee and Secretary of State. Stories like this were documented in the Oregon Secretary of State's report on water insecurity, which was released in February of 2023. People impacted have also shared their experiences with Governor Kotek, with Senator Merkley, and with officials from the EPA. In doing so, they have made their interests clear: the public must be fully and urgently protected from the public health risk of nitrate, and the pollution must stop.

These interests are in full alignment with those of the EPA, which outlined what it considered to be the 7 minimum components of a timely and adequate response to the situation in a July 2022 letter to the State of Oregon. If those 7 minimum components continue not to be met, then EPA has indicated that it may exercise its emergency powers and intervene in order to protect public health. The EPA put the State of Oregon on notice of this in January 2020.

After three years of planning, there is finally some action being taken. The Oregon Health Authority has finally established a program for free well testing, treatment systems, and bottled water delivery. And though this program has only managed to test about half of domestic wells in the LUB, it is a start. The impacted community's voice is finally being heard, though there is a difference between the State simply hearing the community's voice and meaningfully listening to it.

Still, nothing has been done to stop the pollution. In fact, sources of pollution have maintained the long-running status quo in the Lower Umatilla Basin of expanding their footprint, paying fines that amount to the cost of doing business, and continuing to pollute the Basin's groundwater as they maximize their profits. A recent permit expansion for the Port of Morrow, which was opposed by the directly impacted community, was followed by 486 permit violations in a single month in February. DEQ also denied the community's request for a public hearing to address questions about that permit in January. Across the Basin, Lamb Weston, which is targeting around $7 billion in net sales this year, was recently fined a meager $143,400 for violating a permit that expired in 2009, or .002% of those projected sales.

Community members impacted by this groundwater contamination crisis need the help of the Environmental Justice Council to ensure that their voices are seriously and meaningfully considered in key decisions. We are asking that the Council assist the State in understanding how the impacted community can participate in the decisions being made that affect their environment and their lives. For example, they must be meaningfully involved in permitting and

regulatory decisions with the potential to reduce pollution, they must have a voice in deciding their own permanent sources of safe water, and they deserve to be central to decisions about Supplemental Environmental Projects resulting from fines against sources of LUB pollution.

We look forward to working with you to ensure the impacted community's voice is centered by the State and finally takes precedence over economic and political interests of sources of pollution – the definition of environmental justice.

Attachments

Oregon Secretary of State Advisory Report, State Leadership Must Take Action to Protect Water Security for All Oregonians, Local Perspectives: Lower Umatilla Basin.

https://sos.oregon.gov/audits/Documents/2023-04.pdf

Oregon Secretary of State Advisory Report, State Leadership Must Take Action to Protect Water Security for All Oregonians, Appendices.

Appendix C: Written Statements Regarding Water Security from Lower Umatilla Basin Community Members, pages 14-39.

Appendix D: Written Statement Regarding Community Water Security from Oregon Rural Action

https://sos.oregon.gov/audits/Documents/2023-04-appendices.pdf

Letter from Environmental Protection Agency to Oregon State Agencies, July 2022

Memorandum

To: Chair and Members of the Environmental Justice Council
From: Oregon Rural Action / Impacted Community of the Lower Umatilla Basin
Date: April 4, 2024

Regarding: Agenda Item 6 – LUBGWMA CBO Panel
This memorandum provides a brief background on Oregon Rural Action and its role in responding to the groundwater contamination and drinking water crisis in the Lower Umatilla Basin, as requested by EJ Council staff.

Organization Name:
Oregon Rural Action (ORA) is a 501(c)(3) rural, grassroots, and culturally diverse organization in Eastern Oregon. Our mission is to promote social justice, agricultural and economic sustainability, and stewardship of the region's land, air, and water. Through community organizing, public conversations, and policy advocacy, ORA is building a rural movement for the well-being of all people and our environment, led by the diverse communities in eastern Oregon. www.oregonrural.org

Communities Supported:
Directly impacted community members within the Lower Umatilla Groundwater Management Area (LUBGWMA) include people who depend on a domestic well for drinking water. These include rural, low-income, working-class, Hispanic (primarily Spanish-speaking), and Anglo people, a majority of whom work in the fields and food processing plants of industrial agriculture, the region's economic engine and primary source of nitrate pollution. These are environmental justice communities based on the federal and state government definitions.

Testimony: Environmental Justice, Public Health Response, Groundwater Nitrate Pollution, State's Regulatory and Voluntary Groundwater Approach
ORA can offer testimony on a wide range of topics related to this issue, as our years of involvement, beginning in 2012, have resulted in a deep understanding of the issues.

Today's testimony will focus primarily on **environmental justice**, requesting the Environmental Justice Council's leadership to advance Oregon's efforts to ensure "meaningful participation" of directly impacted environmental justice communities in public decision-making that affects their lives.

Name of person providing testimony
Kaleb Lay, Director of Policy & Research

Testimony on behalf of:

Oregon Rural Action community members represent the interests of those directly impacted by the ongoing groundwater contamination crisis in the Lower Umatilla Basin.

How are communities being supported by your organization?
Since at least 2011, ORA has been concerned about nitrate contamination in the Lower Umatilla Basin and the lack of progress in meeting the state-defined goal of reducing nitrate levels to below 7 mg/L, based on Oregon's Groundwater Protection Act.

In the spring of 2022, ORA and directly impacted community members in rural Morrow County partnered with the local county Public Health Department to conduct door-to-door outreach, test domestic wells, and provide information and water. Beginning in the fall of 2022, ORA and directly impacted community members organized a cross-cultural, community-led campaign, "Safe Rural Water Community / Agua Segura En La Comunidad Rural," to amplify the impacted community's interests, secure immediate and long-term access to safe drinking water, and restore the groundwater of the Lower Umatilla Basin.

These impacted community goals align with the EPA's July 2022 requirements that the State of Oregon address the immediate public health risk by offering free testing, providing alternate water or connecting to a public water system, and holding the nitrate sources accountable. Impacted community members continue to seek "meaningful participation" in public decisions that directly affect their lives. They specifically advocate that the state of Oregon implement the EPA-defined "minimum components" of an adequate state-coordinated response plan.

Activities ORA has conducted include:

- Test domestic wells and delivered bottled water to households with contaminated wells during both the local (2022) and State (2023-present) responses;
- Host regular impacted community information and leadership meetings;
- Host community outreach and resource events for the wider community;
- Host a live weekly radio show in Spanish to offer information;
- Host tours and meetings with public officials, including U.S. Senator Merkley, EPA Regional Administrator Sixkiller, Governor Kotek, and several state legislators of the BIPOC Legislative Caucus;
- Represent impacted community in the "LUBGWMA Public Health Leadership Team" meetings
- Represent impacted community on the Lower Umatilla Basin Groundwater Management Area (LUBGWMA) Committee;
- Provide oversight and accountability regarding the State of Oregon's actions pertaining to groundwater contamination in the LUB (DATA MONITORING/REPORTS?);
- Worked with impacted community members to submit public comment and testimony on permits and enforcement of local sources of pollution;
- Amplify impacted community voices in statewide and local media;
- Engage with the Environmental Protection Agency to provide feedback regarding the State's response, particularly as it relates to the needs of those directly impacted and the minimum components outlined in the EPA's July 2022 letter to the State.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 155
Seattle, WA 98101

ENFORCEMENT &
COMPLIANCE
ASSURANCE DIVISION

Reply To: 20-C04

RETURN RECEIPT REQUESTED

Ms. Rachael Banks, MPA
Public Health Director
Oregon Health Authority
500 Summer Street Northeast, E-20
Salem, Oregon 97301

Ms. Leah Feldon
Deputy Director
Oregon Department of Environmental Quality
4026 Fairview Industrial Drive Southeast
Salem, Oregon 97302

Mr. Lauren Henderson
Deputy Director
Oregon Department of Agriculture
635 Capital Street Northeast
Salem, Oregon 97301

Re: January 16, 2020, Petition to EPA for Emergency Action Pursuant to Safe Drinking Water Act Section 1431 to Address Nitrate in the Lower Umatilla Basin in North Central Oregon

Dear Ms. Banks, Ms. Feldon and Mr. Henderson:

This letter continues communications between the U.S. Environmental Protection Agency (EPA or "Agency") and Oregon Health Authority (OHA), Department of Environmental Quality, and the Oregon Department of Agriculture regarding nitrate contamination in drinking water in the Lower Umatilla Basin (LUB), Oregon and specifically Oregon's strategy to protect residents from associated health impacts. We appreciate your continued willingness to coordinate with EPA, including your July 7, 2022 letter, which provided additional information about nitrate sources and, most pertinent to this letter, outlined your plan to ensure safe drinking water for LUB residents as soon as possible.

As EPA previously conveyed, the Agency supports the general framework of Oregon's plan to mitigate health risks from nitrate-contaminated drinking water, as set forth in the *State of Oregon Workplan: Protecting Public Health from Nitrate Exposure in the Lower Umatilla Basin Ground Water Management Area* ("Workplan"), dated December 22, 2021 and in your July 7th letter. The Workplan states that Oregon will conduct outreach and education regarding nitrate contamination in the LUB Groundwater Management Area (GWMA); perform a detailed hazard

assessment; offer free drinking water testing; and provide alternative water, where necessary. EPA is encouraged that Oregon has expedited its implementation of the Workplan. Specifically, OHA secured interim funding so that implementation will begin this summer; obtained authorization to request funding from the Oregon Legislative Emergency Board in September 2022; and is developing a comprehensive funding request for the 2023 Oregon Legislative Assembly. However, the Workplan and subsequent correspondence lack sufficient detail for EPA to evaluate whether your proposed actions will timely and adequately ensure safe drinking water for all LUB residents. To help confirm that Oregon's response action will address the immediate public health risks and to ensure it is adequately funded, below EPA has identified criteria we believe critical for an effective drinking water response action in the LUB. Hopefully this information will be helpful as you prepare for your upcoming presentations to the state Legislature.

EPA considers that an adequate response plan to address the immediate health risks in the LUB must include the following minimum components:

1. **Coordination** – An effective response plan includes a communication plan that identifies how information and responsibilities will be shared among the Oregon Governor's Office, state agencies, Umatilla and Morrow Counties and any private businesses or local utilities that have volunteered or been required to act, so that each entity's efforts serve a singular and coordinated response.

2. **Identification of Impacted Residences** – The hazard assessment, in part, should identify each residence that obtains drinking water from a private well in the LUB GWMA.

3. **Education and Outreach** – Public education and outreach should be conducted in a form and manner reasonably calculated to reach all impacted LUB residents and consistent with analogous requirements and suggestions for Tier 1 public notice set forth in *EPA's Revised Public Notification Handbook*, EPA 816-09-013, March 2010 ("Handbook"). For example, EPA recommends that the state's efforts include, as components of a comprehensive public outreach plan, (a) increased visibility and accessibility of information (*e.g.*, in all appropriate languages) regarding nitrate contamination on state and local government websites and (b) a program by which the state coordinates with local health care providers to distribute information regarding nitrate contamination to LUB residents that are particularly vulnerable to the associated health risks (*e.g.*, homes with formula fed infants). Additional public outreach methods set forth in the Handbook, such as broadcast media, should also be utilized as appropriate. Each component of the broad public outreach plan should include, among other analogous public notice elements listed in the Handbook, clear instruction for private drinking water well users to request free drinking water testing. By documenting responses to the public notices and requests for drinking water testing, Oregon should measure its progress in contacting all private well users that were identified in the hazard assessment. For those private well users identified in the hazard assessment that do not respond to public notices, Oregon should attempt personal communications, such as visits to individual residences.

4. **Drinking Water Testing** – An effective response plan provides laboratory analysis of a drinking water sample from the residence of any private well user in the LUB that requests testing, unless a nitrate test strip demonstrates that the nitrate concentration of the well is below 5 mg/L. Testing should be provided at no cost to LUB residents.

5. **Provision of Alternate Water** – Alternate drinking water should be offered to each residence where the drinking water sample exceeds the federal maximum contaminant level (MCL) of 10 mg/L nitrate based on laboratory analysis. Alternative water should be provided as needed for drinking, cooking, maintaining oral hygiene and dish washing at no cost to the resident and in a manner that minimizes the burden on the impacted resident to obtain safe drinking water, such as reverse osmosis (RO) treatment units, water delivery services or connection to a public water system. To the extent certain LUB residences will be connected to a public water system, they should receive alternate water until construction is completed. Residences provided RO treatment units should be offered regular maintenance at no cost to the resident. The alternate water supply and any necessary maintenance shall be made available to the impacted resident until sampling shows that nitrate concentrations in their private well no longer exceed the MCL.

6. **Public Records** – An effective response plan maintains and regularly publishes records such that LUB residents and the general public can better understand the scope and severity of nitrate contamination in the LUB and measure Oregon's progress in implementing its response plan. Information important for public review includes (a) the number and general location of private drinking water wells in the LUB GWMA; (b) quantitative data regarding Oregon's public outreach efforts and the responses received, including the number of residences that responded to public notices and the number of residences that received and responded to personal communications; (c) the number of residences that requested and were provided drinking water testing and the results; (d) the number of residences that were offered and accepted alternate drinking water, specifying the method of water delivery; (e) quantitative data regarding efforts to regularly maintain RO treatment units; and (f) groundwater monitoring results from the LUB GWMA Well Network and synoptic sampling events, as they occur. In making this information available, Oregon should implement precautions to ensure that LUB residents' personally identifiable information is kept confidential.

7. **Communication with EPA** – EPA requests that Oregon provide progress reports to EPA that (a) describe actions taken during the previous quarter to address the immediate health impacts of nitrate contamination; (b) identify major accomplishments and issues that arose; (c) describe actions planned for the next quarter; and (d) describe any problems or delays encountered and the solutions implemented to address them. As Oregon requests funding and initiates implementation of the Workplan in 2022 and 2023, EPA will benefit from quarterly progress reports. Less frequent progress reports may be appropriate as implementation continues. Additionally, EPA requests that Oregon designate a point of contact for ongoing coordination between EPA and the state regarding Workplan implementation and that the point of contact schedule recurring meetings coinciding with the progress reports.

Certain LUB residents may continue to consume water that exceeds the MCL for nitrate if, for example, the resident does not respond to outreach attempts; nitrate concentrations fluctuate and an individual well does not demonstrate an exceedance when testing is performed; or a resident moves to the LUB after initial public outreach efforts but before nitrate concentrations in groundwater fall below the MCL. Accordingly, the success of Oregon's response plan depends on the state's willingness and ability to sustain public outreach, testing, and alternative water supply for so long as nitrate concentrations in LUB groundwater remain elevated. The need to inform and protect LUB residents from nitrate contamination and its potential health risks will remain even after completion of initial outreach efforts in 2022 and 2023.

EPA recognizes that the burden to ensure safe water for LUB residents is placed more appropriately on the sources in the LUB that contribute excess nitrate to groundwater. EPA expects the state to hold nitrate sources accountable by requiring them to assume some of the responsibilities set forth above and, more importantly, to change their practices to reduce the amount of nitrate they discharge to groundwater in order to protect the health of their employees and neighbors. The state possesses various tools to effect reductions in nitrate concentrations, such as the authority to implement the Clean Water Act's National Pollutant Discharge Elimination System (NPDES) program, including the development and enforcement of individual NPDES permits for industrial discharges and the Oregon Concentrated Animal Feeding Operation NPDES General Permit. Use of such tools will be required, since reliance on voluntary best management practices has resulted in increasing nitrate trends since the Groundwater Management Area's first Action Plan in 1997. Recurring meetings between EPA and the state, as requested above, will include discussion of the state's efforts and progress in implementing the changes necessary to mitigate nitrate sources. If EPA observes a reluctance to require that sources implement necessary changes, EPA will consider increased federal intervention, including use of its emergency authorities in Section 1431 of the Safe Drinking Water Act, to lessen sources' contributions of nitrate to groundwater.

As we have previously expressed, EPA appreciates your continued engagement and your efforts to address the complex groundwater contamination problems in the LUB. The Agency will continue to closely monitor the situation and continues to assess options for additional Agency intervention if necessary. Please inform us of the results of your upcoming funding requests. In the interim, if you wish to discuss any portion of this letter, including the minimum components of an adequate response plan set forth above, please do not hesitate to contact me at kowalski.edward@epa.gov or (206) 553-6695 or your staff may contact Jeff KenKnight, at kenknight.jeff@epa.gov or (206) 553-6641. I look forward to additional coordination with you as you begin to implement your plans to protect LUB residents.

Sincerely,

Edward J. Kowalski
Director

Advisory Report

State Leadership Must Take Action to Protect Water Security for All Oregonians

January 2023
Report 2023-04

OREGON SOS
Secretary of State
Shemia Fagan

OREGON AUDITS DIVISION
Audits Director
Kip Memmott

Table of Contents

Executive Summary

Water insecurity is a reality for many Oregon residents and a growing risk for many more. Ongoing drought conditions and concerns around the quality, safety, and accessibility of water have demonstrated the need for better governance to protect Oregon's water security. This advisory report addresses gaps in Oregon's water governance that can lead to or worsen water insecurity and lead to inequitable outcomes for higher-risk communities. We offer suggestions for state leadership on how to improve these gaps in governance.

The state has made some efforts to address water security concerns. The passage of House Bill 5006 in 2021 led to significant investments in local infrastructure projects, increases in agency staffing, and the creation of the State Supported Regional Water Planning and Management Workgroup. Several state agencies have demonstrated a commitment to finding broad, cross-cutting solutions to water security concerns through ongoing efforts to improve water data, include more diverse communities in decision making, and engage in planning and coordination.

While these developments hold promise, Oregon is underprepared to provide meaningful support to many communities facing water insecurity and has more work to do to meet the state's immediate and long-term water security and water equity needs.

The following aspects of Oregon's water governance need urgent attention:

Oregon communities facing water insecurity often encounter numerous barriers to addressing the problem directly. The state has a fragmented and siloed institutional structure around water that can make it challenging to apply cross-agency and multi-level solutions to local problems, and there is not a clear framework in place to support multi-level coordination. State water policy also prioritizes water access for senior water right holders and does not fully account for the complexity of the resource or its relationship to ecosystem health.

- Many communities are not fully integrated into water decisions and often not even aware there is a problem.
- The Oregon Integrated Water Resources Strategy is not clearly connected to state and regional planning efforts and does not have clear implementation pathways.
- Oregon's state leadership and agencies do not necessarily share water security priorities. Agencies have distinct areas of focus and limited resources and capacity that limit the ability to engage broadly with communities or work across agency lines.
- Oregon water data is disaggregated, sometimes incomplete, and not set up to support regional governance needs.
- Oregon lacks a water funding strategy that ties state and regional planning to investments. The state's water infrastructure suffers from decades of disinvestment and natural resource agencies lack funding and capacity to properly enact their duties.
- State water regulatory agencies have broad discretion but face external pressures that may hinder them from fully using this discretion to benefit the public.

Furthermore, while Oregon's federally recognized Tribes are proactive in addressing water insecurity, a history of oppression and ongoing industrial and agricultural practices ecologically inappropriate for Oregon's water basins has undermined their ability to ensure water security in their homelands.

Oregon must adopt integrated and holistic policies and practices based on principles of good water governance

The Oregon Legislature and Governor's Office, in coordination with state agencies that work with water, must commit to developing a robust state and regional framework. The framework should be centered on meeting public needs and applying holistic and scientifically sound water management practices. It should incorporate the principles of good water governance to enhance water security and equity. Specific needs addressed in the report include:

- Developing priorities centered on water security and equity shared by state leadership and agencies that can guide decisions based on a statewide, integrated approach.
- Connecting an actionable and equitable state-level water plan based on shared priorities to regional planning.
- Convening a formal planning and coordination body with diverse representation to guide the statewide plan and provide consistent support to regional planning and other governance needs.
- Defining clear agency roles and responsibilities within a state and regional framework to ensure there is no operational overlap or gaps in service.

- Balancing interests and addressing high-priority water needs by integrating more communities into statewide and regional management decisions.
- Enhancing public awareness of the state's water challenges.
- Prioritizing the human right to water in state policy and exploring policy changes that could better protect community and ecosystem health.
- Improving water data to support strategic decision making within a state and regional framework.
- Adopting a strategic approach to funding and a consistent funding base to support desired outcomes.
- Supporting state agencies in carrying out their regulatory responsibilities.
- Integrating Oregon's federally recognized Tribes as full and equal partners into state and regional water decision-making.

Our goal is for this report to inform state leadership and support additional changes needed to protect water security for all. We hope state leadership can maintain the momentum of recent actions taken to address Oregon's water needs and build on past and ongoing efforts of state agencies, communities, stakeholders, and Tribes to craft a robust approach to water governance that can support the needs of current and future generations.

Community members meet in Morrow County to discuss needed response to nitrate-contaminated groundwater, summer 2022.

About the Project

Following several years of drought and growing concerns about water in the State of Oregon, the Oregon Audits Division planned to launch an audit in 2021. The division determined there were water governance and equity concerns that needed to be addressed to protect water security for all Oregon residents. However, without a single lead agency for water governance and with an identified need to address state water policy, the Division opted to direct an advisory report to the Oregon Legislature and Governor's Office, rather than conduct an audit under Government Auditing Standards.

This report addresses specific systemic gaps in Oregon's water governance that can create or worsen water insecurity and lead to inequitable outcomes for higher-risk communities. This report is not intended to provide a comprehensive review of all water risks or concerns faced by the state.

The division spoke with several state agencies, legislators, the Governor's natural resources team, local and county government representatives, academic researchers, nonprofits and community-based organizations, three Oregon Tribes, community members, and a variety of other water stakeholders.

The division would like to thank Oregon state agencies and other stakeholders for their cooperation on this project — in particular, we appreciate the assistance and support of the Oregon Water Resources Department, the Department of Environmental Quality, the Oregon Watershed Enhancement Board, the Oregon Health Authority, and Business Oregon. We would also like to extend our gratitude to the Klamath Tribes, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians, community members in Harney County, the Lower Umatilla Basin, and the North Coast region of Oregon, and community-based organizations North Coast Communities for Watershed Protection and Oregon Rural Action for their assistance, support, and guidance on this project.

Audit Team
Olivia Recheked, MPA, Audit Manager
Bonnie Crawford, MPA, Senior Auditor
Wendy Kam, MBA, CFE, Staff Auditor
Ariana Denney, MPA, Staff Auditor

About the Secretary of State Audits Division

The Oregon Constitution provides that the Secretary of State shall be, by virtue of the office, Auditor of Public Accounts. The Audits Division performs this duty. The division reports to the elected Secretary of State and is independent of other agencies within the Executive, Legislative, and Judicial branches of Oregon government. The division has constitutional authority to audit all state officers, agencies, boards and commissions as well as administer municipal audit law.

What Does Water Management Look Like in Oregon?

Water is life. Water impacts nearly every part of our lives and is essential for human survival. People depend on regular access to water to serve a variety of needs. In Oregon, these needs include water for drinking, agriculture, industry, recreation, hydropower, and ecological and cultural stewardship.

Despite Oregon's reputation for being rainy and wet, two-thirds of the state consists of arid high desert with hot, dry summers like those seen across much of the western United States. Communities in Central and Eastern Oregon have long dealt with limited water, but with the advancement of climate change, a perennial concern for many has evolved into an ongoing crisis.

Communities in Oregon's temperate coastline and Willamette Valley are also struggling; demand for local water resources sometimes outstrips supply. Across the state, water quality can be compromised by improperly regulated agricultural and industrial practices and by increasing water temperatures brought on by high water demand, declining overall precipitation and snowpack and natural water storage, and increasingly hot summers.

Oregon has also been hit by the same megadrought that is incapacitating other parts of the western United States. The megadrought started in 2000 and is the worst to hit the region in 1,200 years. The past 22 years have been the driest on record in the western United States.

There is a broad spectrum of potential causes that lead to water insecurity, and some communities are more vulnerable than others. Many communities in Oregon are at high risk of becoming water insecure in the very near future, if they are not already. An incomplete list of these risks includes:

- Climate change
- Aging infrastructure or poor water quality that can lead to health issues for affected communities
- Communities unable to afford clean and safe water for domestic needs
- Seismic events including the Cascadia earthquake that threaten water infrastructure and services
- High demand and shrinking supply threaten the state's ability to meet all water needs
- Unpredictable federal and state funding
- Competing interests in water driven by differing values
- Highly litigious environment
- Antiquated, incomplete, and non-integrated water data systems which slow decision making
- Western water law disincentivizing cooperation and conservation
- Limited public knowledge of water issues in Oregon
- Limited community representation around water planning and decision-making
- Over-allocation of water resources
- Rapidly declining groundwater from agricultural, industrial, and municipal overuse in several areas of the state

The array of risks faced by different communities makes working to ensure water security at the state level a challenge. Thoughtful, well-coordinated action to address the causes and the impacts of water insecurity is critically important.

What is Water Security and Water Equity?

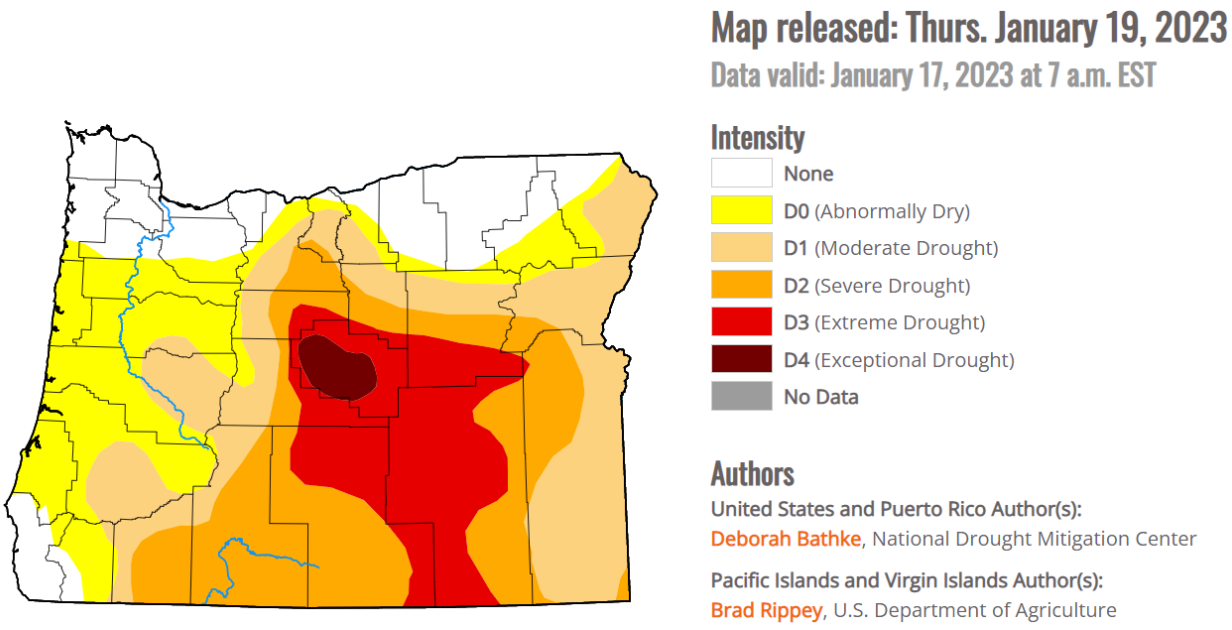
Water security and **water equity** are assurances that water is safe, clean, available to use for basic human and ecosystem needs, and by all people. For the purposes of this report, we use the United Nations' definition of **water security**, which describes the ability of communities to access adequate, safe, clean water to sustain human well-being, protect livelihoods and socio-economic development, protect against pollution and water related disasters, and preserve ecosystems.

At the recommendation of the Confederated Tribes of the Umatilla Indian Reservation, the Audits Division has expanded this definition of water security to include the ability of communities to **interact with** water, not simply access it, for these purposes. The U.S. Water Alliance further expands on this definition by stating **water equity** occurs when these conditions are enjoyed by all communities. For Oregon's water system to be both equitable and secure, these conditions need to be met.

Oregon faces daunting water security concerns as climate change advances

One major threat to Oregon's water security is climate change. Climate change is both a cause and a complicating factor for other causes of water insecurity. It is a clear and present danger to people and ecosystems and affects our natural environment in broad and sometimes unexpected ways. For example, climate change leads to larger and more intense wildfires that affect air and water quality, resulting in poor public health and the displacement of communities.

Figure 1: As of January 19th, 2023, over 80% of Oregon was still in drought or abnormally dry



Source: U.S. Drought Monitor

According to the 2023 Sixth Oregon Climate Assessment, Oregon's annual average temperature has already increased by 2 degrees Fahrenheit since 1895 and is expected to increase by an additional 5 degrees Fahrenheit by the 2050s and over 8 degrees Fahrenheit by the 2080s if greenhouse gas emissions continue at current levels.[1] The greatest seasonal temperature increases are expected to occur during the summer months.

Climate change also affects the water cycle, and Oregon's precipitation profile is changing fast. Precipitation is projected to increase during the winter and decrease during the summer. The number and intensity of heavy winter precipitation events will likely increase, and more water will arrive as rain rather than snow. The frequency and likelihood of droughts is also growing.

According to a 2019 University of Maryland report, by the year 2080, hundreds of North American cities are anticipated to become climatically similar to contemporary cities 525 miles to the south, should carbon emissions continue unabated. Portland, Oregon's closest 2080 analog is the city of Lincoln, California, located just outside of Sacramento. On average, Lincoln is 6 degrees Fahrenheit (3.6 degrees Celsius) warmer than Portland and over 30% drier in winter months.

Changes to one part of the water cycle have cascading effects — warmer winters and declining snowpack in Oregon and other western states has already led to less water in lakes, rivers, and aquifers during summer, when demand from cities and farms is at its peak. This puts greater stress on available water resources and can lead to other issues, including more intense droughts and disputes over water access and management. When winter precipitation arrives as rain rather than snow, or there is significant rain after a long period of drought, the risk of seasonal flooding may also increase. Wildfires lead to more erosion of watersheds; higher water temperatures in streams, rivers, and lakes lead to species loss and habitat destruction.

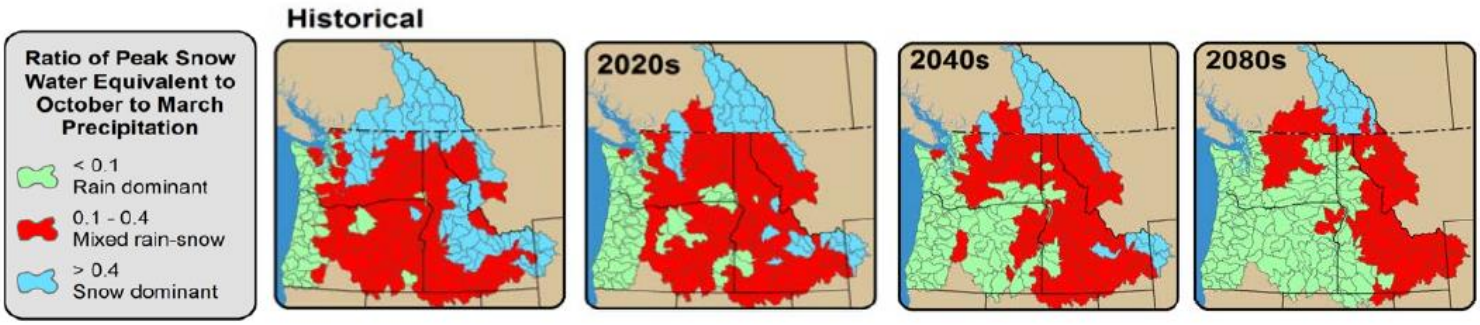
Changes in the water cycle, hotter temperatures, and certain agricultural and industrial practices also contribute to degrading water quality in lakes, streams, and aquifers around the state. Cyanobacteria (harmful algae) blooms, brought on by warmer water and the presence of pollutants like phosphorus, threaten drinking water and fish habitat. Areas of the state dependent on well water to meet domestic needs are seeing wells not only dry up but be impacted by the presence of nitrates, arsenic, and other pollutants harmful to humans and animals. Concerns have also been raised recently about the presence of PFAS[2] in domestic water supplies. The combination of low water availability and poor water quality can be dangerous for communities and ecosystems and difficult to fix.

Oregon's 2017 Integrated Water Resources Strategy showed the form precipitation takes in Oregon is anticipated to shift drastically from a mix of rain and snow to primarily rain across the state in the coming decades.

[1] The Oregon Climate Assessment is released by the Oregon State University Oregon Climate Change Research Institute: Fleishman E., editor. 2023. Sixth Oregon Climate Assessment. Oregon Climate Change Research Institute, Oregon State University, Corvallis, Oregon.

[2] Per- and Polyfluoroalkyl Substances, commonly known as PFAS, are widely used long lasting chemicals that break down very slowly over time. There are thousands of PFAS chemicals found in consumer, commercial, and industrial products that have made their way into water, air, fish and soil across the globe and may be linked to harmful health impacts in humans and animals. Per- and Polyfluoroalkyl Substances (PFAS) | US EPA

Figure 2: By the 2080s, most of Oregon may depend upon rainfall and receive very little snow



Source: An Overview of the Columbia Basin Climate Change Scenarios Project: Approach, Methods, and Summary of Key Results

Extreme events have become more commonplace. Since 2019, Oregon has witnessed some of the worst climate-driven natural disasters in its history. The 2020 Labor Day fires burned 11% of the Oregon Cascades, more acreage than had burned in the previous 36 years combined, destroyed communities and ecosystems, and took lives. The impacts from events like this on Oregon's more vulnerable communities — low-income, underinvested rural, people of color, and Tribal communities — could be severe and long-lasting, and lead to greater incidents of homelessness, food insecurity, and poor mental and physical health.

Other parts of the country are already facing severe water challenges made worse by climate change. A century of overuse and poor water management decisions, combined with reduced snowpack and reduced flow in stream, has created a water crisis in the Colorado River Basin that already impacts millions of people.

As directed by the U.S. Bureau of Reclamation, the seven states and certain Tribes that rely heavily on water from the Colorado River must reduce their water consumption by up to 4 million acre-feet in 2023, or risk losing water in the basin almost entirely.[3] These states failed to come to an agreement within the 60-day period granted by the federal government, which led to further administrative actions aimed at improved reservoir management across the basin. Funding from the Inflation Reduction Act has helped create the Lower Colorado River Basin System Conservation and Efficiency Program with the aim of increasing water conservation and improving water efficiency to prevent key reservoirs from hitting critical levels. The extreme drought may also lead to federally mandated water cuts to states and Tribes to protect Lake Powell and Lake Mead, which provide water and power to 40 million people in the Southwest and have dropped dangerously low. This situation is still developing.

These events are likely to become more frequent and hit closer to home without swift, decisive, and drastic local and global action to mitigate our climate impacts and adapt to changes as they occur. Considering the changes that are already occurring in Oregon — our climate is getting warmer and drier, and extreme weather events are becoming more frequent and devastating — acting now to protect water security for all is a necessity.

[3] Water is commonly measured in acre-feet. One acre-foot equals about 326,000 gallons, or enough water to cover a football field one foot deep. Four million acre-feet is the equivalent of almost 2 million Olympic-sized swimming pools.

Working with water from a governance standpoint is a complex and difficult undertaking

Because water is dynamic and moves from one location to another, the responsibility for directly managing water can change hands numerous times, depending on where the water is and what are the local needs and conditions. The flow of water is not based on and does not observe jurisdictional, state, or national boundaries. Coordination among many jurisdictions and players is critical, though it may be difficult to accomplish in times of water shortage or increased need. Guidance on how best to manage water and create workable water governance systems at a state level exists to a degree, but states have distinctly different water needs and challenges. The many differences in state-level policy and practice can make comparisons difficult and establishing and applying best practices even more so. Water is also controversial, and discussions about water management or proposed policy changes are often fraught with conflict.

Oregon's water governance is multi-layered, and its institutional structure is decentralized

Water as a resource is subject to many layers of governance: local districts, cities and counties, state agencies, federal agencies, and international treaties and state to state compacts all play a role. Water governance in Oregon is largely decentralized at the state level. State and local entities operate under a complex network of state and federal laws and policies.

Oregon has numerous state agencies that play a role in managing, regulating, and planning for water and its uses across the state; responding to emergency situations such as floods; or creating and implementing policies that could impact water resources. Key state agencies involved include the Water Resources Department (WRD), which oversees water allocation and permitting and has played a role in many different water planning efforts over the years; the Department of Environmental Quality, which is the key agency responsible for protecting water quality; and the Oregon Health Authority Drinking Water Services program, which is responsible for protecting community drinking water.

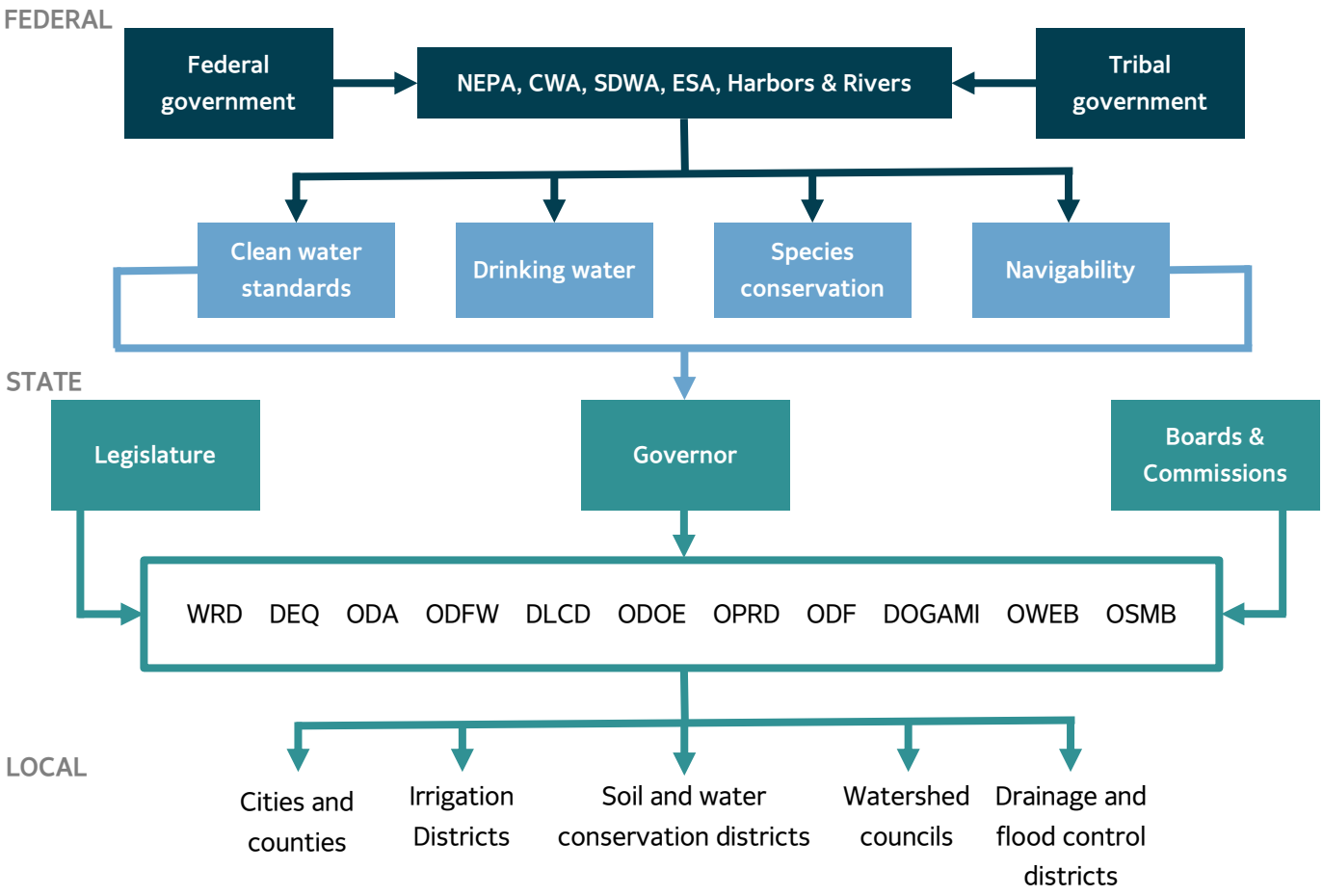
The Governor's Office and Oregon Legislature also play important roles when it comes to decision-making, coordinating, and funding for Oregon's water resources.[4]

Some other state agencies are not included in Figure 3 but play roles in Oregon's water governance and participate in the state's informally convened Water Core Team,[5] including Business Oregon and the Oregon Department of Transportation.

Unlike some other states, Oregon does not have a formalized interagency structure or a central Department of Natural Resources to help guide major water decisions and policy. Whether such a structure is necessary is a matter of debate. Having multiple separate agencies responsible for isolated pieces of water management complicates efforts to coordinate across agency lines; however, allowing agencies to focus on their respective pieces of water management may avoid unnecessary delays in the performance of their duties. Both functions are critical to effectively managing water.

[4] See Appendix G in the attached document for full list of state agencies in Oregon with a notable nexus to water.
[5] The Water Core Team is discussed in greater detail later in this report.

Figure 3: Oregon's institutional water structure involves many players



Source: Dingfelder, Jacqueline, "Wicked Water Problems: Can Network Governance Deliver? Integrated Water Management Case Studies from New Zealand and Oregon, USA" (2017). Dissertations and Theses. Paper 3623.

To coordinate different aspects of water management, such as drought response, Oregon depends on several formal and informal coordination mechanisms. These include task forces formally convened by the Legislature, and groups like the Water Core Team initiated by state agencies attempting to improve cross-agency decision-making.

Numerous local and regional bodies and the federal government also play key roles in water management; these include cities and counties, irrigation and other kinds of special districts, federal agencies, and private landowners. Private industries, such as large agricultural operations, also play a significant role in water management and governance.

Federal involvement in water governance is largely decentralized. Several federal agencies play key roles in aspects of water management in Oregon, and federal laws like the Clean Water Act direct and inform Oregon's water programming. These agencies include: the Environmental Protection Agency, which has oversight of Oregon's implementation of the Clean Water Act; the United States Geological Survey, which performs research and conducts basin-level surface and groundwater studies; and the Bureau of Reclamation, which funds and operates large water infrastructure projects. More than 20

federal agencies deal with some component of water management. Oregon's water agencies work closely with the federal government to ensure federal regulations are carried out and federal funding is directed through their programs to address state water needs.

What is Water Governance and Water Management?

Water governance generally refers to administrative systems, with a focus on formal institutions (laws and policies) and informal institutions (relationships and practices) as well as organizational structures and their efficiency. Ideally, water governance includes institutional and policy frameworks that foster transparency, accountability, and coordination.

Water management generally covers a range of operational activities intended to meet specific targets, such as aligning water resources with water supply and use.

The Audits Division is using definitions provided by the Organisation for Economic Cooperation and Development, 2011.

In some situations, the federal government may also play a role in water allocation, though this is generally the responsibility of individual states. Federal agencies are involved in international water negotiations with Mexico and Canada, and some interstate water decisions. For example, the Secretary of the Interior acts as the Watermaster for the lower Colorado River to guide water decisions in collaboration with the Colorado River Basin states, indigenous Tribes in the region, Mexico, agricultural interests, and many other stakeholders. In Oregon, the U.S. Department of State is leading efforts to renegotiate and modernize the Columbia River Treaty with Canada. The Columbia River Basin touches several US states and British Columbia. The treaty covers hydropower, management of flood risk, irrigation and municipal support, navigation, recreation, and ecosystem benefits. Negotiations are ongoing.

While this report focuses primarily on the state's role in water governance, other players enact key roles and must be taken into account when making water decisions. The challenges and difficulties of state-level water governance and management are shared by all states in the U.S. Institutional frameworks developed to support and guide water management efforts also tend to be unique from state to state. However, Oregon can learn from some practices enacted by other states, particularly around funding, data, and planning, and can take further steps to apply good governance principles to its water policy and practices.

Leading practices advocate for transformative approaches to addressing water security challenges, though this varies in application

To address climate change and other water security challenges, international leading practices advocate for transformative changes in how water is managed — meaning a push toward collaborative, integrative, adaptive, and nature-based approaches — but advise tailoring approaches to local circumstances. In government, there has been a shift from the traditional, top-down regulatory and often siloed approach to water governance and management, toward more integrated and collaborative methods in support of innovation and adaptation. Such approaches as Integrated Water Resources Management require a more holistic view of the resource, incorporating water quantity, quality and ecosystem needs and the multi-level decision-making realities of water management.

Oregon, among other states, has made some attempts to better integrate its water management. However, the state remains largely siloed as agencies often focus on their distinct regulatory responsibilities. Furthermore, the practicality of integrated management has been somewhat limited given the fact governance and water management frameworks will need to accommodate a variety of local needs and circumstances. In fact, there is no universally recognized definition of "water governance," as researchers use varying conceptions of the term.[6]

Internationally acclaimed water management approaches:

Integrated Water Resources Management

Per the Global Water Partnership:[7]

"Integrated Water Resources Management is a process which promotes the coordinated development and management of water, land, and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems and the environment.

It involves:

- managing water at the lowest possible level,
- managing demand in addition to supply,
- providing equitable access to water resources through transparent and participatory governance and management, and
- establishing integrated policy, regulatory and institutional frameworks."

Nature-Based Solutions

The United Nations advocates for a rapid uptake in the use of Nature-Based Solutions to help sustain and improve water availability and quality, while reducing water-related risks, such as those caused by climate change.

"Nature-based solutions are inspired and supported by nature and use, or mimic natural processes to contribute to the improved management of water… The solutions can involve conserving or rehabilitating nature ecosystems and/or the enhancement or creation of natural processes in modified or artificial ecosystems. They can be applied at a personal or micro-level (e.g., a dry toilet) or a macro-level (e.g., landscape) scale." These solutions include the use of natural infrastructure to meet service needs defined on page 60.

While there are a wide variety of different governance systems and structures, observing certain key principles as discussed further in this report can help ensure the framework in place is robust and serves the needs of the public. United Nations Water has cautioned "Integrated Water Resources Management has been an aspiration for decades, but has often failed due to entrenched sectoral interests, political and governance barriers, and the lack of collective responsibility."[8]

[6] For purposes of this report, the Audits Division is using the definition of water governance provided by the Organisation for Economic Cooperation and Development.
[7] The Global Water Partnership is an action network with over 3,000 partner organizations involved in water resources management in 79 countries. The partnership provides knowledge and builds capacity to improve water management at all levels: global, regional, national, and local.
[8] United Nations Water is a coordination mechanism for the United Nations' work on water and sanitation comprised of United Nations entities and international organizations working on water and sanitation issues. Its role is to ensure these entities 'deliver as one' in response to water-related challenges.

Oregon water policy is not designed to be equitable

Oregon's Water Code prioritizes water access for right holders and largely excludes other water users

Oregon's Water Code dictates how the state's water may be allocated and for what purpose. To access and use water in Oregon, a potential user may need to secure a water right. Under Oregon's Water Code, right holders have priority access to water. Oregon Revised Statutes 536 through 541 guide state water policy and are codified under two principles: first, all water within the state belongs to the public and is held in trust by the state, and second, water can be appropriated for beneficial use under permit, but is subject to the existence of more senior water rights. This second principle is known as the doctrine of prior appropriation and provides the foundation for water law in most western states. The doctrine can be summarized as 'first in time, first in right." Priority of access to water is based on the date of the original water claim.

Irrigation water. | Source: CCO Public Domain.

Water rights in Oregon are issued by the WRD after a permitting and review process, during which the application can be subject to public comments and protests. Once granted, water rights are generally considered permanent so long as they continue to be used beneficially under the terms of the right. Water rights are tied to a specific point of diversion from a body of water (such as a stream or lake) and are to be used for a specific purpose in a specific area. They are predominantly held by landowners.

The water rights system prioritizes the needs of senior, or oldest, right holders above more recently granted rights, and above water use by those who do not have water rights, with some exceptions. Oregon law does not clearly outline a preference for kinds of water use and relies on the date of priority to determine who may use the water. Water right holders that have seniority are the last to be shut off during low stream flow. In general, they can access and use their full allocation of water until they are restricted by nature and can use their full allotment without regard for other users. Junior, or newer, right holders may have to restrict their water use to not encroach on the allotment of senior rights holders. The exception is when a drought is declared by the Governor, wherein the Water Resources Commission may give preference to stock and human consumptive needs.

Most domestic water users do not have and do not need individual water rights. Approximately 80% of Oregon residents are serviced by large- or medium-sized community water systems, which are generally protected by water rights and federal water quality legislation. However, residents served by private wells or small community wells, which make up roughly the other 20% of the population, are not necessarily prioritized under state or federal law or regulatory requirements under the Safe Drinking Water Act.

Federal law dictates Oregon's approach to managing water quality, including the Clean Water Act of 1972 and the Safe Drinking Water Act of 1974. Several related natural resource laws can impact water management in Oregon as well, such as local land use laws and forest and agricultural practices.

Fewer protections and a history of racial inequity puts some communities at higher risk

Water insecurity is not new to Oregon, nor does it affect everyone equally. Communities across the state are facing direct and urgent water access and quality concerns, but, as noted by the Oregon Water Futures Project, low-income communities, underinvested rural communities, and communities of color face unique barriers to achieving water security.[9] Communities that lack access to state decision makers or the resources to confront water insecurity concerns on their own are at risk of not being prioritized in the state's water decisions and not receiving necessary funding to address water infrastructure and planning needs.

Historical policy decisions affecting whether certain individuals could own property in Oregon or even legally enter the state have long been detrimental to non-white communities seeking access to water and water rights. When Oregon's Water Code was introduced in 1909, the United States and Oregon in particular had racist and exclusionary attitudes and policies in place. These include the federal Chinese Exclusion Act, passed in 1882 and remaining in force until 1943, which led to violence and mass expulsions of Chinese migrants living in Oregon.

Additionally, a series of laws passed in the 1840s and 1850s banned Black and mixed-race people from settling in the Oregon territory. The last of these laws was formally repealed in 1926. Tribes that had lived in Oregon for thousands of years were pushed onto reservations in the 1800s, only to face

[9] The Oregon Water Futures Project is a collaboration between water and environmental justice interests, Indigenous peoples, communities of color, low-income communities, and academic institutions. Through a water justice lens, the project aims to impact how the future of water in Oregon is imagined through storytelling, capacity building, relationship building, policymaking, and community-centered advocacy at the state and local level.

termination — the immediate withdrawal of all federal aid, services, and protection, as well as the end of some reservations — in the 1950s and 1960s.

These laws and the attitudes that gave rise to their passage prevented many non-white people from acquiring property or living safely in Oregon during a time when most surface water claims across the state were being staked. The majority of surface water rights in Oregon have now been claimed, predominantly for agricultural use and irrigation. Many such rights pre-date the law, going back to the late 1800s during the height of the state's most exclusionary policies. Water is also overallocated in many areas now, putting pressure on entire basins to this day to seek other sources.

Local Tribe fishing for Salmon at Celilo Falls, 1941. The falls were submerged in 1957 after the completion of the Dalles Dam. The Warm Springs, Yakama, Umatilla, and Nez Perce Tribes lost their ancestral fishing grounds. | Source: Library of Congress, Prints & Photographs Division, Farm Security Administration/Office of War Information Black-and-White Negatives.

Today, several of Oregon's federally recognized Tribes, the original inhabitants of the land, still seek to secure water rights. Some rural communities around the state are at risk of losing water completely and having to source it from elsewhere. Prairie City in Grant County has seen its community well repeatedly run dry, sometimes for months at a time. In 2021, the city had to truck in water to drink for over three months. Even those under the blanket protection of state and federal law face water insecurity — many Oregon residents on community water systems face increasing pressure to cover monthly water bills, particularly as communities have taken on more of the burden of water infrastructure investment from the federal government over the past few decades. Other residents

have urgent concerns over their water quality and its impacts on human health and well-being and the economic viability of their communities.

For this advisory report, the team considered the perspectives and experiences of communities considered to be at higher risk of water insecurity: domestic well users, underinvested rural communities, communities of color, and Oregon's federally recognized Tribes. Not all these communities have an established presence in water decision-making. They may not even be considered key stakeholders by state agencies charged with regulating, planning for, and managing the state's water. Water policy and management touches many areas and includes a wide variety of affected stakeholders, but in Oregon, not all domestic water users are explicitly protected under federal or state law and may not be systematically considered. The communities we heard from struggle with degraded water quality that could harm community health, dry wells, and unaffordable community water bills.

The Past is Prologue: The Klamath Tribes

The Klamath Tribes call themselves *Ewksiknii*, which can be translated as "people of the waters." They are a sovereign nation with 5,774 enrolled members as of September 2022, about half of whom live in Klamath County, made up of the Klamath, Modoc, and Yahooskin Tribes. The Klamath Tribes currently hold and manage approximately 5,000 acres of land in noncontiguous parcels near the community of Chiloquin in Klamath County.

The ancestors of the Klamath Tribes inhabited the Klamath basin for thousands of years and they consider the 22-million-acre basin to be their homeland. Native species endemic to the lake, including the C'waam and Koptu (two species of suckerfish), are considered centrally important First Foods.[10] The Klamath creation story compels the Klamath to protect the suckerfish. Historically, they shared the basin with other tribes, including the Yurok and Karuk Tribes located along the Klamath River in present day California.

Settlement had dramatic impacts on the Klamath Tribes and the ecology of the region

After white settlers began entering the region in growing numbers, the Klamath, Modoc, and Yahooskin-Paiute entered into a treaty with the federal government in 1864. The tribes ceded 20 million acres to the United States and retained an allotment of 2 million acres, where they would retain full rights to hunt and fish and could restrict access to their land and water by incoming settlers. Between 1864 and 1954, the Tribe's allotment would be chipped away to approximately 575,000 acres.

The 1864 allotment protected Tribal access to Upper Klamath Lake but did not protect it or the two larger lakes downstream, Lower Klamath Lake and Tule Lake, from development. At the time, the three lakes were among the largest in the western states, with significant biological diversity. This lake system is also part of the Pacific Flyway used by millions of migratory birds.

In 1905, the federal Bureau of Reclamation drained the two lower lakes to be converted into 200,000 acres of farmland and encourage more ranching and crop cultivation in the region. The Upper Klamath Lake was turned into a reservoir to be used by irrigators downstream. Settlers moved into the region in larger numbers to raise cattle and grow crops. They tended to use water-intensive agricultural practices potentially appropriate for the more humid eastern states, but not suitable for the Klamath Basin.

The Klamath Tribes sought out ways to protect their cultural identity and support their people, and during World War II established a robust and lucrative local lumber industry that made them one of the wealthiest tribes in the nation at the time.

[10] First Foods were the foods eaten by indigenous communities in North America prior to the arrival of European settlers. Many are still eaten to this day. First Foods serve an important role in Tribal health, well-being, and cultural identity.

Left: A photograph of the Klamath Basin Project. | Source: Oregon Encyclopedia
Right: The ancestral lands of the Klamath, Modoc, and Yahooskin covered over 20 million acres. | Source: Klamath Tribe

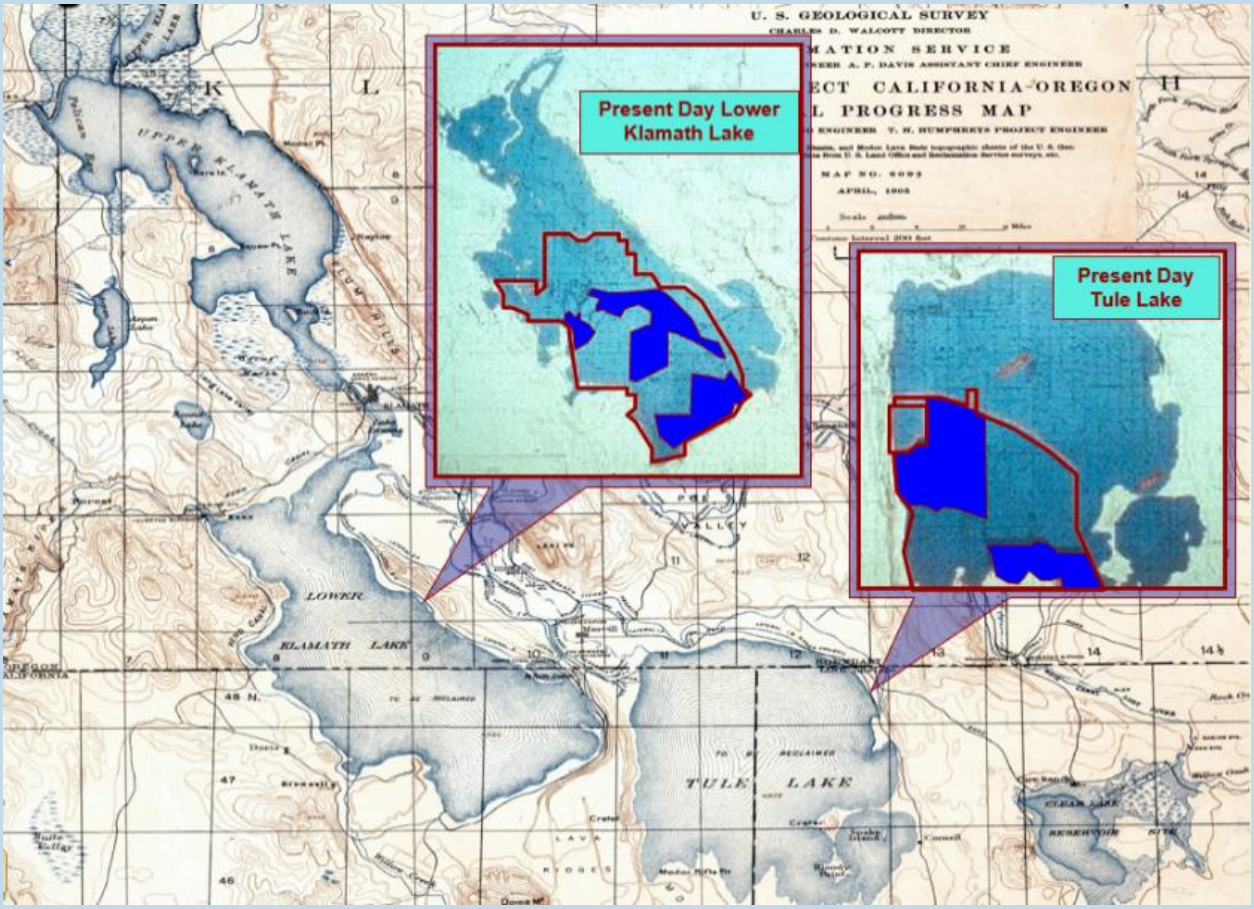
Though senior water rights were recently granted, lands taken from the Tribe after Termination have not been restored

In 1954, Congress passed the Klamath Termination Act despite Klamath Tribal members voting against it. According to the Tribe, termination was "about getting access to their forest lands."

The federal government took the Tribe's remaining 575,000 acres. Many people moved away. The bulk of the reservation lands were converted into the Fremont Winema National Forest, and much of the remaining land was sold to private landowners. Tribal fishing, hunting, and gathering rights were also restricted for much of this period. When federal recognition was restored to the Klamath Tribes in 1986 after decades of lobbying, no land was returned with it. The Tribe had only retained a few hundred acres. That same year was the last year that the Tribe was able to catch suckerfish in the lake and in local rivers — both suckerfish species were declared endangered in 1988. With widespread and ongoing practices such as free-range cattle feeding, which can degrade streambanks and causes phosphorus to leach into the lake when cattle are not fenced out of streams, Upper Klamath Lake was quickly losing ecological viability.

The Tribe began to purchase and acquire small parcels of land around Klamath County and participated in the process of water rights adjudication. In 2013, after decades of lobbying and arbitration, the Tribe was granted time immemorial water rights, making them the senior right holder in the Basin. Recent efforts between the Tribe, farmers, and local and state governments to come to an agreement over the best use of water have been largely unsuccessful.

As of 2022, the Klamath Tribes still held less than 1% of the land they held prior to termination in 1954.

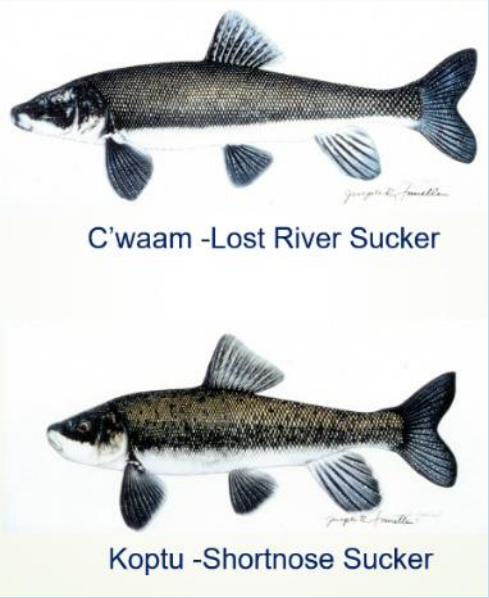


Present day Lower Klamath and Tule Lakes cover a fraction of their historical spread. | Source: Klamath Tribes

State and federal inaction on agricultural and industrial practices threatens Tribal welfare and regional ecology

Tribal leadership considers the time for compromise to have passed. The youngest generation of suckerfish that successfully reproduced in the wild were born in the 1990s and are nearing the end of their lives. The Tribe estimates suckerfish will become functionally extinct in the wild in about 10 years. A lake that once supported tens of thousands of pelicans now only has a few hundred nesting pairs. Downstream on the Klamath River, fish kills from algae blooms are also killing off salmon, a fish of critical importance to the Yurok and Karuk Tribes. Lower Klamath Lake and Tule Lake are also struggling. According to Klamath Tribal leadership, "…the remnants are reduced to what USFS calls "sumps," basically puddles that struggle to receive water. Large disease outbreaks have occurred among migratory birds as a result of low water."

According to Tribal staff, Upper Klamath Lake is "like a tapestry. You can see that it was once richly threaded, but it is now threadbare." The Tribe works closely with state agencies like the Department of Environmental Quality, the Oregon Department of Agriculture, and the Water Resources Department, and has lobbied to increase staffing for enforcement in the region. They want agencies to regulate more effectively, but for them to do so, certain state policies need to be addressed and agencies must be properly staffed.



The two species of suckerfish endemic to Klamath Lake are now endangered. | Source: Klamath Tribe

The Tribe wants more representation from the state agencies in the region. With current staffing levels and policies that hamper effective regulation, the agencies are unable to proactively address water use issues or ecological concerns.

Policies that concern the Tribe include the Department of Agriculture's 10-step compliance process, which is triggered primarily by complaints and can reportedly take years to deliver fines to water abusers. The Tribe considers rules around cattle grazing to be ineffective, nonsensical, and almost unenforceable. For example, it is legal for cows to enter or be near a river, but it is illegal for cows to "impact riparian areas or poop in the water." As of 2022, only 5% to 10% of the riparian areas in the upper Klamath Basin were healthy. The rest have been impacted by free-range cattle and other agricultural practices.

The Tribe is cautiously optimistic about recent federal investments into ecological restoration in the region but has substantial concerns about ongoing agricultural practices and state policies that do not sufficiently protect against rampant environmental degradation. This issue, combined with the impacts of climate change and the ongoing drought, has put substantial pressure on all the water users in the region. Tension is high.

Tribal representatives told the Audits Division it has put them at odds with many of their neighbors and even other Tribes downstream as they petition to retain enough water in the lake every summer to keep the water cool enough for the suckerfish to survive. Unfortunately, that means there may not be sufficient water downstream to meet agricultural needs or ensure that the Klamath River has enough water in it for salmon.

According to the Tribe, one of the most effective things that can be done to restore the ecosystem right now is simply to stop doing it active harm. "Just let the willow trees grow on the banks… Let nature restore itself. Stop getting in the way." Yet that will require the Tribe have a more direct hand in land and water management across the basin, with ongoing state, federal, and local coordination. For the local ecosystem and the Tribe to endure and thrive, the state must do more to ensure the kinds of industrial and agricultural practices used in the basin are ecologically appropriate and may need to reconsider water use in the region entirely.

The Klamath Tribes continues to buy land and have made it clear that their end goal is the full restoration of their traditional lands to Tribal ownership and stewardship.

What Has Oregon Done in the Past to Address Issues of Water Governance?

Oregon has struggled for decades to establish a robust water governance structure to help meet the state's needs. The state continues to face challenges defining and improving its role in water governance and in updating and enforcing water policies that protect water quantity, quality, and ecosystems.

The introduction of Oregon's Water Code in 1909 was borne out of a need to manage the resource for the new state

Prior to the settling of the western United States, states in the eastern half of the country loosely followed the Riparian Doctrine, which was based off English Common Law and dictates the right to water belongs to whomever owns the property where the water is located. In the arid western states, prior appropriation was developed to address difficulties with water access. Prior appropriation as we know it today is considered to have originated following the California Gold Rush, where water was diverted out of streams and rivers for mining operations and rights were tied to the point of diversion.

Onlookers stand above a hydraulic gold mining operation in the late 1800s. | Source: Oregon Blue Book, Courtesy of Oregon Historical Society

In the 1800s, Congress invested heavily in infrastructure, including constructing dams, with the intention of developing the West's water resources to meet the agricultural and industrial needs of the growing nation. This new approach to water management in the West was not without controversy. John Wesley Powell, who headed the U.S. Geological Survey, opposed the direction the United States was taking around water management and water development. He did not believe that the lands of the West were suitable for agriculture and instead offered a vision centered on organizing small settlements built around watersheds, which would encourage collaboration and conservation.

Regardless, large water projects diverting rivers and draining lakes to irrigate crop fields were funded on a massive scale across the West. A series of federal laws were passed starting in the 1860s addressing natural resource use (particularly around mining). However, these laws provided little guidance on the allocation of

scarce water resources. In the decades following, policies around water allocation became the purview of individual Western states as they experienced rapid transformation under settlement.

> **"I tell you gentlemen you are piling up a heritage of conflict and litigation over water rights, for there is not enough water to supply the land."**
>
> *- John Wesley Powell, 1893*

After lobbying from business and agricultural interests, Oregon followed the example of other western states to introduce its own water code in 1909. The new law declared water a public resource held in trust by the state and required a permit for its use, which must be determined to be beneficial and used without waste. It also introduced a court-based process for settling water right disputes on claims pre-dating the introduction of the Water Code. Oregon's Water Code was an effort to create order where "...no foundation existed for titles to water. Utter confusion prevailed as to the legal status of a water right."[11]

While the Water Code created order, it was not designed to equitably allocate water resources to meet a balance of needs, particularly in the long term. Prior appropriation's origins in the mining camps of California held an economic view of water as an inert and isolated resource to be moved and used as needed, and not as a dynamic and integrated resource necessary to the health and functioning of entire ecosystems.

Since 1909, some updates to the Water Code have attempted to assert a greater balance of interests, such as the introduction of instream rights, or rights designed to hold water in the stream to protect local ecosystems, in 1987. There have also been efforts to better integrate the various state agencies whose roles and responsibilities affect water usage. These efforts have met with limited success.

Since the 1950s, Oregon has several times attempted to overhaul statewide water planning and management, but never developed a comprehensive plan

Legislation passed in 1955 established the state's basin programs, though they remained uncoordinated and limited in scope

Oregon sought to create an integrated water policy as early as 1955, when the Oregon Legislature passed House Bill 25 to establish a new state agency, the State Water Resources Board, a predecessor to the current State Water Resources Commission.[12] The board had broad authority to establish a coordinated, integrated water resources policy and the plans needed to promote the maximum beneficial use and control of water resources.

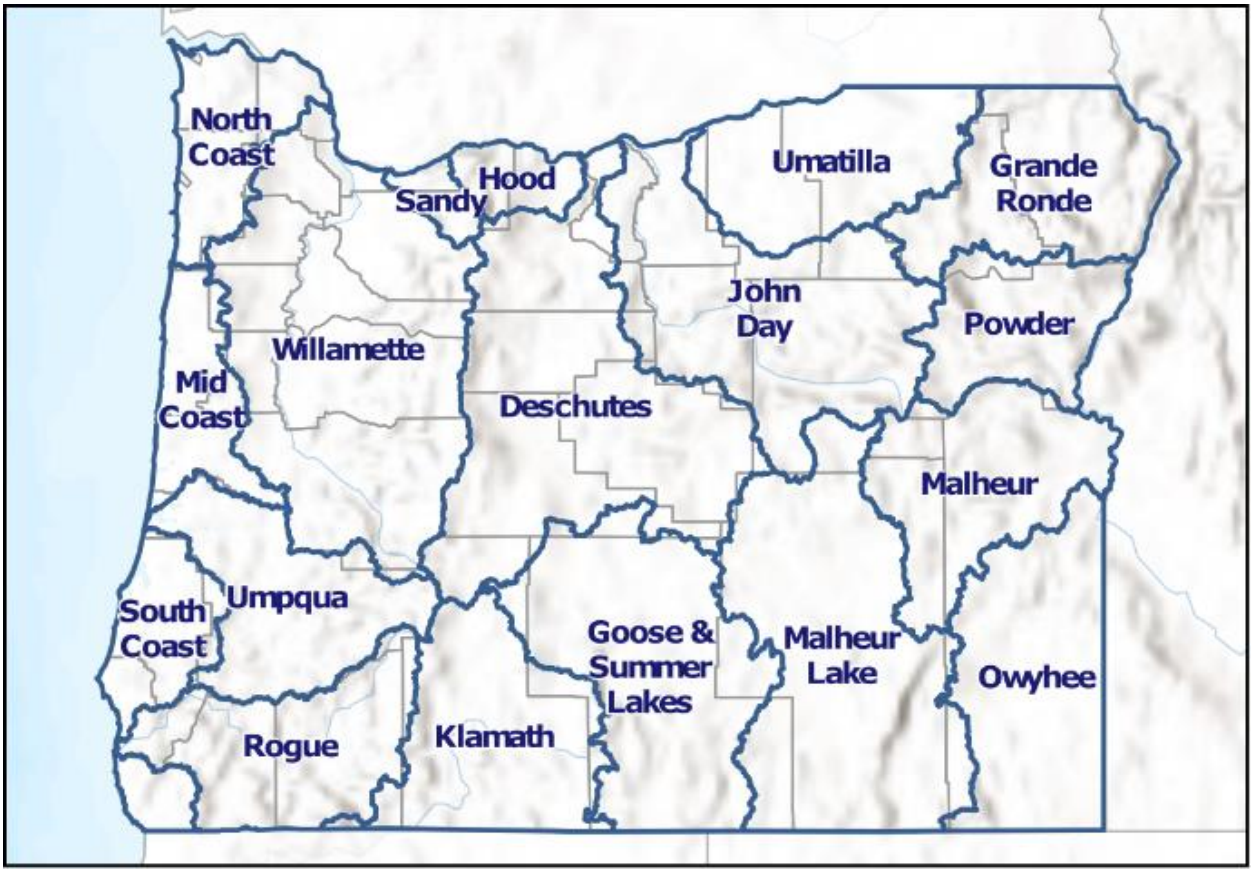
To achieve this, the state developed basin programs for most of the state's 18 river basins overseen by the Board, and now the Commission. The programs consist of state administrative rules classifying available water for future allowable uses (municipal, agricultural, and wildlife) and regulations specific to

[11] The Oregon Water Handbook. Rick Bastasch. 2006. Pg 54.
[12] The Water Resources Commission oversees and establishes the policies for the Water Resources Department, which is charged with administering the laws governing the management and distribution of surface and groundwater resources.

each basin, such as minimum stream flows. These largely state directed regulatory programs were adopted by the board starting in 1959. By 1970, the state had established programs, which focus on water classification, for 15 of the state's 18 administrative basins. Program development and updates occurred intermittently into the early 1990s.

The state intentionally took a basin-by-basin approach to accommodate each basin's varying water needs and localities and did not develop an overarching strategy to help guide or support basin efforts. Most water-related management decisions were still made by individual agencies and local governments in a largely uncoordinated way.

Figure 4: Most of WRD's 18 administrative water basins have a basin program



Source: WRD

Oregon expanded state-directed basin planning to consider more holistic aspects of water management, but abandoned the effort

Amid concerns about Oregon's fragmented approach to water management and long-term sustainability, the Legislature in 1983 passed bills in an attempt to establish a state-led, strategic, and coordinated interagency approach to water planning.

A bill created the Strategic Water Planning Group,[13] consisting of the Governor's Office and representatives from nine natural resource agencies. The interagency group was tasked with

[13] Senate Bill 523 passed in 1983. Senate Bill 605, passed in 1985, called for continuing interagency coordination of water planning and management in creating the Strategic Water Management Group of a similar makeup. However, unlike 523, Senate Bill 605 did not require the new group to develop a Multiagency Water Management Plan tied to expanded basin planning.

developing a multi-faceted water management plan for river basin management to address multi-agency concerns and improve water resource conditions. The law outlined requirements for a coordinated and expanded planning process for water basins, which would integrate different aspects of water management, including surface and groundwater, and water quantity and quality. Participating agencies were also required to coordinate on budget development and develop a shared data system.

To test the new process, the state undertook extended planning for the John Day Basin Program;[14] the Water Resources Commission adopted the resulting plan in 1987. However, per a 2013 memo to the commission from Water Resource Department policy coordinators, the effort was "criticized as being overly expensive and failing to produce an interagency agreement on water resources management."

Bonneville Dam, 1941. | Source: Library of Congress, Prints & Photographs Division, Farm Security Administration/Office of War Information Black-and-White Negatives.

By the early 1990s, the Legislature had largely moved away from basin planning. Key stakeholders told auditors the process was considered too "top down" by some, and "planning" came to be known as a bad word in Oregon. Overseen by the Water Resources Commission, the programs remained a largely regulatory function. In the early 90's, the WRD section responsible for basin program updates and

[14] The John Day Basin program is one of WRD's administrative basins within Oregon's North Central regional river basin management area. The most recent study report for the basin was published in 1986 and can be found with the basin's program here: https://www.oregon.gov/owrd/programs/administrativebasins/Pages/default.aspx#b6

water policy and planning was dissolved. The state had little capacity to continue to update basin programs even for regulatory purposes.

Since then, the state has gone without comprehensive water supply planning. During much of this time, WRD has not supported basin planning in a coordinated or systematic way, and instead provided support on a case-by-case basis to locally initiated planning efforts. Most basin programs have not been updated since the 1980s. According to WRD, resource constraints, such as reductions in state and federal funding, are a key limiting factor. The programs remain an important water allocation tool and are still considered by WRD during the permit process but have been limited in their ability to protect the state's water resources.

Oregon shifted focus in the 90's to a locally driven, collaborative governance approach to watershed restoration

Oregon watershed legislation and shifts in watershed management during the 80's and 90's reflected the state's evolving approach to water governance. Rather than taking a directive approach, the state emphasized voluntary, locally initiated actions guided by the state at a distance through grants. In response to growing concerns about federal listings of threatened and endangered fish species, major statewide reform initiatives focused on environmental species protections and watershed restoration. Other aspects of water management remained largely unchanged during this period.

In 1995, the state began developing what came to be known as the Oregon Plan for Salmon and Watersheds, a new effort to unify the state around a central water-related plan. The plan started as a state-led strategy and proposal for the federal government to avoid listing salmonid species under the Endangered Species Act. Eventually, the plan broadened to encompass additional watershed management issues.

The innovative plan[15] took a holistic approach to protecting ecosystem health and water quality and considered other factors, such as land management practices. In addition to promoting multi-state agency coordination, the plan emphasized the need for locally driven watershed initiatives. Per the Oregon Department of Fish and Wildlife: "The most important part of the plan is the idea that people working together, with the support of state and local government, can do more to help fish than can be accomplished by a strict regulatory approach." The plan leveraged the state's grant-making for local voluntary watershed councils that began to form in the 1980s with grassroots efforts as its key mechanism for salmon recovery and river restoration. Soil and Water Conservation Districts were also funded to focus on agricultural nonpoint source pollution and implement the Oregon Plan on agricultural lands.

[15] The plan was considered a finalist for the Innovation in American Government awards by the Harvard Kennedy School Ash Center for Democratic Governance and Innovation.

In 1999, the Legislature formed a lasting institutional structure to help support plan implementation by creating the Oregon Watershed Enhancement Board (OWEB), using significant dedicated funding to grants from a ballot measure passed by voters the prior year.[16] The measure, extended in 2010, allocated a portion of state lottery dollars for watershed restoration grants, which remain the bulk of on-the-ground funding and an essential funding source for the board's staffing and grantmaking. The board includes voting members from the public, Tribes, and state agencies, in addition to non-voting, advisory federal agency and state university members. Responsibility for plan implementation also falls to multiple state agencies connected to fish, wildlife, and water quality, working with local partners, with related agency programming supported by state lottery dollars.

While OWEB continues to support important statewide natural resources efforts through its grantmaking, neither the agency's programming nor the Oregon Plan for Salmon and Watersheds were ever intended to ensure all water needs are met for current and future generations. In practice, the state relies heavily on local partners for on-the-ground watershed restoration work, and local partner capacity is a limiting factor in the pace of restoration that can occur. In addition, as a competitive grant program with limited funds, not all communities applying for funding to address water and ecosystem needs receive funding, and only those adequately resourced and organized can apply. Of the communities that can apply, staff told auditors only half receive funding. State lottery funding supporting agency work on plan implementation is also limited.

Oregon has not maintained a comprehensive water policy and management approach partly due to fluctuating priorities from changes in elected leadership

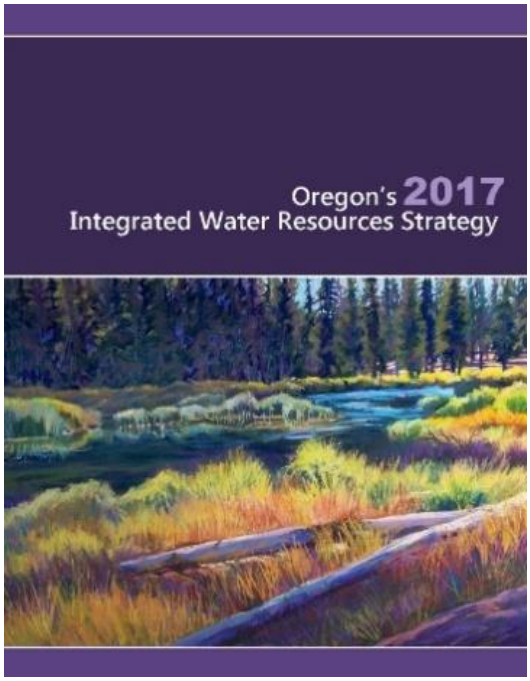
A pattern has emerged over the decades: with changes in gubernatorial, legislative, and agency leadership, the state has pursued different initiatives to coordinate state participation and support more holistic and strategic water management. However, as leadership changes have occurred alongside other social and environmental pressures, each of these reform attempts has eventually lost momentum, deviated from earlier reforms, or failed to sustain attention, commitment, and a vision for water planning or priority setting.

Governor Vic Atiyeh spearheaded expanded basin planning in the 1980s, but the legislation adopted at the time never led to coordinated and strategic water planning. The state group leading the effort was ultimately dissolved by the legislature. Governor John Kitzhaber deviated completely from basin planning to take an instrumental role in establishing the Oregon Plan for Salmon and Watersheds, garnering considerable legislative and financial support for its implementation at the time — it, too, eventually lost leadership's focus. Neither effort has led to a comprehensive water strategy.

The **Strategic Water Management** group, made up of representatives from the Governor's Office and 13 state agencies, was a centralized coordinating body aiming to ensure agency functions were complementary and not conflicting. The group was active from 1985 to 1995 and dismantled during the state's push to adopt more locally driven water management. Some of this entity's functions are now carried out informally by the Water Core Team and Natural Resources Director's Cabinet.

[16] Ballot Measure 66 passed by Oregon voters in 1998 amended the Oregon Constitution to dedicate a portion of lottery proceeds to finance the restoration and protection of native salmon populations, watersheds, fish and wildlife habitats and water quality. Measure 76, passed by voters in 2010, extended and modified the provisions.

Critical reports in the early 2000s noted the ongoing need for strategic improvements in addressing the state's water challenges. In a 2000 State of the Environment report, several Governors recognized that too often state decisions about how to manage the environment have been characterized by polarizing debates and a lack of scientific information. In a 2003 report, the Joint Legislative Task Force on Water Supply and Conservation recommended the state develop a long-term water supply management plan. The report noted "despite basin planning efforts dating back to the mid-1950s, the state does not have a comprehensive plan to ensure it can meet the water needs of streamflow dependent resources and a growing economy and population."[17]



In 2009, when Oregon was reportedly one of two states in the nation without a statewide water plan, the Legislature passed the Integrated Water Resources Strategy (IWRS) to address maintaining healthy water resources to meet Oregon's current and future water needs. The legislation specified the strategy should implement the coordinated, integrated water resources policy codified in statute in 1955. An advisory group met and several state agencies and key stakeholders were involved in development. The strategy also took a holistic approach to incorporate water quantity, quality, and ecosystems, as well as all uses of water into the document. The state updated the IWRS in 2017, with another policy advisory workgroup, and both plans resulted in legislative investments.

Just one year later, however, this effort was sidelined by a separate initiative from Governor Kate Brown. The new initiative led to a high-level strategy document, "100 Year Water Vision: A Call to Action," published in 2020. While the vision helped draw attention to water challenges and was intended to elevate aspects of the IWRS, it was not aligned with it. As detailed later in this report both plans and efforts have had mixed results.

These well-intended, but fractured, efforts have left the state unable to fulfill the intentions set out by leadership for improving water management, and, along with other factors, have seriously impeded the

[17] Final recommendations to the 72nd Legislative Assembly. Oregon Joint Task Force on Water Supply and Conservation. June 2003. See page 21. https://digital.osl.state.or.us/islandora/object/osl%3A989212

state's ability to plan for and promote water security for all Oregonians. This has so far been particularly impactful for vulnerable communities susceptible to drinking water safety and affordability challenges; meanwhile, water security risks such as climate change continue to add pressure.

Oregon's most recent initiatives hold promise, but there is much more work to do

Since the 2020 release of the Water Vision report, the state continues to engage in the following significant statewide water planning and management efforts:

- In 2021, the Legislature and Governor Brown passed a $538 million water package, making an unprecedented investment in Oregon's water resources. The package included investments in a range of water initiatives, with most funding directed toward infrastructure improvements and regional- and basin-specific projects.
- The Department of Environmental Quality was charged with scoping a data portal project to improve water data accessibility and identify gaps in statewide water data.
- House Bill 5006, passed in 2021, directed WRD and the Oregon Consensus, a Portland State University mediation and facilitation program, to convene a workgroup to reconsider the state's approach to water planning and management.

As Oregon proceeds into the 21st century, it has yet to find a coordinated approach to water challenges. What the state does have is 100 years of history to learn from:

- Leaving out key stakeholders and Tribes— including vulnerable communities who have suffered from inequitable treatment by the state and federal and local entities — from policy decisions can harm those communities.
- Water planning cannot be entirely localized because it leads to fragmentation and a lack of coordination among individual communities. Some broader public interests are not considered, and some key players are left out.
- It also cannot be driven entirely by the state; too much "top-down" direction can cause resentment among local stakeholders and does not adequately account for varying needs across different communities.
- Changes in state leadership have made it difficult for a sustained focus on a shared set of priorities for water security and equity.

A coordinated effort by the state will require the involvement of multiple entities. This includes local communities and governments, as well as those who have suffered from inequitable treatment in the past; the federal government; Oregon Tribes; numerous state agencies with responsibilities of varying degrees tied to water use; adjacent states; and state leadership, primarily the Governor and the Legislature, among others.

These numerous stakeholders will have to strike a balance to be successful in planning for water management. On the one hand, the planning process must respect individual and varying needs across different communities, or regions; on the other, it should also include a holistic, statewide vision that accounts for long-term sustainability of our water resources and their equitable use. In other words, a state and regional water planning framework.

What Does Oregon Need to Do Now?

Timely and decisive action is needed to address deficiencies in Oregon's water governance and improve water security and equity

Because the landscape of water resources and accompanying need varies so widely from state to state, there is not a generally accepted framework or model for Oregon to adopt. While Oregon can learn from strategies adopted by other states it needs to develop a governance approach based on Oregon's unique needs and risks. To help guide this effort, state leadership should follow the principles of good water governance, which will help ensure the best chance of long-term success.

Oregon has already taken some important steps to set up a state-supported regional framework, but more work needs to be done to ensure this effort meets the needs of communities across the state. Underlying all of this is a particular urgency: many communities are already struggling with water security and inequity, but as climate change advances, water insecurity may ultimately threaten the environmental and economic well-being of the entire state, even rendering some regions economically unviable and difficult to inhabit.

Applying principles of good water governance through a well-structured and supported state and regional planning framework will help ensure equitable water security for Oregonians

Developing a state and regional water planning framework can help align Oregon with leading practices and create an avenue for more community involvement in key decisions around water management. Stakeholders at all levels should be involved in local water security solutions. Leading water management practices emphasize policies should be based on long-term management plans rooted in the appropriate scale, such as at a basin level. Yet without a sound framework and strong support, under-resourced communities may face barriers to involvement in locally initiated planning and state-level water policy decisions.

There is no singular framework or model used in other states or countries that will fit Oregon's unique needs and risks. Leading practices recommend tailoring water management approaches to local environments and circumstances. What works well in one state or region may not be effective elsewhere, depending on the region' water profile, what local industries are in place, and how water policy is set up to guide water management.

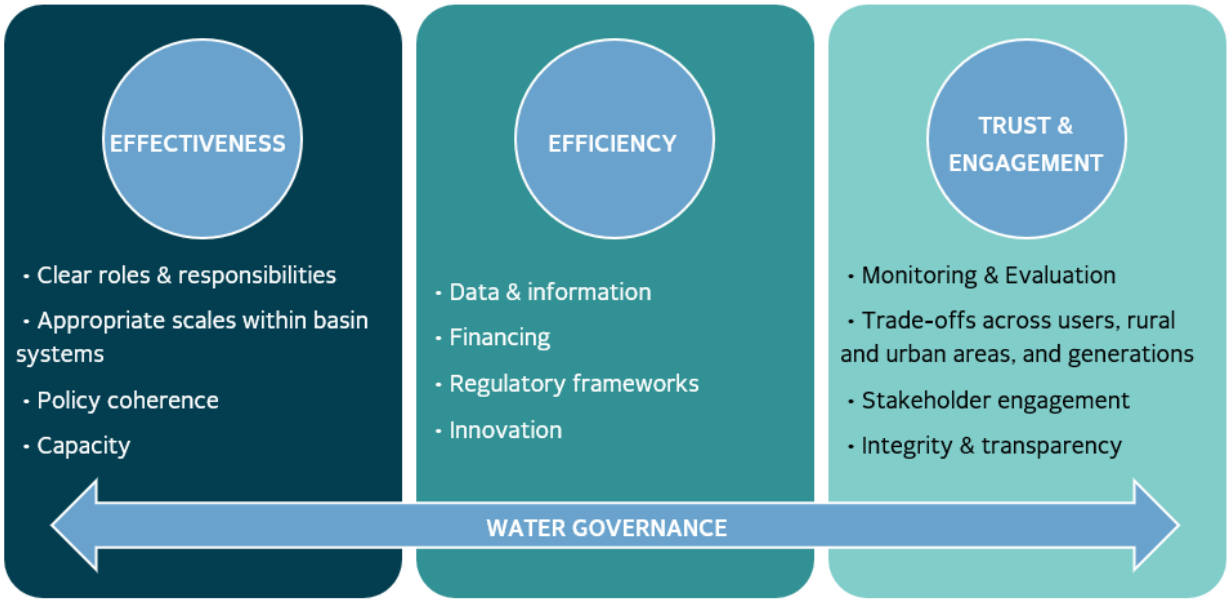
While no single best practice model exists, Oregon can possibly look to specific elements of other state's approaches to inform the development of our own model. For example, some other states have taken a "formal approach to locally-led planning, with direction and financial investments coming mainly through state resources."[18] Colorado and Texas have set up regional structures that allow for planning to encompass the entire state and prioritize needs across basins. These regional plans roll up and inform a state-level plan, and both states also have dedicated funding mechanisms for supporting plan implementation.

[18] 2012 Integrated Water Resources Strategy.

If well-developed and thoughtfully structured around the principles of good water governance, frameworks for regional and state water planning can support legitimacy in decision-making at both the state and local levels and provide effective communication conduits to promote compromise and pragmatism. These frameworks can also provide pathways for communities to address water challenges and access state support and funding, as well as support public engagement and balancing interests at the local level to develop action-oriented implementation plans. A robust framework can support equity, water security, making timely progress, and accountability in engaging groups of individuals to work together toward defined, shared outcomes and deliverables.

Regardless of the exact structure developed, a state and regional planning framework must be prioritized by the Governor's Office and Legislature and adhere to principles of good governance to better meet the state's long term water needs. Integrated water resource management is generally accepted as a best practice in the water arena. According to the international Organisation for Economic Cooperation and Development[19] (OECD), while this approach is a best practice, it has brought uneven results in different countries. It requires an operationalization framework that consistently and sustainably considers short-, medium-, and long-term needs.

Figure 5: The Organization for Economic Cooperation and Development captures the main principles of water governance



Source: OECD

The following principles were developed by OECD for governments seeking to strengthen their water governance and are centered on three main dimensions:

- Effectiveness, defining and implementing clear and sustainable water policy goals;
- Efficiency, maximizing the benefits of sustainable water management at the least cost; and
- Trust and engagement, building public trust and inclusivity of stakeholders.

[19] The Organisation for Economic Cooperation and Development is an intergovernmental organization with 38 member countries with a goal of stimulating economic progress and world trade through policy development and the development of international standards.

These principles are rooted in broader principles of good governance: legitimacy, transparency, accountability, human rights, rule of law, and inclusiveness.

Oregon has started to develop pieces of a state-supported regional planning framework, but critical aspects of good water governance still need attention

The state attempted to build an integrated planning framework in 2012, with the first IWRS and it recommended place-based planning as a way to support the strategy's implementation at the local level. The IWRS sought to help the state adopt a broader and more holistic, integrated, and long-term plan for water resources. However, Oregon's current fragmented agency structure undermines the potential for the strategy's implementation, and place-based planning, which has not yet been fully established, was found to require additional state support.

> **"Oregon's once-progressive system of public ownership and management of waters too often operates, not in support of the public's interests, but in isolation from them."**
>
> *- The Oregon Water Handbook, 2006. Rick Bastach.*

In 2021, with the passage of House Bill 5006, the Oregon Legislature recognized the need for "a framework and path for state-supported water planning and management at the water region and/or basin level." This framework could support setting up the structure needed to sustain the state's focus on carrying out integrated water plans and help guide state water strategy, investment, and policy decisions. The framework's specific attributes and how it intersects with the state will be critical to ensuring it helps meet Oregon's water needs.

The bill tasked WRD with coordinating with Portland State University's Oregon Consensus[20] to convene a workgroup of water stakeholders to develop the framework. Since January 2022, members have been working in monthly meetings to understand and accomplish their difficult charge. The workgroup was intended to have balanced interests, which meant assembling a group with specific and, at times, conflicting priorities for water. In response to some initial confusion about their broad and vague assignment, in September 2022 legislators and agency leadership overseeing the effort refined the project scope to address whether place-based planning should be continued. The WRD Director clarified this could involve redefining the future of place-based planning and the group's recommendations could address specific program needs or broader system-level issues.

The group engaged in collaborative discussions to develop draft recommendations. With members representing various interests, the effort appears to also support building the political clout necessary to back their eventual proposal. Legislators overseeing the effort expected final workgroup recommendations for the 2023 legislative session.

Place-based planning has only been tested as a pilot program scheduled to sunset in the spring of 2023. The state is in the process of defining a path forward for the program, with WRD submitting a legislative concept for its continuance.

[20] Oregon Consensus is part of Portland State University's National Policy Consensus Center. They provide expert mediation and facilitation services for government and non-government entities to address public policy issues.

Place-based planning is a flexible, voluntary approach to engaging communities in water management strategies and solutions. As an integrated approach to water management, it has been popular among many water stakeholders in Oregon. The approach extends beyond water regulation to allow for innovative actions proposed from the bottom up. Oregon's four pilot projects were supported by WRD grants and technical assistance.

The place-based planning pilot has also revealed risks. Without elements of a necessary structure and adequate state guidance and support, there is a risk this planning will be inequitable and ineffective. Statute does not address whether or how place-based planning is going to inform IWRS development. How local plans should inform state-level water strategy or be implemented remains unclear. As locally initiated efforts, the approach cannot easily address all communities in need across the state. The pilot projects demonstrated a need for substantial resources and the state has dedicated limited capacity to planning. These hurdles and data deficiencies, often requiring assistance from the state in addressing, interfered with plan development.

WRD hosted community meeting. | Source: WRD

An evaluation of the pilot also identified the necessity to clarify the state's role in supporting planning efforts and implementation. The workgroup addressed many of those questions and worked to develop recommendations for a state-supported regional planning framework.

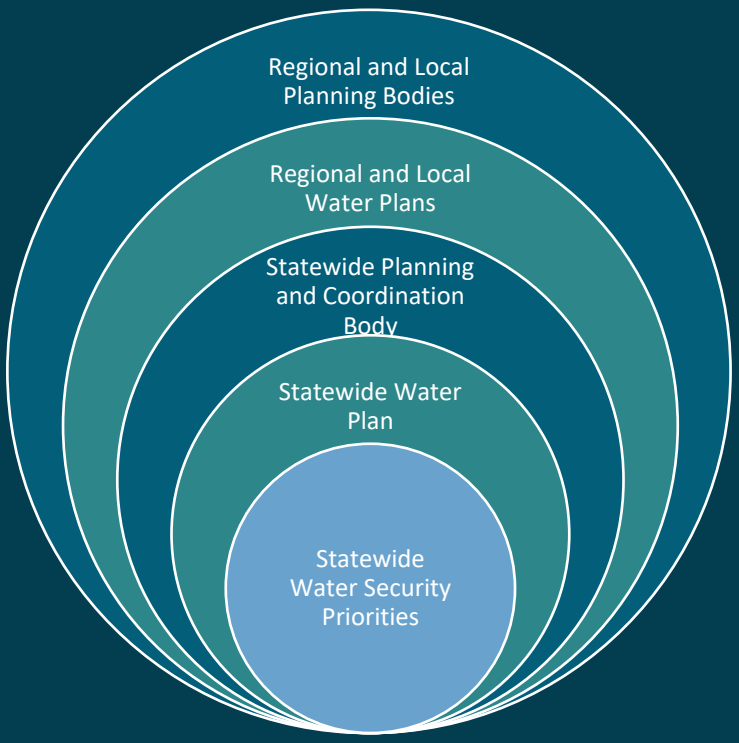
The workgroup's final report was sent to key legislators, the outgoing Governor's Office, and key agencies in December 2022. The report's recommendations focus on increasing agency capacity to support planning, and on improving and expanding the next generation of place-based planning projects. Most of the recommendations are specific to place-based planning and revolve around establishing a process for state recognition of place-based plans, enhancing agency capacity and support for planning, setting up a grant program, developing more robust program guidelines, and sustaining funding.

The regional workgroup's recommendations will expand upon previous place-based planning efforts but may not go far enough in developing a robust regional framework and water governance model that supports a wide spectrum of water needs. State involvement in the group was confined to three state agencies acting as support staff, three legislators, and the Governor's Office. The recommendations do not address the need for policy reform to enhance water security for Oregon communities and place substantial responsibilities on a handful of state agencies. However, it was not the workgroup's charge or intent to comprehensively address the state's water governance gaps.

While focused mainly on place-based planning, the workgroup's recommendations are helpful to enhancing and building upon the state's existing approach to regional planning and are largely in line with the recommendations in this report. Community and stakeholder participants in the workgroup also showed an overall high level of support for the final recommendations. How the state moves forward on them will be critical to the success of any water planning approach the regions or state pursue.

What could an Oregon water framework look like?

The framework should be centered on shared priorities of water security and support statewide and regional planning and a broad spectrum of associated water governance needs. These needs include data, funding, Tribal and community engagement, interagency and multi-level coordination, and policy development. The framework could be supported by a central planning and coordination body that works with entities involved in local and regional planning.



Note: This diagram is meant to serve as a hypothetical example of what a framework could look like in Oregon; it is not a recommendation by the Audits Division.

A statewide planning and coordination body and regional and local planning bodies could include state, federal, and local agencies, legislators, community representatives, Tribes, and key water stakeholders. A statewide planning and coordination body could potentially perform the following actions:

- Work closely with regional and local planning bodies, state agencies, Governor's Office and Legislature, and Tribes
- Develop statewide water security priorities with regional input
- Develop state water plan with regional input to inform and guide regional planning and implementation
- Make statewide policy recommendations

Regional and local planning bodies could potentially perform the following actions:

- Work with statewide planning and coordination body, local communities, Tribes, key stakeholders, and agency representatives
- Develop local and regional water plans, guide implementation
- Ensure state water security priorities reflected in regional and local plans
- Make regional policy recommendations

Many important aspects of water governance need to be considered when developing a state framework

The Audits Division identified multiple areas in Oregon's water governance that need attention to better protect water security and enhance water equity. To ensure Oregon can equitably serve all the water users of the state, the development of a state water governance model will need to include the following components, which reflect the core principles of good governance outlined by the OECD around effectiveness, efficiency, and trust and engagement:

- Priorities centered on water security and equity shared by state leadership and agencies that can guide water decisions
- An actionable and equitable state-level water plan based on shared priorities connected to local and regional planning efforts
- A formal planning and coordination body to enhance statewide water governance
- Clearly established agency roles and responsibilities within a state and regional framework to ensure there is no operational overlap or gaps in service
- A balance of interests and means to address high priority needs by integrating more communities and diverse voices into water management decisions
- Broader public awareness of the state's water challenges
- State water policy prioritizing the human right to water and more exploration of policy options that could better protect community and ecosystem health
- Data that can support strategic decision-making within a regional framework
- A strategic approach to funding supporting statewide planning and implementation and adequate and stable funding for key water agencies
- Clear leadership support for state water agencies tasked with carrying out critical regulatory duties.
- The full integration of Oregon's Tribes as equal partners into state and regional water decision-making.

Tribal integration into water decisions will be an especially critical component of a state and regional framework. Oregon Tribes the audit team spoke with apply a holistic view of water and other natural resources to their programs and work. Tribal land and water management practices tend to align with leading practices and are culturally significant and ecologically appropriate for their homelands. Furthermore, integrating Oregon's Tribes into water decision-making can help the state take important steps to address past harms and ongoing practices that disadvantage the land's original inhabitants.

The framework should apply broadly to water quantity, water quality, and ecosystem needs. It should build on the state's recent efforts around the Integrated Water Resources Strategy, the 100-Year Water Vision, the 2021 Water Package, and the ongoing efforts of individual state agencies, local jurisdictions and federal agencies, communities, Tribes, and key stakeholders, among others.

In developing the framework, there must be significant consideration of the complex layers of state, federal, and local water policies and practices. State leadership will need to ensure that there is feedback and representation present from critical groups when making decisions that impact that state or a specific region.

Comparison of statewide water strategy development initiatives (2009-present)

IWRS	Similarities	100-Year Water Vision
Established by the Legislature in 2009 and remains in statute.		Initiated by the Governor's Office in 2018; never in statute.
Developed primarily by WRD in coordination with other state agencies and a public advisory committee.	Developed primarily by one state entity with some public involvement.	First phase led by the director of the Oregon Watershed Enhancement Board and included an extensive public engagement process.
Intended to be an integrated strategy to meet Oregon's water needs.	High-level strategy documents.	Intended to help guide Oregon into the future on planning for and investing in water infrastructure, to draw legislative investments, and elevate aspects of the IWRS.
Statute requires IWRS be updated every five years.		A stand-alone statewide water planning and management development process, in two phases.
The 2017 IWRS update details many of the water challenges facing the state and lists 51 high-level recommended actions with more detailed suggestions for implementation.	Detail many of the water challenges facing the state and suggested recommendations for future water efforts.	Phase I, published in 2020, details many of the water challenges facing the state, articulates a vision and goals for improving the state's water security, and identified objectives for phase II.
The next version is slated to be released in 2023.	Responsibility is now primarily on WRD.	Phase II included several legislative investments and initiatives related to the objectives. Responsibility for its implementation shifted from OWEB to WRD.
Statute requires the IWRS be designed to meet Oregon's water needs. Both versions recognized this will require understanding those needs and proposed initial steps for doing so. For example, under the general goal: "Understand Water Resources Today," both versions have included the recommended action: "Improve water resource data collection and monitoring."	Advocate for obtaining foundational water information and developing additional governance structures to help meet Oregon's water needs.	The Governor intended for Phase II to help establish a state and regional structure for how water investments should be strategically coordinated and prioritized. This would involve developing recommendations for the framework and changing how the state approaches different aspects of water management in the areas of community capacity, water funding, data, and public engagement.

Developing shared priorities among state leadership and agencies on water security and equity will help guide Oregon in making holistic and inclusive water decisions

State leadership focus on water since 2000 has been intermittent. In 2009, the Legislature spearheaded the creation of the IWRS, released in 2012. The Legislature also reintroduced the House Water Committee in 2018-19, and in 2020 the Governor's Office released the 100-Year Water Vision.[21]

[21] See Appendices F ang G for 2017 Integrated Water Resource Strategy Recommended Actions and the Updated 100-Year Water Vision Goals and Objectives.

Several water bills have been introduced that have shifted more federal funding toward badly needed water projects.

However, both the IWRS and 100-Year Water Vision have not received the kind of sustained support needed to fully develop and implement achievable goals. Both efforts provided benefits at the time of their release, such as standing up a place-based planning pilot and the passage of the 2021 Water Package. In terms of high-level strategy, the two efforts appear duplicative — while state leadership reported the 100-Year Water Vision was needed as an implementation mechanism for aspects of the IWRS, the Water Vision repeated much of the IWRS effort.

Both efforts were developed under different Governors and have some differences but also share similarities. For example, both efforts resulted in a high-level strategy document focused on characterizing current water issues and on developing methods for moving Oregon forward on addressing water management challenges but neither effort has led to actionable water plans.

Prior to the creation of the IWRS, Oregon was noted as lacking a "future focus" when it came to water, and the system was referred to as "the eight-track tape… of natural resource management schemes."[22] While some attention has gone to remedying the state's lack of a long-term water view, the system remains largely the same as it has been for decades, despite the need for greater leadership, more enhanced coordination, and an evolving policy approach.

Oregon needs to build on its efforts around the IWRS and Water Vision to develop shared and agreed upon statewide water security priorities. These priorities can inform the development of a state plan tied to a regional planning framework and improve policy coherence and transparency of agency functions. Having core priorities in place can also help Oregon's water agencies align their missions and programming and guide their efforts to prioritize water security concerns, as well as reducing the risk they could duplicate efforts. Furthermore, setting up a formal planning and coordination body can support the implementation of these shared priorities. This kind of sustained commitment to water security on the part of state leadership is necessary to make headway with positive and lasting impacts at both the state and local level.

An actionable and equitable state water plan, connected to a regional planning system, can help guide water decisions and policy development

Regional planning connected to an actionable state water plan could better support state water priority setting, sustaining legislative focus on shared desired outcomes, and help ensure adequate and balanced public engagement in the process. Should the state choose to use the existing IWRS as a planning base, it would likely require modifying the IWRS and the organizational structure supporting plan updates and implementation. This effort would also need to be adequately staffed and resourced, which has been an ongoing challenge for key water agencies.

[22] The Oregon Water Handbook. 2006. Author Rick Bastasch was a WRD Division Administrator overseeing the agency's Strategic Planning and Policy Coordination Division in the early 1990s. He is also the former Executive Director of the Willamette Restoration Initiative and Rivers Office Coordinator for the City of Portland.

Many stakeholders value the IWRS; however, limitations with the substance of the document, the public engagement process for its development, and a lack of implementation pathways and appropriate resources impede the strategy's usefulness.

Most of the 13 agencies asked about the strategy found it helpful, with some commending its framing of water issues. While several agencies said they refer to the IWRS as a helpful strategic decision-making guide, only two agencies have tied it to a strategic plan. Agencies recognized challenges with the substance of the document itself for implementation. Specifically, its 51 recommended actions are not prioritized, sufficient metrics or milestones are not included to track progress at meeting goals, and it lacks ties to local priorities and needs. These limitations can interfere with its use as an actionable document to support state and local water decision-making.

Concerns have also been raised about the state's lack of full engagement with Oregon communities when developing the IWRS. WRD coordinated with several state and federal entities to develop the original strategy in 2012, and policy advisory groups were convened to help develop both the 2012 and 2017 versions. However, some staff and stakeholders told auditors the document does not adequately discuss water equity and affordability issues.

Phase one of the 100-Year Water Vision attempted to address this concern by involving a more extensive public engagement process led by the director of OWEB. However, some communities may not have been adequately accounted for. After the 100-Year Water Vision's release, the University of Oregon partnered with nonprofits and community organizations to publish the Water Futures Report elevating water concerns of Black, Indigenous, people of color, and low income and migrant communities considered to have been left out.

Finally, pathways for how the IWRS will be implemented at the state or local level remain unclear. According to statute, WRD is responsible for developing the strategy, but statute does not specify how implementation is to be supported by WRD or other agencies and their various missions and boards and commissions. WRD's focus on water quantity and allocations makes it an important player, but the agency has lacked the authority, capacity, and formalized coordination mechanisms needed to ensure IWRS recommendations are implemented. Ongoing investment in the implementation of the IWRS has reportedly also been limited. The 100-Year Water Vision was initiated to garner more legislative investments in 2018, even though the IWRS update had been released just one year prior and remains in effect as of the publication of this report.

In developing a regional planning framework, creating a clear statutory connection between a state water plan potentially built on or converted from the IWRS and regional planning efforts could support the development of both, with regional plans informing the state-level plan and vice versa. Through tying a regional planning system to a state plan, state leadership and agencies could assist with the development of local and regional water policy and investment recommendations. This regional system tied to a plan could support the state's regulatory frameworks, encourage innovation, and ensure planning is happening at the appropriate scale. This actionable plan could also:

- Help sustain state agency focus and participation in integrated water planning, despite legislative and gubernatorial changes;
- Allow for monitoring and assessment of statewide desired outcomes;
- Help ensure various water interests and historically under-represented groups are included in decision-making, necessary for making state-level water decisions and supporting local stakeholder buy-in and ownership of the process; and
- Support practicality, transparency, and legitimacy in state-level priority setting, policy, and investment decisions.

The state should convene a formal planning and coordination body to guide the statewide plan and provide consistent support for regional needs

Oregon does not have a formal board or committee that is tasked with overseeing the state's water governance; individually, Oregon's natural resource agencies lack the breadth of knowledge, capacity, and authority to take on such an enormous task. Nor, as discussed, does the state have a regional framework in place that can support communication pathways between local communities, state agencies, and state leadership. Agencies that lack shared priorities and data and compete for limited funding can struggle to effectively coordinate.

Despite these limitations, state water officials have made diligent efforts to enhance planning and coordination. Several agencies pointed to the Natural Resource Director's Cabinet and the Water Core team as useful, albeit informal, mechanisms for high-level cross-agency coordination. In particular, the Water Core team allows agency leadership and staff to meet and discuss a wide variety of water-related topics. Several task forces and cross-agency teams have also been convened over the past few decades that primarily address specific needs like water use monitoring and drought response. These efforts are notable and demonstrate the commitment of Oregon's water nexus agencies and staff to effective stewardship of Oregon's water resources.

While helpful for participating agencies, since coordination efforts around governance tend to be informal, these efforts can lack transparency and clear direction. Neither the Water Core team nor the Director's Cabinet have been formalized in statute or have meetings that are open to the public, and the Director's Cabinet does not take meeting minutes. Without a formal alternative, there tends to be very limited public involvement or awareness around these efforts.

Chronic understaffing in several natural resource agencies has also contributed to difficulties with coordination. For example, ODFW was unable to consistently assign staff to help with place-based planning efforts led by WRD for several years. Each agency has their own policies, rules, and structures that are not necessarily designed to align with those of other natural resource agencies with whom they need to coordinate.

Columbia River. | Source: CCO Public Domain

The state's informal and decentralized system can result in serious risks and harmful, costly outcomes, as demonstrated with the ongoing groundwater degradation in Morrow and Umatilla counties. The region has been a declared groundwater management area since 1990, when nitrate levels were determined to be rising beyond EPA-accepted safe levels for consumption.[23] Since that time, and despite some state involvement through the Oregon Health Authority, Department of Environmental Quality, and Department of Agriculture, the issue has only worsened. Potentially hundreds or thousands of private domestic wells in the area contain compromised water and will need filtration

[23] According to a review published in the International Journal of Environmental Research and Public Health, exposure to nitrates in drinking water can increase the risk of colorectal cancer and thyroid disease. There may also be an increased risk with ingestion of nitrate impacted water at or even below regulatory limits, which were set to protect against infant methemoglobinemia but do not factor in other risks. See Drinking Water Nitrate and Human Health: An Updated Review - PMC (nih.gov)

systems installed at significant cost. Even the presence of a state-supported, locally based groundwater management committee tasked with developing voluntary action plans has not helped; see page 61 for community perspectives.

Stronger interagency coordination can also help with getting stakeholders and communities involved in decisions that directly affect them. The responsibility for balancing stakeholder interests, sometimes against the public interest, has been delegated to individual agencies, which may not have the capacity, influence, or knowledge base to effectively engage. Only a few agencies that responded to our questionnaire included the general public in their list of key stakeholders. Other agencies work closely with specific stakeholder groups, like agricultural entities, but have limited interactions with communities outside of those relationships. Agencies need overarching guidance, clear expectations, and support to better engage with communities.

Some other states have designated non-regulatory state boards focused on leading statewide water plan development and implementation. They partner with regional planning bodies which support community engagement. These boards also perform other functions to support a variety of local and regional water needs. For example, Colorado's water planning board provides data, technical assistance, and grants to support regional plan development and implementation. The board has approximately 50 staff working to advance Colorado's Water Plan and provide this level of planning support to Colorado's regions. See page 47 for more on the Colorado planning framework.

Oregon also needs to ensure there is an appropriate balance of interests represented in any statewide or regional water management and planning efforts. One example of a broadly inclusive entity focused on water exists in Oregon, though to serve a much narrower function: the Oregon Watershed Enhancement Board. When Oregon sought to continue integrated grant-making for local watershed enhancement and restoration projects, the Legislature set up the Watershed Enhancement Board with a mission devoted to that charge and a balanced board to sustain the effort in 1999.

Should Oregon create a statewide planning and coordination body, it is important that the state learn from the lessons of the past. As noted previously, water management groups in Oregon have been convened and disbanded by the Legislature with ultimately little to show for their efforts. However, establishing a planning and coordination body can help the state with broad stakeholder engagement and improving capacity around water planning, particularly at the state level.

As part of a robust framework, the state should consider how to staff and structure an entity to help guide statewide and regional water planning. The state should aim to develop a body that meets Oregon's unique water planning needs, is set up to support strong interagency and multi-level coordination and boasts a diverse and balanced representation of public interests. Such an entity would also need a clear charge tied to planning for water security, adequate staffing and resources, and appropriate authority to carry out their charge. This would be a valuable asset to a statewide regional planning framework.

Good water governance supports a healthy state economy

Water's full economic value for Oregon is immense and difficult to quantify. Every sector, every business, every community, and every household in Oregon depends on adequate, clean, and reliable water. Water plays an important role in creating wealth and jobs across the state and contributes to the economy in many ways, such as supporting business productivity, providing a range of environmental benefits, and contributing to public health and cultural and community well-being. Sound water governance is critical for supporting the state's economic stability and can help balance current needs and values against changing water conditions and ensure the state is prepared to meet long term water needs.

Fly Fishing on the South Santiam | Source: Pete Forsyth

Estimating the full value of Oregon's water is difficult, if not impossible; however, some studies considering statewide industries and others examining specific waterways help illustrate aspects of water's importance. For example, Oregon State University's College of Agricultural Sciences attributes about 20% of Oregon's jobs and 13% of the overall state economy to agriculture and related industries, which requires safe, adequate water supplies.[24] Another study examining the North Santiam Watershed, just one tributary within the Willamette River basin in western Oregon, estimated the watershed's

[24] Oregon State University College of Agricultural Sciences, 2021 "Oregon Agriculture, Food and Fiber: An Economic Analysis" https://agsci.oregonstate.edu/sites/agscid7/files/main/about/oragecon_report_2021.pdf

approximately 500,000 annual recreational visits generate around $36.5 million. Dam generated hydropower was estimated at $7.8 million and avoided CO2 emissions associated with hydropower generated $19.8 million in 2017.[25]

Working to ensure Oregon's watersheds and basins are healthy and able to provide clean water to communities and local ecosystems has substantial economic benefits. State and locally supported watershed restoration and natural infrastructure investments provide distinct benefits for the economy in addition to the environment and local communities. According to a 2010 University of Oregon study, every $1 million of public investment in clean water and restoration creates about 15 to 24 jobs.[26]

An analysis performed by the National Oceanic and Atmospheric Administration estimated one natural infrastructure project — funded partly by OWEB just north of Tillamook Oregon — supported 108 jobs and $14.6 million in total economic output for the state over four years.[27] Through restoring wetland habitation and reducing seasonal floods, the project's multiple benefits include improving water quality by decreasing sediment in Tillamook Bay; enhancing social and cultural benefits for recreational fishing, hiking and kayaking; and increasing nearby home values. It may also support millions of dollars in economic value through increasing the abundance of salmon populations in the bay.

[25] ECONorthwest, 2019, "Importance of Water in the North Santiam Basin, An Economic Description."
[26] University of Oregon, 2010, "Economic and Employment Impacts of Forest and Watershed Restoration in Oregon.":
[27] Shaw, Graham R. and Dundas, Steven. J. (2021) Socio-Economic Impacts of the Southern Flow Corridor Restoration Project: Tillamook Bay, Oregon. Garibaldi, OR: Tillamook Estuaries Partnership.

Agency roles and responsibilities in state and regional water plan development and implementation need to be clearly established

According to water governance principles, roles and responsibilities across all levels of government and water-related institutions should be clearly specified. Auditors heard a range of responses from state agencies on the state's role in planning for and promoting water security. Many described the fragmentation in how the state contributes — some agencies emphasized the state does not have sole responsibility, while others suggested the state had a high degree of responsibility.

Of the 13 agencies we heard from, only one pointed to the IWRS in describing the state's role, despite its purpose as an important integration mechanism for the state. Clarifying the entire state's role in planning to address water security challenges could both help the state understand its role and the need to coordinate around achieving actionable milestones. The state's role in supporting the process, providing technical assistance, funding and implementation support for existing plans should also be clearly defined.

Agencies like WRD and the Department of Environmental Quality will need to play key roles in the development and implementation of statewide and regional water plans. However, the state should consider assessing how each water agency should participate in regional water planning, and the specific roles they should play.

For example, WRD has acted as the central agency for statewide water strategy efforts since 2012. However, the agency's regulatory responsibilities and other priorities could risk distracting its attention from planning efforts, and risk skewing its perspective on integrated water planning. WRD also lacks the authority to compel other agencies to participate in planning implementation. For statewide water planning to work, engaging stakeholders and balancing their needs in making water decisions is critical. WRD's obligations to senior water rights holders as a primary stakeholder could interfere with the agency's ability to lead statewide, integrated water planning and implementation efforts to promote water security and equity.

Furthermore, while having WRD as the primary planning entity elevates the importance of water planning within that agency, it may not have that effect for other water agencies. WRD leadership told auditors they consider the IWRS to comprehensively address water needs, but other key water agencies do not. Several agencies told the audit team they have not incorporated the IWRS into their existing strategic plans and do not take it into consideration in their programming.

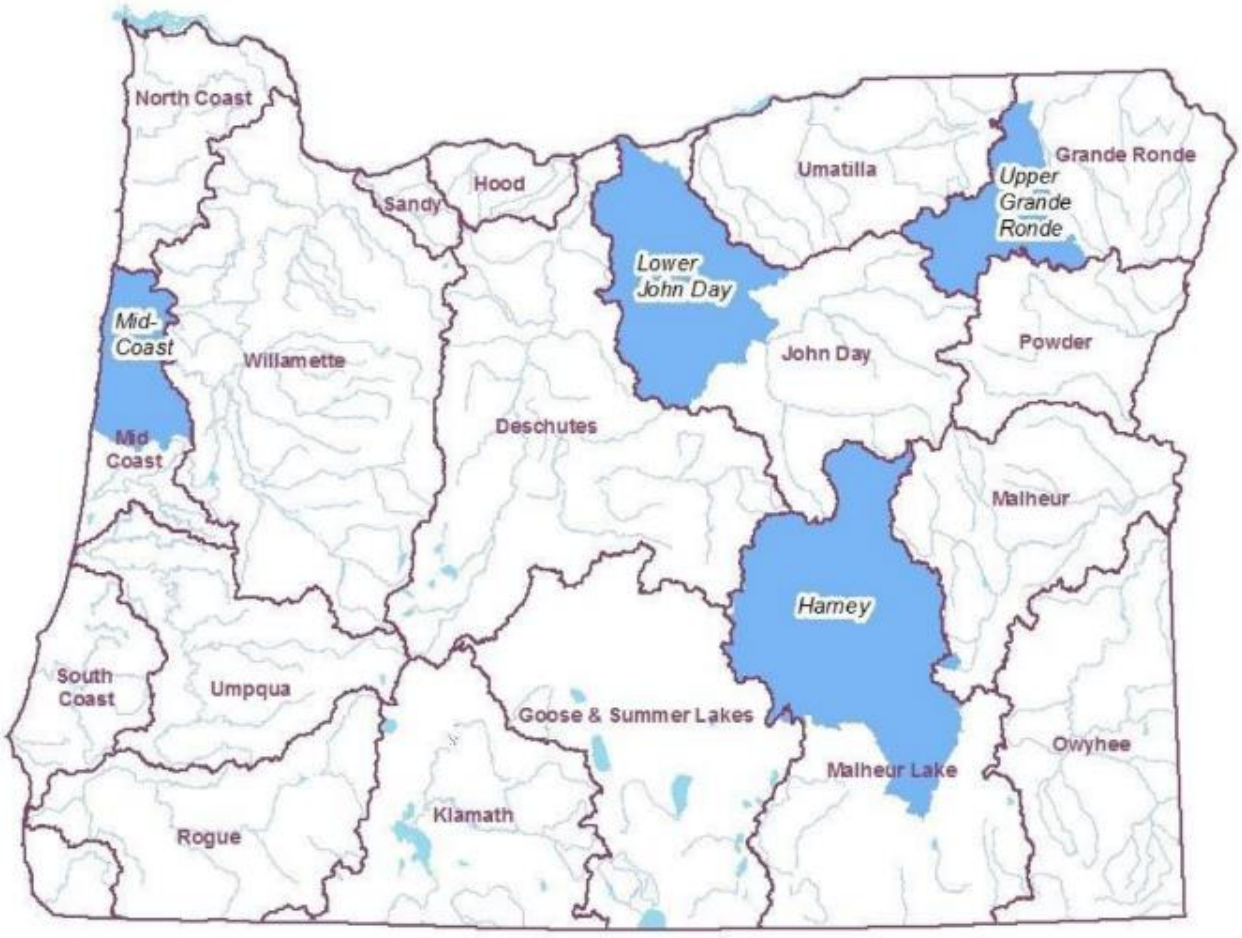
If the state establishes a regional planning framework centered on shared water security and equity priorities, all of Oregon's water agencies will need to consider how their missions and functions align with those priorities. These agencies will also need to prioritize and clearly understand their involvement in statewide and regional water planning. As part of a regional planning framework, the state may consider conducting a systematic risk assessment examining agency missions, core operations, and staffing. This could help ensure a higher level of accountability and transparency, identify redundancies and gaps in service, and provide further guidance on how to integrate Oregon's water agencies into a state and regional framework.

Oregon must balance interests and address high-priority water security needs by ensuring community inclusion in management decisions

The contentious nature of water and various stakeholders involved requires balancing conflicting interests through meaningful stakeholder engagement, a core good governance principle. This means mitigating power imbalances and weighing feedback from over-represented groups. It also means there will be times when the state needs to display clear leadership on making tough water decisions. A state and regional water planning framework should also help manage trade-offs across water users, rural and urban areas, and generations.

Currently, Oregon lacks the kind of structure and planning approach that would allow more communities to be involved in decision-making on a consistent and reliable basis. There are numerous local efforts to coordinate water management, such as the collaborative water planning efforts taking place in the Deschutes Basin. However, other parts of the state may find it difficult to stand up a localized approach to water planning and management, let alone one that includes all critical parties. State assistance and guidance may be necessary, particularly where there are concerns about certain communities being left out or intentionally excluded.

Figure 6: Oregon's Place-Based Planning pilot served four partial planning areas of the state's 18 administrative basins



Source: WRD

The piloted place-based planning process has required accepted applicants use a local convener to balance interests in accordance with criteria developed by WRD. As a voluntary, locally initiated process where community groups determine the geographic area of focus, place-based planning is not designed to encompass the entire state or necessarily prioritize planning for communities most urgently in need. Even if this competitive grant program is extended beyond the pilot, it is not clear all areas of the state in need of support will be able to successfully apply and engage in the process.

This risk is heightened by the fact that powerful water users in some area of the state may not be motivated to participate or could skew representation. It is also unclear how the plans developed will inform a state-level water plan and vice versa. A statewide planning structure that incorporates all areas of the state, such as regional bodies for each area, could help ensure representation while balancing interests by those participating. This could also help ensure all priority water needs are addressed.

An example of a structured statewide approach that could help address these concerns is Colorado. Colorado's state and basin level organizational structures for water planning are intertwined to support actionable water plan development, implementation, and balancing interests in water policy decisions. The state's water plan helps guide statewide actions, and roundtables draft implementation plans for each of the state's nine basins; these basin plans feed into the statewide plan and are in turn informed by it. A state board whose voting members consist mainly of basin roundtable representatives is responsible for leading the development of the state's water plan and a separate 27-member policy committee further supports taking a statewide perspective across basins. The committee is designed to provide a diverse and balanced forum for water policy input at the state level.

Ensuring local communities are involved in statewide and regional planning efforts can also help bring in more resources and innovative solutions to address water concerns. Over $1 billion has been invested in watershed health and enhancement in Oregon over the past 30 years. Local organizations like watershed councils and soil and water conservation districts have worked with landowners and used these funds to improve water quality and watershed health. The state needs to support building more opportunities for communities to participate in developing local water solutions.

Local Perspectives: North Coast Region

The Audits Division worked with North Coast Communities for Watershed Protection (NCCWP) to interview community members from a number of coastal cities, including people from Manzanita, Wheeler, Rockaway Beach, Garibaldi, Nehalem, and Netarts. Forestry, agriculture, and tourism are major industries in the region, which is largely rural with several small and medium sized communities. The North Coast gets substantial amounts of rain during the winter months but can be subject to dry spells in the summer. Many water users depend on surface or groundwater sources that are vulnerable to saltwater intrusion, drought, or the impacts of industrial and agricultural practices.

Residents voiced many different concerns about impacts to their drinking water, both on city systems and on private wells. Most prominent among these were the impacts of forest practices on watershed health and water availability in the coast range: the destruction or loss of water sources to private residences; environmental impacts; potential human health impacts caused by spraying pesticides in and around clear cuts; increasingly unaffordable water bills; longer periods of drought limiting water supplies for communities and water systems, particularly during the summer months; increased water demand from new development and short term rentals; and a lack of responsiveness on the part of state agencies tasked with regulating forestry operations and protecting water quality.

NCCWP members we spoke with wanted more transparency from the state and local industries on when practices like clear cutting and pesticide spraying happen and how they might impact communities. They wanted local water sources to undergo testing to ensure water quality and safety. They also wanted more clarity and support from the state on how they could effectively engage with local and regional water and land management decisions that impacted both their personal and community welfare.

Nancy Webster

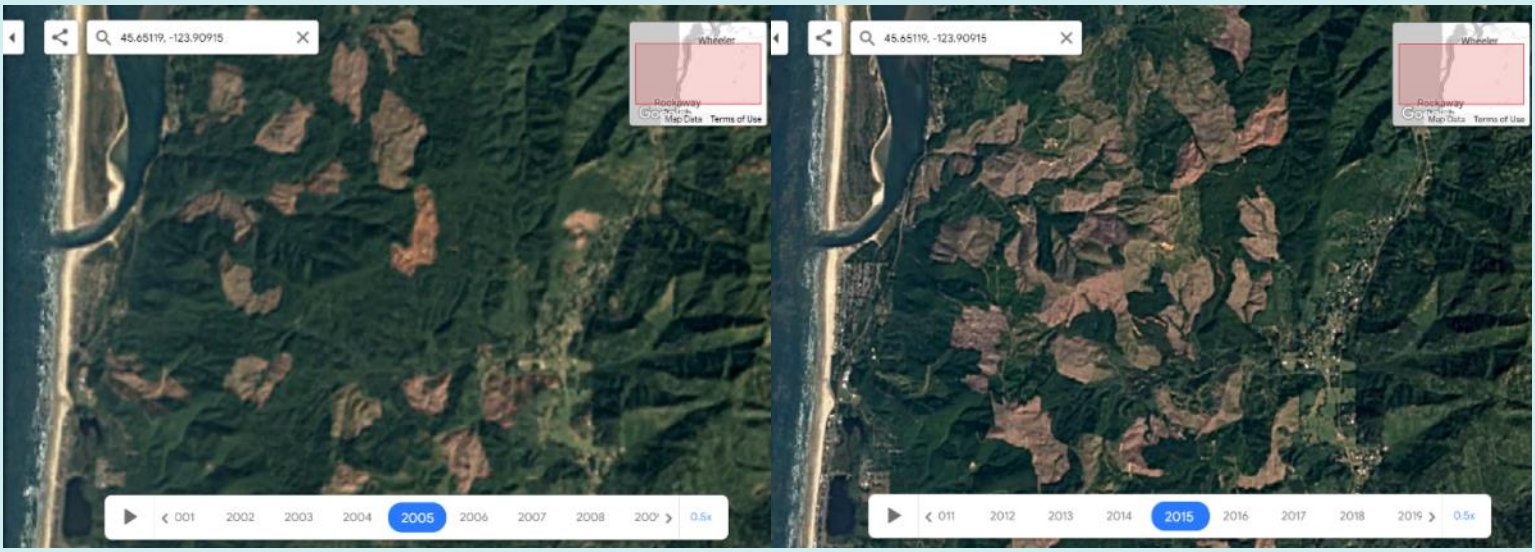
Nancy grew up on the Oregon Coast and chose to retire in Rockaway Beach. She and her neighbors became concerned about clear cutting they noticed taking place in the Jetty Creek Watershed, which is a primary source of drinking water for Rockaway Beach. She also began to receive notices with her water bill that her drinking water had exceeded EPA limits for total trihalomethanes.[28] Rockaway Beach issued 19 alerts between 2005 and 2013 before enhancing the city's filtration system in 2014. That same time saw significant cutting in the Jetty Creek watershed — ultimately, over 90% of the watershed was cut between 2000 and 2021.[29]

Nancy and other Rockaway Beach residents formed Rockaway Beach Citizens for Watershed Protection. They soon began to hear from communities all over the North Coast region concerned about water insecurity and damage to their own watersheds. The group expanded and became NCCWP, which now includes approximately 900 community members from Oregon's North Coast region.

NCCWP has pursued conversations with city officials and several state agencies, spoken at board meetings and local watershed council meetings, gathered signatures for petitions for state help, and

[28] According to the EPA drinking water notice, some people who drink water containing trihalomethane in excess of the maximum containment level over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.
[29] See Appendix H for Timeline of Events in the Jetty Creek Watershed.

filed numerous complaints about practices that could impact drinking water. Nancy stated, “none of these agencies were able to offer any significant monitoring, help, or protection,” but she believes “most of these state agency employees would like to help protect public water supplies.”



Left: A portion of the Jetty Creek Watershed was clearcut in 2005.
Right: By 2015, a substantially larger proportion of the Jetty Creek Watershed had been clearcut. | Source: Google Earth

John Rogan

John Rogan has owned a home in Netarts since 2014. The original water source for his home came from an intake on Hathaway Creek. When a large storm hit the coast in December 2015, the embankment of a road on a clear cut above their property came down in a landslide, which dammed the creek. Shortly after, the dam failed and “sent a torrent, some 40 feet high, of mud, rocks and trees down the creek onto our property as well as our neighbor.” John and his wife had to evacuate immediately on foot; the damage to both properties was extensive and destroyed John’s water supply.

The timber producer did purchase a new water system. However, due to the damage done to the creek bed and surrounding areas, the system was unreliable and required continuous maintenance. Ultimately, John had to put in a well, at substantial personal cost.

John learned in 2020 the same timber producer planned to clear cut a steep slope directly above his house. The company had been given permission to proceed by the Department of Forestry.

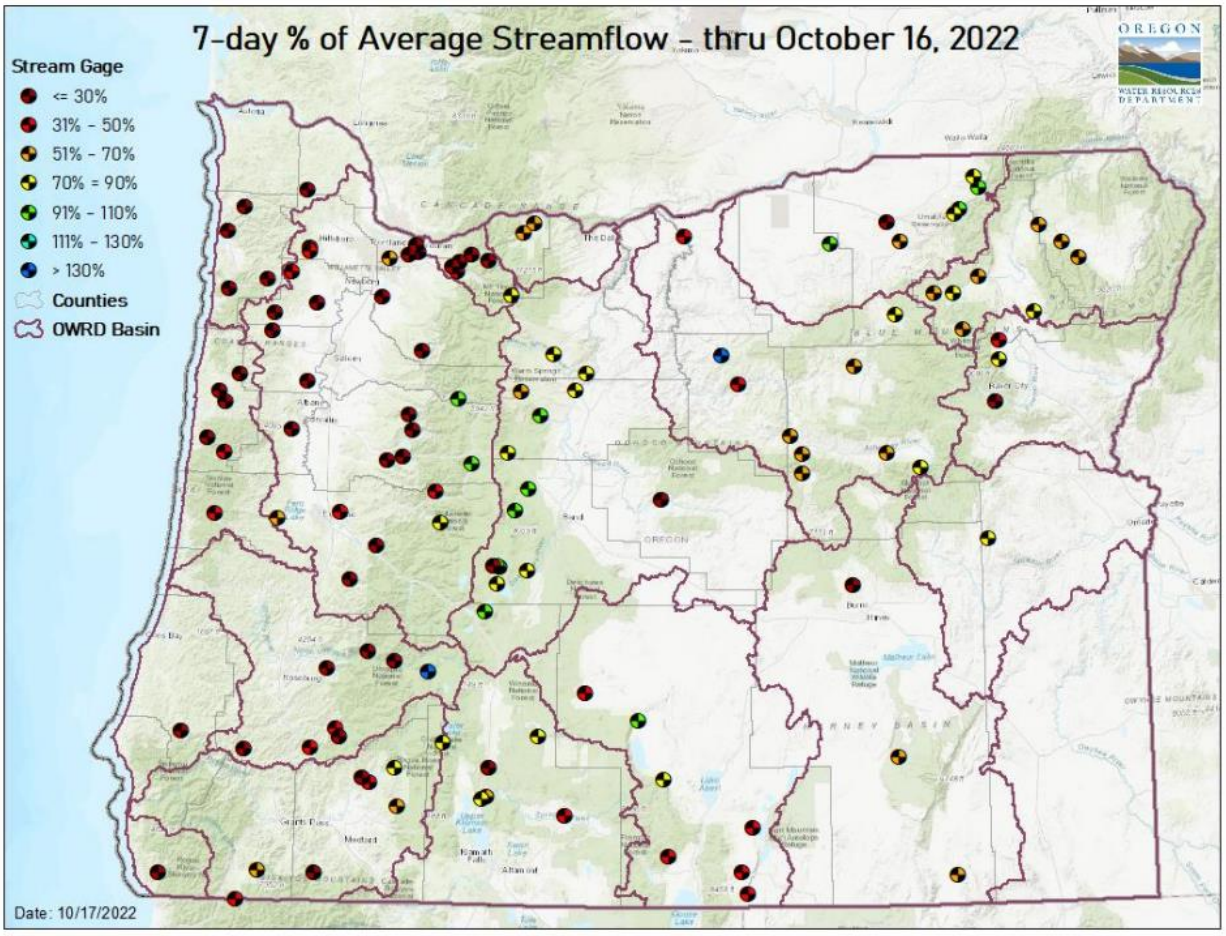
From John’s perspective, “... Not only do our communities benefit less from timber harvests, but they are at times adversely effected by some questionable practices. Nor does it seem that as things now stand, can the community expect much in the way of protection from the Oregon Department of Forestry or from the Legislature. It is time for a change.”

Public awareness and understanding of the state's urgent water challenges must be enhanced

According to a statewide survey conducted by the Oregon Values and Beliefs Center in July 2022, almost half of respondents considered there to be "enough water in Oregon to meet current needs," while a third disagreed with that statement. Only 36% of respondents believed Oregon has enough water to meet future needs. The survey shows many Oregonians have some awareness of the state's perennial and growing water concerns; it also shows many Oregonians consider water security to be a problem for future generations, not necessarily a pressing concern, despite ample evidence showing water insecurity is here and already affects many people across the state.

Efforts on the part of state agencies to work with and educate the general public have largely been limited to participation in programs for school-age children, such as the Children's Clean Water Festival and Outdoor School, and direct interface between their staff and the public as part of other professional responsibilities. However, the IWRS acknowledges "education and outreach efforts by state agencies and their partners should be targeted to all age levels and should address water quality, water quantity, and ecological needs and issues."

Figure 7: Information on stream flow in Oregon is available online. Most Oregon streams were running well below seasonal average in October 2022



Source: WRD

WRD had little historic capacity to raise public awareness directly. According to agency leadership, WRD relied on its stakeholders and partners to raise awareness among their members. In 2021, the agency received funding for two additional staff to help build a communications program to bolster public awareness of drought and other water security concerns. Other agency representatives stated their work around public engagement was largely limited to their stakeholders. However, there is no comprehensive communication effort in place to educate the general public on water insecurity.

Lack of education and knowledge around water issues is a barrier to meaningful community involvement. Not everyone facing water insecurity is fully aware of the risks this presents to themselves and their communities. For instance, groundwater in parts of the Lower Umatilla Basin has been impacted by nitrates for over 30 years, yet many community members the Audits Division heard from were long unaware their well water could be compromised. The state has known this for decades. Many of these individuals only became aware when the county and Oregon Rural Action, a local community-based organization, began going door-to-door to conduct well testing and inviting community members to public meetings to discuss their findings and concerns. Residents in Oregon's North Coast region faced difficulties communicating with state agencies regarding their own water quality concerns, and even in identifying which state agencies they should communicate with. More information can be found in our local perspectives sections.

This gap in public knowledge is a dangerous shortcoming on the part of the state. Lack of public awareness creates avenues for special interest groups to push for policies and practices that benefit specific stakeholder groups and are not necessarily in the public's best interest. Inadequate state collaboration with communities also creates barriers to finding and applying innovative solutions to local and regional water security concerns. Enhancing public awareness can help the state more transparently engage with communities on water issues that impact them.

State leadership needs to explore options for creating a robust approach to raising public awareness. This could potentially include seeking funding for programs like OHA-PHD's Domestic Well Safety Program, creating or contributing to public awareness campaigns around community water security, and factoring public awareness needs into state and regional planning efforts.

State leadership should adopt the human right to water into law and explore other policy changes that could help protect community and ecosystem health

The right of all people to access water to meet their basic needs is not clearly protected in Oregon law. The Water Code indicates, but does not state explicitly, the Oregon Water Commission can decide whether human and stock animal water needs take precedence in certain situations, and drought declarations through the Governor's Office can trigger decisions to protect those needs. Outside of these special circumstances, however, senior rights take precedence, no matter how the water gets used. Oregon water policy tends to lack some coherence; water laws are not necessarily aligned or fully supportive of sustainable outcomes.

Oregon has made some recent efforts to address water security and equity more systematically in state policy and practice. Even before the Environmental Justice Council was formalized in 2021, Oregon's natural resource agencies were required to draft annual environmental justice reports detailing their efforts to achieve environmental justice goals set by the Environmental Justice Task Force. Some agency programs are also designed to address water security concerns for specific

groups, such as the focus of the Oregon Health Authority's Drinking Water Services program on community water systems. However, these programs are not part of a broader initiative to enhance statewide water security and equity. This limits their overall effectiveness, as these programs are not always able to serve, or may only provide limited support to, Oregon's most vulnerable populations.

One policy option the state could consider now is to enshrine the human right to water in statute. This could help establish the Legislature's clear commitment to addressing water security and equity concerns in the long term. In 2010, the United Nations General Assembly formally recognized the human right to safe drinking water as part of binding international law. The right to water "entitles everyone to have access to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic use."

In 2012, California became the first state to legislatively recognize the human right to water and declare that clean, safe, affordable and accessible drinking water was a fundamental right for all residents. While the law does not grant specific water rights to all residents, to help enact the new law, California developed a framework and tool to assess community water needs across the state and to monitor progress. In 2021, the state released a report quantifying which communities were struggling with water quality, accessibility, and affordability needs and which needed priority attention. California's framework lacks at least one important piece: rural domestic well owners and very small water systems are not included in the analysis. However, having this kind of information and tool available could provide Oregon with information critical to making important decisions about the allocation of water funding and state resources. It would also clearly demonstrate the state's commitment to pursuing long-term water security for all Oregonians.

Rivers and Trees in Oregon. | Source: CCO Public Domain

Areas of existing Oregon water policy may also need revisiting. For example, junior right holders and those without specific water rights may be adversely impacted by the water use of senior right holders who choose to use their full allotment without regard to other water users in a basin. As mentioned

previously, the state's administrative basin programs also have not been regularly updated in many years. This means that the state's water basin rules are dependent on decades' old basin studies that may not reflect current conditions. As much of the state's surface water has already been allocated, water rights transfer rules and processes must also take the public interest into consideration.

Oregon needs to explore ways to better incentivize the protection of water-based and water-dependent ecosystems. Some policies that could address some of these concerns have been proposed by policymakers at the federal level, such as the River Democracy Act that aims to expand Wild and Scenic Rivers protections to an additional 3,000 miles of Oregon rivers and streams. Similar or aligned efforts at the state level may enhance the protections promoted by such federal actions.

State leadership will need to proceed with caution and work closely with state agencies to ensure policy changes have the intended effect. Water efficiency efforts like installing pipes instead of canals are sometimes touted as an effective water conservation tool for farmers and may help reduce water loss during irrigation and increase water that stays instream. However, these activities could have unintended consequences that harm communities and ecosystems, like reducing aquifer and stream recharge from leaks in canals. According to WRD, the concept of conservation is sometimes oversimplified without considering the whole picture.

The 2021 funding package was criticized for failing to include more conservation funding opportunities. By creating thoughtful, evidence-based community and ecosystem protection incentives in policy, the state could help agricultural communities better adapt to diminishing water supplies without doing further harm to local ecosystems.

Additional policy changes that can strengthen some of the weaknesses in Oregon's water governance should be considered — such as policies that support integrated and reliable data, clear funding strategies, and better public representation in decision making around water. The Legislature must also account for the current and inevitable impacts of climate change in any future water resource decisions. Recent changes to Oregon's land-use and housing laws support reducing greenhouse gas emissions, sequestering carbon, increasing community resilience, and a more equitable distribution of environmental benefits and burdens; pursuing complementary water policies can strengthen the impacts of these legislative changes. Having a regional planning framework in place can support meaningful and effective policy decisions and create avenues for regional input into policy.

Local Perspectives: Harney County

Harney County, where agriculture is the primary industry, has struggled with groundwater shortages for several years. In 2016, WRD began a groundwater study in the region with the assistance of the United States Geological Survey and found a substantial imbalance between available groundwater and water use by irrigated agriculture. The basin has also participated in WRD's place-based planning pilot program.

Christine Bates

Christine has lived in rural Harney County with her family since 2009 when she became the fish and wildlife biologist at the Burns District Office of the Bureau of Land Management. She has been engaged in regional water management work and planning in the Harney basin for over a decade, including serving as chair of the Harney County Water Council, performing riparian work for the Bureau of Land Management, and participating in the region's place-based planning efforts with WRD.

When a large alfalfa farm moved in near their home, the operation began installing numerous irrigation pivots in their fields. Farms like this one can use a substantial amount of water from wells that are 300 to 400 feet deep. Christine and her neighbors on domestic wells cannot afford to go that deep to compete for water.

Burns Area Field | Source: Gary Halvorson, Oregon State Archives

Christine's home is served by a private well first dug in 1981. When they purchased the property in 2009, the water level in the well was at a depth of 14 feet, sufficient for her domestic water needs. In 2016, the water level had dropped to a depth of 33 feet and has been dropping since then. She has

since had to deepen her well to 160 feet (the water pump is now at 80 ft) to prevent losing water to their home. Before the new well was put in, they had to haul water for themselves and their livestock. To pay for the new well, the family sold their cattle. The water pump's depth also requires more electrical use, and their bills have gone up and put added pressure on her family as a result. Several local landowners also come to their well to fill up water tanks for their livestock since their own wells have gone dry.

Well owners in the area must be careful about putting in wells to the correct depth so they can preserve water quality, and many cannot afford to deepen their wells. Arsenic levels in some wells have risen above EPA safety limits in recent years. She has installed a reverse osmosis system for drinking water, but her household "bathes in arsenic." Her family cannot afford a full well filtration system for arsenic.

Christine has spoken with a number of people employed by the State of Oregon about the loss of water in her well. However, in Oregon, private well owners have little leverage to act. She is concerned that her lack of water rights mean she cannot protect her access to water.[30] She also watches for endangered fish in the streams, and notes that springs in Harney County are drying up. Wildlife are seeking water in stock tanks to stay alive.

Christine grew discouraged with the Harney Basin place-based planning efforts and in early 2021 she stopped attending meetings. "They weren't accomplishing anything… it turned into Groundhog's Day."

Christine shared some of her neighbors "saw the writing on the wall" and were leaving the area. However, families like hers do not necessarily have the resources to leave. The water loss in her well causes her great frustration and anxiety. "Water for domestic users should be a right and is our important requirement for life and overall happiness… Time is ticking, and we are rapidly draining the aquifer."

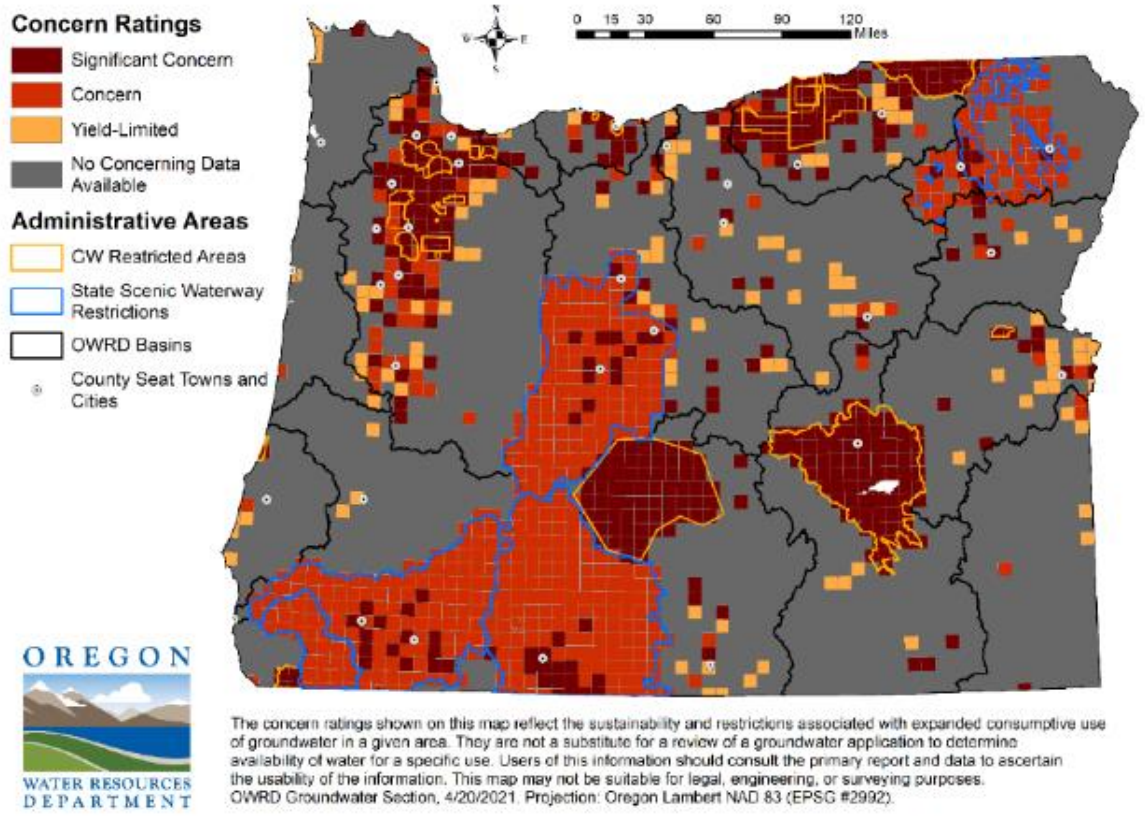
[30] Domestic well owners in Oregon have some protections under the law that can mimic a water right. However, most domestic wells have not fully developed an aquifer or other water source, an action that could allow the state to regulate other users and provide more proactive protections to the well owner.

Improved water data can help Oregon agencies and communities better understand statewide and regional water needs

Having good water data is critical to supporting effective water planning and management decisions; however, this has been an ongoing challenge for decades in Oregon, in part owing to the lack of a state water management plan and de-centralized approach, and in part due to a lack of funding for data needs. Data is being collected and retained by different agencies for different purposes using different units of measure with gaps where agencies have not been authorized or funded to collect it. Efforts are underway to make progress toward addressing water data needs, but success will depend upon continued prioritization and funding by the Legislature.

The 2021 evaluation of the place-based planning pilot found critical data needed from the state was unavailable and delayed or hindered plan development, which took years longer than anticipated. According to the report, groups had difficulty determining which agencies have what data, where data are kept, and locating data among many agencies that do not share it. In some planning areas, the most up-to-date studies were from 1975. WRD does not regularly update basin studies, which were used to provide extensive data for each basin.

Figure 8: Significant data gaps, depicted in the grey areas, leave Oregon with little understanding of available groundwater across most of the state[31]



Source: 2021 WRD Groundwater Resources Concerns Assessment

[31] Not enough reliable data has been collected within most of the Townships in the graphic's gray areas to determine the level of groundwater concerns. However, 5% of those Townships are known to not have any current concerns, according to WRD.

Furthermore, the state's role for supporting place-based planning, including whether the state should help with data on planning, remains unclear, unlike some states like Colorado, where the state Water Conservation Board provides critical technical support to its regional and statewide planning efforts.

Colorado's Water Conservation Board, the state's water planning and policy agency, leads the state's supply and demand projection data and tools underpinning the state's water plan. The 2019 technical update built on 15 years of state supply planning initiatives, to support evaluating Colorado's future water needs. Their work provides tools and data for the state's nine regional Basin Roundtables to update their implementation plans and develop detailed local solutions to supply and demand gaps.

Oregon began a promising project in 2021 to address water data needs. The project was funded through June 2023 to accomplish three goals:

1. Begin initial scoping and design of a database framework of water and infrastructure data;
2. Develop a funding request for further development of this database framework; and
3. Position the participating agencies to immediately pursue project goals in the 2023-25 biennium, pending legislative approval.

The Department of Environmental Quality is coordinating the project and has secured the Oregon Institute for Natural Resources and Duke University's Internet of Water as full project partners. Both organizations have direct experience with water data systems. As reported by the Department of Environmental Quality, one of the most anticipated deliverables for the June 2023 final report will be a prioritized, working inventory of water datasets needed. Although past efforts have been made, they were incomplete for this inventory purpose and will be used to build upon in the current project.

The inventory will evaluate the status of each data set necessary to make water and water infrastructure decisions. Some data sets may need significant effort to make them available for a centralized water data framework, and some may be uncollected because no agency currently has authority or funding to do so, or they are not available for all parts of the state. The Legislature may need to provide authorization and funding for agencies to fill the identified gaps. The Department of Environmental Quality reports the intention to reach out to stakeholders for their input, both immediate and long-term — having a regional framework could help with this, both for deciding what data is needed and helping to collect data.

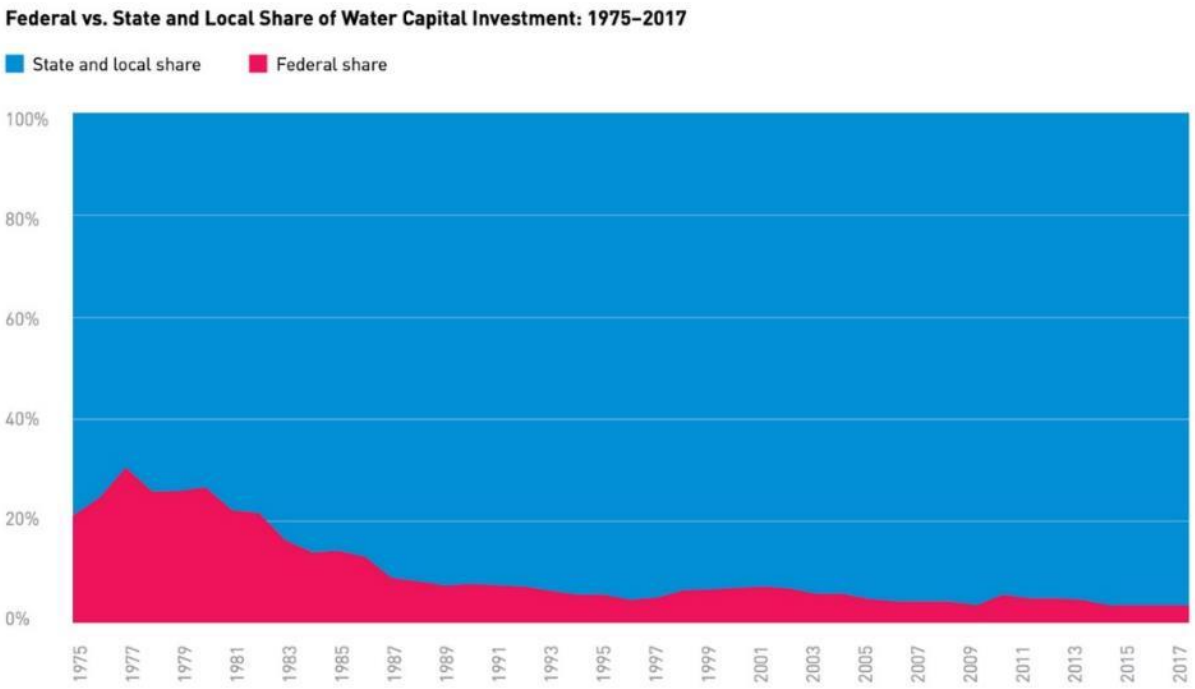
House Bill 5006 recognized that although this project was funded as a one-time appropriation, it is likely to become a significant information technology project. The Department of Environmental Quality will develop a policy option package placeholder in the 2023-25 Agency Request Budget with more recommendations on scope and location of resource needs to be detailed in the preliminary report to the Legislature in early 2023.

Oregon urgently needs a strategic approach to water funding and a consistent funding base to support desired outcomes

One critical component of water security is affordability. Oregon, like other states, faces considerable water affordability and funding challenges that require strategic and coordinated state action to address. Since the 1970s, federal support for water infrastructure projects has declined and shifted

from grants to loans administered by the states as the need to fix and upgrade aging water infrastructure increases. Local governments and residents have had to bear the financial burden.

Figure 9: The federal share of total investments in water infrastructure fell from 31% in 1977 to 4% in 2017



Source: Congressional Budget Office, "Public Spending on Transportation and Water Infrastructure, 1956 to 2017," in Value of Water Campaign and American Society of Civil Engineers (ASCE), "The Economic Benefits of Investing in Water Infrastructure: How a Failure to Act Would Affect the US Economic Recovery" (Value of Water Campaign, ASCE, 2020), http://uswateralliance.org/sites/uswateralliance.org/files/publications/VOW%20Economic%20Paper_1.pdf.

In response to national water infrastructure challenges, Congress has increased appropriations for federal financial assistance programs as the state has contributed additional funds. The 2021 state legislative session provided a historic investment in water, allocating $411.5 million in federal and state funding to local infrastructure projects. In November 2021, The U.S. President signed a new federal Bipartisan Infrastructure Law allocating $50 billion to improving the nation's drinking water, wastewater and stormwater infrastructure, the largest investment in water ever made by the federal government. Funding will be provided over five years through a combination of loans and subsidy or "forgivable loan" akin to a grant, with the bulk of subsidy targeted to disadvantaged communities. In 2022, Oregon received $92 million; the state is slated to receive similar amounts in the following four years.

While these investments are significant, they fall far short of meeting estimated national and state infrastructure needs. For example, the American Water Works Association has estimated $1 trillion in costs over 20 years to repair aging infrastructure for drinking water alone and expand water services to meet growing demand. Stakeholders also told auditors the 2021 legislative investment was not enough. A 2021 study published by Portland State University estimated $23.5 billion in long-term costs for maintaining and upgrading Oregon's city water and wastewater facilities.[32]

[32] 2021 Infrastructure Survey Report. Portland State University. January 2021.

Many communities also face challenges in accessing new and existing federal funding opportunities channeled through the state. A key priority under the law for the added federal funding is ensuring disadvantaged communities benefit equitably, recognizing low-income communities and communities of color experience disproportionate impacts of pollution, including through water. Concerns have been raised that local match requirements in the new law, which are cash or in-kind contributions that a grantee is required to contribute to project costs, could impose burdens on lower capacity communities seeking federal grant money.

Funding programs administered by the state of Oregon may not benefit communities unaware of opportunities and state requirements and processes. Rural Community Assistance Corporation, a nonprofit technical assistance provider working with rural and Indigenous communities, told auditors the demand for their assistance exceeds their available supply. Community needs cover the entire spectrum of technical, managerial, and financial aspects of running a community water or wastewater system. According to the nonprofit, most communities in Oregon they have worked with do not know how to apply for funding, especially smaller and low-income communities. Some smaller communities also lack the economic leverage or population size to be eligible for current grants and loans.

Outreach is required to disadvantaged communities who may not be aware of technical assistance programs and how to access them. A policy director for a national nonprofit focused on water sustainability told auditors no state is well prepared to handle the additional funding, with capacity challenges and broader systemic and structural barriers that prevent communities from applying. According to the Oregon Health Authority, smaller public drinking water systems generally face more water quality challenges and compliance issues due to a lack of financial, managerial, and operational capacity. Some of these systems do not possess the capacity to even apply for or borrow and repay the state revolving fund loans with significant principal forgiveness available for disadvantaged systems.

Some state agencies also face challenges in obtaining funding to support the capacity needed to carry out their main functions. About 2% of Oregon's legislatively approved budget goes to Oregon's 12 natural resource agencies. An even smaller proportion of state funds goes to agencies that regulate Oregon's water quantity and quality. Agencies must compete for funding and can struggle to fulfill their regulatory responsibilities important for water security.

According to natural resource agencies the team surveyed, agencies reported experiencing considerable funding challenges, including funding cuts and fluctuations resulting in reduced capacity and inadequate staffing. For example, the Oregon Department of Fish and Wildlife reports it lacks the resources to conduct the studies and to resolve protested instream water rights applications through settlements or contested case hearings, leaving many Oregon streams without legally protected instream flow rights. The Oregon Health Authority has told auditors the agency would need more funding to regulate and help small water systems, and more resources and assistance to smaller communities.

The 100-Year Water Vision recognized the need for a more strategic approach at the regional level to guide water investment decisions. Developing a more robust investment strategy would require extending beyond the substance and structure supporting the development of the IWRS, to determine and incorporate regional needs. Key water stakeholders told auditors that their perception was

decisions made by the Legislature in the 2021 session were not strategic or prioritized. They were concerned these decisions may have been skewed by individual relationships or agendas.

Natural infrastructure is the strategic use of natural lands, such as forests and wetlands, and working lands, such as farms and ranches, to meet infrastructure needs. As the 100-Year Water Vision recognized, natural infrastructure is under-utilized and is critical to incorporate into the state's water funding and management strategy. Oregon would benefit from more widespread adoption of natural infrastructure, which can cost less than built infrastructure, and provide multi-benefit solutions, supporting social, economic, and hydrological efficiency gains for communities.

In 2021, Willamette Partnership and the Oregon Environmental Council partnered to publish a report proposing a number of specific actions for the state's consideration around prioritization, funding, policy, and requirements for natural infrastructure. For example, state agencies should explicitly prioritize natural infrastructure, and require consideration of natural infrastructure alternatives as part of permit or funding applications.

Adopting a more strategic approach would allow for an equitable distribution of funds. It would also support transparency and legitimacy in legislative investment decisions and help ensure funds are invested in the areas of the state with the highest need. The urgency for developing such an approach is heightened as the state attempts to administer additional federal funding equitably. The federal government encourages states to use the influx as a catalyst for strengthening their project pipelines, building capacity for small and disadvantaged systems, encouraging integrated and regional approaches, and performing additional outreach on new funding opportunities.

Some other states have dedicated funding mechanisms to support plan implementation, such as a Texas fund created by the state legislature to provide affordable, ongoing state financial assistance for projects in the Texas water plan tied to regional planning. Through fiscal year 2021, the fund has committed approximately $9.2 billion for projects across Texas.

Several recent reports and key stakeholders have also discussed ways Oregon state leadership could better leverage existing federal infrastructure dollars, increase efficiency and effectiveness in the state's water spending, and improve equity in the state's access and funding process.[33] For example, a nonprofit technical assistance provider presented options to the Legislature in 2021 on ways the state could re-structure its process to reduce the burden from communities in applying for federal funding. Another nonprofit research group has recommended that state governments create funding to assist local governments with meeting federal match requirements. While agencies are taking steps to try addressing these challenges independently, having an actionable water plan tied to a water funding strategy would allow for more coordinated headway.

[33] Relevant reports: Natural Infrastructure in Oregon, Common Challenges, Opportunities for Action, and Case Studies. Willamette Partnership and Oregon Environmental Council. 2021; and Water Investment Ready Oregon, Accessing Federal Water Funding. Willamette Partnership. 2021: Willamette Partnership.

Local Perspectives: Lower Umatilla Basin

In summer 2022, the Audits Division spoke with five Morrow County and City of Boardman community members with the assistance of Oregon Rural Action (ORA), a community-led organization based in Eastern Oregon. Nineteen community members also provided written statements with the assistance of ORA detailing their personal experiences and concerns with nitrate impacted groundwater. Most of their domestic wells that have recently tested above federal safe drinking water standards for nitrates.

ORA provided the following overview of the problem.

1. Community members whose wells have recently tested high for nitrates in the Lower Umatilla Basin were unaware they may have been exposed for decades to toxic drinking water and had little to no information to protect themselves and their families.
2. Community members identified health concerns related to exposure to nitrates.
3. Community members need access to safe drinking water for basic uses including drinking, cooking, and oral hygiene.
4. The scope and severity of the water insecurity problem in the Lower Umatilla Basin is unknown including the universe of domestic drinking water wells in the region, the number of wells and households impacted, and the efforts required to secure immediate and long-term access to safe drinking water in the region.

Rural Boardman neighborhood meeting and Morrow County's first emergency bottled water delivery, June 2022 | Source: Oregon Rural Action

Though the region's public water systems are regulated to meet federal safe drinking water standards, poor groundwater quality is an urgent concern to the portion of the population that relies on private or small community wells to provide water for domestic uses. The Lower Umatilla Basin, which includes parts of Umatilla and Morrow counties, is home to a large, growing, and diverse community of agricultural workers. Compared to the state as a whole, the demographics of Morrow and Umatilla Counties are more ethnically diverse with a higher representation of people who identify as Hispanic or Latino and a higher poverty rate. These communities have long lived in the area and work in agriculture - the region's economic engine and a primary source of the nitrate pollution. Access to information in culturally relevant languages and platforms is a barrier to addressing water insecurity.

Communities in the region have experienced groundwater degradation for decades. In 1990, the state established the Lower Umatilla Basin Groundwater Management Area (LUBGWMA) due to high concentrations of nitrates in the groundwater. The LUBGWMA committee is comprised mostly of representatives from cities, districts, and industry in the region. Two voluntary LUBGWMA action plans, released in 1997 and 2020, have failed to meet the state-required goal of less than 7 mg/L of nitrates (the EPA limit is 10 mg/L).

Community members shared they were largely unaware of the nitrate concerns with their groundwater until spring 2022. At that time, Morrow County partnered with ORA to begin testing domestic drinking wells, reporting the results back to communities, and providing factsheets on nitrates in English and Spanish. In June 2022 Morrow County declared an emergency based on the testing results and began free water distribution. As of September 2022, ORA and Morrow County had tested 485 household wells, with more than 200 wells testing above federal safe drinking water limits for nitrates. Well testing has since expanded to Umatilla County.

In 2020, the EPA encouraged the Oregon Health Authority, Department of Environmental Quality, and Oregon Department of Agriculture to develop and implement a workplan to protect residents from nitrate-contaminated water following a petition to take emergency action. The EPA requested a more detailed plan in 2022, clarifying that the plan must include "an adequate response plan to address the immediate health risks" in the Lower Umatilla Basin. Since then, roughly $882,000 has been allocated to the Oregon Health Authority by the state's Emergency Board to address health risks caused by excessive nitrate levels in domestic wells. A detailed plan is not yet available.

According to ORA, their organization and local community members urgently support implementing a workplan that addresses immediate community needs for safe water and the following minimum components outlined by the EPA: a coordinated plan among state and local governments and private entities; a hazard assessment identifying each impacted resident; public education and outreach; water testing at no cost; the provision of alternative water needed for drinking, cooking, oral hygiene and dishwashing through reverse osmosis filter systems and maintenance at no cost, water delivery or connecting to a public water system; and public records so the public can understand the scope and severity of the nitrate contamination in the Lower Umatilla Basin and measure Oregon's progress in implementing a response plan.

Statements from community members

Community members shared a wide array of concerns about nitrate-contaminated groundwater and how it has impacted their families. Many knew the water in the area was not safe for drinking but had

not been heard or been provided with more specific information on the dangers of nitrates to community health. Most were using their well water for cooking and other domestic needs. Many people shared concerns about health problems such as cancer. They had difficulty finding information about wells and filtration systems, particularly in Spanish, but still took initiative to purchase and install filtration systems to improve their household water. Even so, many still saw their water test above federal safe drinking water levels.

Community members meet in Boardman to call for safe drinking water, September 2022. | Source: Oregon Rural Action

The following statements are printed verbatim to allow residents the opportunity to speak for themselves on urgent issues of water security.[34]

A. Lopez

> "I have had my property in Boardman for the last 18 years. I have my own well here in the house that we live in. I share my testimony in hope that it will help me and my community to receive the necessary resources to ensure that we are a safe rural water community.
>
> The first time I noticed there was something wrong with the water quality was when we had to clean the water heater from all the corrosion buildup from the water. My mother has had her

[34] See Appendices C and D for full written statements from community members and Oregon Rural Action.

house for about 8 years now and every 3 to 4 months I help her clean the water heater... We have had to replace all the tubing in the house which was a pricey process.

About 2 years ago, I built a home on the property... However, before I was able to get a loan for the house, I had to install a pricey filtration system that was around $5000... I recently tested my water, and the nitrates were almost 4 times the contaminant level (39.4ppm). I quickly learned that to have an effective filtration system, I have to change the filters out every 4 months. It costs me about $280 each time I change the filters, so that totals to more than $1120 of unnecessary expense if I only had clean water out my well."

M. Martinez

"I have been living in Boardman for the past 36 years···Unfortunately, last year I had two miscarriages. Now, hindsight, I wonder if the nitrates in the water caused me to have this problem because I used to drink the water and even cooked with the water since living here···.No one had ever warned me about the danger that existed···Maybe if I knew the information, if I had had this information before, I wouldn't have done it··· My well tested at 26."

M. Colin

"My parents have a long history of working in agriculture and harvesting in these areas since they arrived in the 1980s···I can't say for sure if I suffer or if my family suffers from any symptoms related to the effects of high levels of water nitrates. But what I can say with certainty is that we felt fear and concern when we received the news··· Now I have to say (to my children), don't drink that water because it hurts you....My parents and neighbors have spent a lot of money on bottled water weekly,... installed expensive water filters that only worked a few years, this being the reason our water test resulted in a 36.5.···"

M. Brandt

"My name is M. Brandt and I have served in the Marine Corps. My wife and I have been residents of Morrow County for the last 25 years···. In order to get my mortgage, I had to install a water filtration··· It was a frustrating experience having to come up with an additional $1,500 to get a system···I recently had my water tested and the nitrate levels are at 34.5, which are more than 3 times the contaminant level···"

C. Sanchez

"My name is C. Sanchez and I live here in the town of Boardman, I have been living here for more than 20 years outside of the city limits and in fact, this was the first year that I learned that this water is not good to drink···I have a four-year-old son and a son that's two months old···"

State leadership should provide clear support to state water agencies enacting regulations that protect water security for the public

Some of Oregon's agencies related to water have broad regulatory discretion but may be prevented from using that discretion for the benefit of the public by poorly written policies and external pressures. State regulation also supports local and regional planning, but agencies must first be allowed to enact those regulations. Ensuring agencies receive an appropriate level of support, particularly around resources, capacity, and clearly written policies, can help safeguard the integrity of the regulatory function.

One example is the ongoing and chronic overallocation of water in many areas of the state, a concern that began before the introduction of the Water Code. Regions like Harney County are confronting serious water shortage issues caused by overallocation and worsened by drought. Some rivers, streams, lakes, and aquifers have more water allocated from them than exists within them. Regardless of the sensibility of these allocation amounts, they are protected by the code. The state and many local players are engaged in ongoing discussions and agreements about how to share an increasingly scarce resource among right holders. However, when these discussions break down, the state has limited recourse to address the very serious water shortages that could result.

Another example is the lengthy regulatory and legal processes around both water quantity and quality that can prevent the state from acting swiftly when water users are out of compliance with existing rules (such as that illustrated on page 18 with the Klamath Tribes). The state prioritizes taking an educational approach to address compliance concerns, which can be effective and beneficial to small farms or organizations that need time to reach compliance. State laws are also set up to protect constitutional rights and due process of individuals that may be out of compliance. However, it can sometimes take the state years to enact a regulatory measure or issue a fine to an entity that cannot or will not comply with state regulations. Those actions can also be legally challenged. The fragmentation of agencies with similar and adjacent regulatory responsibilities may also lead to confusion on the ground when trying to report a compliance concern.

Water policy and policies that impact water encompass a vast field of laws, rules, and practices. To root out and address policies that may prevent the state from taking meaningful action on water security and equity, each agency may need to work with their individual board or commission to assess where there are gaps or barriers in policy, and how water security and equity can be more effectively carried out. It may also require legislative action in some cases.

Several stakeholders told the audit team external pressures put on some water agencies prevented them from effectively carrying out their regulatory duties, and some of the processes in place to ensure the public interest is considered in water decisions are not always being used. Water agencies may also be at risk of losing funding when they make decisions that run counter to the desires of powerful stakeholders. A robust state and regional framework built on shared priorities, and clear support from the Legislature and Governor's Office, can help regulatory water agencies carry out their most critical duties to the benefit of all Oregonians. These regulations, properly implemented, can help ensure Oregon has enough clean, safe, and accessible water to meet everyone's basic needs.

Federally recognized Tribes must be integrated as full and equal partners and co-managers in state water decision-making

Oregon's nine federally recognized Tribes are sovereign nations with which Oregon has government-to-government agreements in place. However, the Tribes have historically been left out of water planning and water rights decisions in Oregon. Of the three Tribes the audit team met with for this report, only the Klamath Tribes have fully adjudicated senior water rights, decided in court after several decades of persistent work and advocacy. Termination has also influenced the Tribes' ability to participate in decision-making around water. Concerns remain about lingering prejudices on the part of some regional players, and the ongoing exclusion of Tribes in certain regional decisions.

The Tribes' water security concerns are pressing and tied in with matters of sovereignty, Tribal cultural identity, and long-term survival. Oregon Tribes are historically and culturally dependent on regional lakes and rivers and the Pacific Marine environment, which provide anadromous First Foods central to Tribal cultures. Their access and ability to interact with those water bodies has been curtailed by federal and state actions including treaty and water right decisions and over a century of water, economic, agricultural, and energy policies that have often not included the Tribes, but which have impacted water quantity and quality and have greatly reduced Tribal water security.

The Tribes have expressed their desire and right to be more directly involved in water decisions that impact their communities. In 2021, all of Oregon's nine federally recognized Tribes sent a formal request to the Governor's Office to establish a Tribal water task force that would include the nine Tribes and the state's core water agencies. The purpose of the task force would be to educate both parties: the Tribes wanted to learn more about which state agencies intersected with water and how, and in turn wanted to educate those agencies on the full complement of Tribal water interests and issues needing acknowledgment. The Tribes, as the first inhabitants of the state, requested their voices be included in the state's 100-Year Water Vision to "ensure its comprehensive commitment to our collective human and ecosystem resiliency needs." The task force began meeting in June 2022. Coordination, co-management, restoration, education, and the integration of cultural values were some of the themes covered.

In a discussion with the State Supported Regional Water Management Workgroup in May 2022, Tribal representatives shared they honored water in their ceremonies and considered how to balance their needs and care for water as a precious source of life.

Several Oregon Tribes are involved in regional and statewide water management discussions. However, direct involvement in numerous state processes can often be difficult for some small Tribal governments with limited capacity. The state must include the Tribes in a more meaningful way around water planning and high-level decision-making for the state as a whole and for their regions specifically. Incorporating Tribes that want to be involved as key players in a regional structure could help to address some of the needs they have voiced to the state.

Tribes that never had federal recognition, or did not regain it after termination, have been largely disenfranchised from land and water stewardship. In the state of Oregon, these unrecognized tribes include the Chinook Nation and the Clatsop-Nehalem Confederated Tribes of Oregon. Both Tribes have attempted to gain federal recognition.

Including the Tribes more directly in state and regional water decisions as co-managers would allow state leaders and agencies to learn more about their practices and begin to incorporate them more broadly and where appropriate for local ecosystems. It would also provide greater opportunity for Tribes to influence state and regional decisions that affect their communities.

Tribal Termination and Restoration

In the 1950s and 1960s, the federal government ended its recognition of the sovereignty of over 100 Tribes with the stated intent of assimilating their peoples into mainstream American society. Several Oregon Tribes were subject to termination in the 1950s, including the Coquille, Cow Creek, Coos, Lower Umpqua, Siuslaw, Grand Ronde, Siletz, and Klamath. For tribes like Cow Creek, termination "declared there were no more Indians left in western Oregon."

Termination had disastrous economic, environmental, cultural, and personal impacts on those targeted. Tribes like the Klamath lost their land almost overnight, in what they considered to be a bid to gain control over their remaining natural resources. Tribes lost federal support for health care and education programs, utilities, and other support services previously available to them on reservation lands. In all, about 2.5 million acres of land were taken by the federal government from Tribal holding nationwide. Termination also delayed Tribal access to full water rights and set back potential investments in water security measures.

Tribes petitioned and advocated for years to regain their recognized sovereign status, and several in Oregon succeeded. Some regained ownership of some of their historic lands after the restoration of federal recognition in the 1980s, though these tended to be small, noncontiguous parcels.

Tribes in Oregon seek to regain access and use of their ancestral lands and participate as leaders and equals in land and water stewardship efforts. Both recognized and non-recognized Tribes are actively buying back portions of their historic lands. For some, the goal is the full restoration of traditional, aboriginal lands to Tribal stewardship. Expanding upon their current land holdings would allow Tribes to more fully implement Tribal land and water management programs and practices.

Other states are beginning to include Tribes more directly in regional water and land management decisions. In 2020, California released a Statement of Administration Policy on Native American Ancestral Lands,[35] which encouraged California state entities to support Tribal co-management and access to natural lands within Tribal ancestral territory under the ownership or control of the state. Administration policy also encourages state entities to work cooperatively with California Tribes that seek to acquire natural lands "in excess of State needs."

In September 2022, the Yurok Tribe entered into a Memorandum of Agreement with California State Parks to support the integration of Yurok Traditional Ecological knowledge into their natural resource management practices in the Yurok Tribe's ancestral lands. Shortly after, five Tribes in the newly established Tribal Marine Stewards Network reached an agreement with the state of California to allow them to manage more than 200 miles of coastal lands. This will include monitoring salmon migrations, testing for toxins in shellfish, and providing cultural educational resources.

[35] Governor Newsom released the Statement of Administration Policy on Native American Ancestral Lands on September 25th, 2020. https://www.gov.ca.gov/wp-content/uploads/2020/09/9.25.20-Native-Ancestral-Lands-Policy.pdf

Tribal land and water management practices acknowledge the human relationship to ecosystems and our role in maintaining ecological health

There is a clear recognition among Oregon Tribes of the close linkages between the ecosystems in which they live, their cultural expressions and traditions, and their well-being as a people. The Tribes tend to view water, land, and ecosystem and human needs as integrated and interrelated; humans are not separate from a functioning ecosystem but are instead part of it. They also use traditional and ecologically appropriate water, land, and ecosystem management practices.

For example, the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) developed a mission for their Department of Natural Resources to "protect, restore, and enhance the First Foods — water, salmon, deer, cous, and huckleberry — for the perpetual cultural, economic, and sovereign benefit of the CTUIR." CTUIR proposed to accomplish this mission using "traditional ecological and cultural knowledge and science to inform… population and habitat management… natural resource policies and regulatory mechanisms" and subsequently created the Umatilla River Vision (2008) and Upland Vision (2019) to provide management guidance for water quality and habitat restoration in its areas of rights and interest.

The water vision introduced a framework that sought to "reflect the unique tribal values associated with natural resources and to emphasize ecological processes and services that are undervalued by westernized Euro-American natural resource strategies." CTUIR has engaged in many water planning and management actions in alignment with their River Vision and values.

Tribally managed forest land (center) withstood the destruction of the Bootleg Fire. | Source: Klamath Tribe

These practices may also be more resilient in the face of climate change. For example, the Klamath Tribes use a combination of thinning and prescribed fire treatment on their forestland. When the Bootleg Fire swept through Klamath County in 2021, it burned over 400,000 acres of forestland, with minimal damage to Tribally managed forest.

According to the Sixth Oregon Climate Assessment, "…tribal adaptation to environmental and social change over millennia can enable unusually high resilience." Tribal communities are responding to water insecurity and climate change with ceremony, political action, workforce development, environmental stewardship, and youth education and fellowship.

Bitterroot harvest in NE Oregon. | Source: CTUIR Upland Vision, 2019.

Though resilient, Tribal communities and culture are still distinctly at risk. State leadership has recently been more responsive to Tribal requests and concerns, but the Tribes do not consider the state's water management work to focus enough on integrated ecosystem health and recovering fisheries. The decline of such species as salmon, lamprey eels, and suckerfish represents not only the impending loss of critical first foods, but signals many of Oregon's ecosystems, and the cultures and communities they support, are under immediate and profound threat. This trend bears direct and devastating consequences for Tribes, neighboring communities, and ultimately for all the people of Oregon.

The state's natural resource agencies also tend to be chronically underfunded and understaffed to meet the array of responsibilities that they have. This contributes to agencies managing water in a reactive way, primarily responding to complaints, and failing to manage water proactively for long-term human and ecosystem needs. The state must pursue a fundamental shift in water resource management over the long term to better protect water security.

Tribal leadership of the Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians shared, "The State of Oregon has a responsibility to all the people of Oregon to protect water, the life blood of Mother Earth. The water in Tenmile Lake being polluted six months of the year is not acceptable. The State of Oregon is not a third world country."[36]

[36] See Appendices A and B for written statements on water security prepared by the Confederated Tribes of the Umatilla Indian Reservation and the Confederated Tribes of the Coos, Lower Umpqua and Siuslaw Indians.

Tribal Engagement in Local Water Solutions

Water is Life!

Oregon Tribes, as Oregon's original stewards, are actively engaged in seeking out and implementing solutions to water and ecological problems that impact their communities and local ecosystems and seek to expand on their efforts. As stated by the Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians: "We would like to be at the table and help make decisions as it relates to water allocation and permitting within our ancestral territory."

The Klamath Tribes

- Enacting a fully developed a forest management plan for their former reservation lands now part of the Winema and Fremont National Forests
- Working with some local landowners to apply traditional land, timber, and water management practices, like slash burning and building beaver analog dams
- Setting up a Tribal fish farm to raise young suckerfish to be reintroduced to the lake when the time is right
- Lobbying the state and federal government to review and change policies and practices that are detrimental to the ecosystem

The Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians

- Envisioning the renaming of their waterways in local languages and considering Environmental Personhood[37]
- Working closely with the Oregon Department of Environmental Quality and EPA to develop their own Tribal Water Quality Standards, which are currently out for public comment
- Acting as stewards to all lands, plants, animals, and waters in and out of their ceded lands

The Confederated Tribes of the Umatilla Indian Reservation

- Developing their own Water Code and water quality standards
- Developing the Umatilla River Vision and Uplands Vision that shares the Tribe's goals for water and local ecosystems in the Umatilla basin and acknowledges the complex and integral nature of water resources and First Foods
- Participating in a variety of efforts around strategic planning, regulation, research, river restoration and management, budget and decision support for Oregon's water agencies, water rights negotiations
- Committing to settling its Umatilla Basin water rights claims to the greater benefit of the Tribe and the region

[37] Environmental personhood is a legal concept that designates environmental entities the status of a legal person, with the same rights, protections, and privileges.

What Are Our Recommended Actions?

The Oregon Legislature, Governor's Office, and relevant state agencies must adopt holistic and integrated policies and practices in line with good water governance principles. Oregon should build on previous and ongoing efforts to develop a state and regional water planning framework.

By adhering more closely to good governance principles and developing a regional framework set up to support water security and address water quality, quantity and ecosystems needs, the state can craft an approach to water governance that will benefit current and future generations. These principles and actions can support statewide water security and help balance the state's water needs.

As part of this work, state leadership needs to accomplish the following:

1. Sustain legislative commitment and develop shared priorities to guide Oregon in making holistic and inclusive water decisions promoting water security.
2. Connect a regional planning system with an integrated state water plan to guide water decisions and policy development.
3. Convene a formal planning and coordination body to guide the statewide plan and provide consistent support for regional governance needs.
4. Define and clearly establish agency roles and responsibilities in state and regional water plan development and implementation.
5. Take steps to balance interests and address high-priority water security needs by increasing public engagement in state and regional water management decisions.
6. Enhance public awareness and understanding of the state's urgent water challenges.
7. Explore opportunities to prioritize water security and equity more clearly in state policy, such as enshrining the human right to water in law and other policy changes that could expand protections for community and ecosystem health.
8. Improve water data to help Oregon agencies and communities better understand statewide and regional water needs and support strategic decision-making.
9. Adopt a strategic approach to water funding and a consistent funding base to support desired outcomes.
10. Show clear support for state water agencies tasked with carrying out regulatory responsibilities.
11. Integrate federally recognized Tribes as full and equal partners and co-managers in water decision-making.

This report is intended to promote the best possible management of public resources.
Copies may be obtained from:

Oregon Audits Division
255 Capitol St NE, Suite 180
Salem OR 97310

(503) 986-2255
audits.sos@oregon.gov
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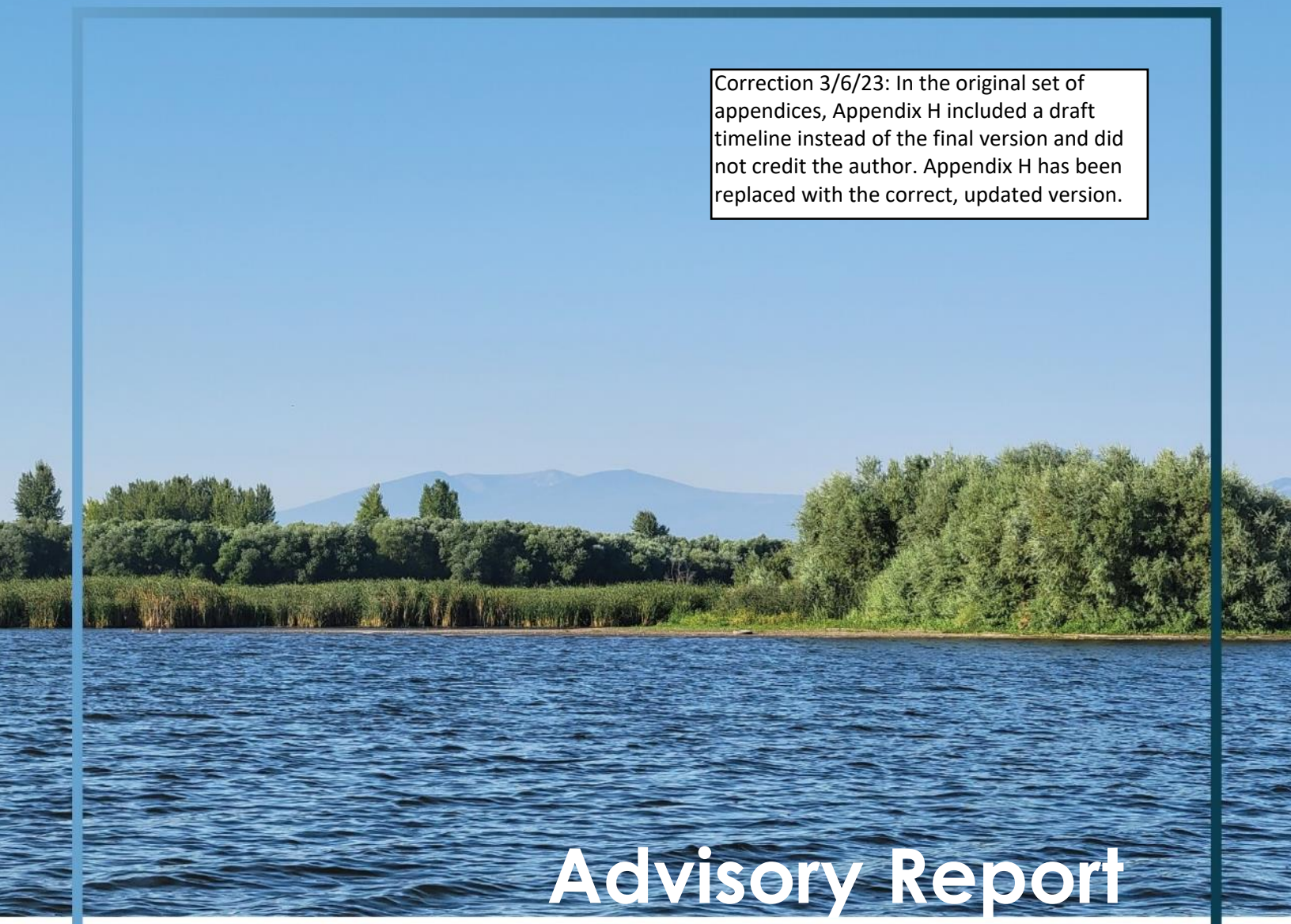
OREGON SOS
Secretary of State
Shemia Fagan

OREGON AUDITS DIVISION
Audits Director
Kip Memmott

Correction 3/6/23: In the original set of appendices, Appendix H included a draft timeline instead of the final version and did not credit the author. Appendix H has been replaced with the correct, updated version.



Advisory Report

State Leadership Must Take Action to Protect Water Security for All Oregonians: APPENDICES

January 2023
Attachment to Report 2023-04

OREGON SOS
Secretary of State
Shemia Fagan

OREGON AUDITS DIVISION
Audits Director
Kip Memmott

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Appendix A: Written Statement Regarding Tribal Water Security from the Confederated Tribes of the Umatilla Indian Reservation

Background

The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) understand the Oregon Audits Division is producing an advisory report reviewing aspects of Oregon's approach to water governance. Their project will consider how Oregon's water security is impacted by its approach to governance and will include profiles of communities — including CTUIR - and individuals that are water insecure or have relevant concerns about their water security. For purposes of their report, the Audits Division is using the United Nations definition of water security; Water Security: *"water security; in short, water security is having access to enough safe, clean, and affordable water for all Oregon communities to sustain human wellbeing, protect livelihoods and socio-economic development, protect against pollution, and preserve ecosystems."*

CTUIR Department of Natural Resources (DNR) staff reviewed this opportunity with the CTUIR's Tribal Water Commission, and the Audits Division's suggested outline format for submitting information, and offers this document as a written statement to help inform the advisory report. Similar to the suggested outline, our information is organized as follows:

1) A brief CTUIR community profile;
2) Key CTUIR Perspectives on water;
3) CTUIR Water Governance Examples;
4) CTUIR Priorities;
5) CTUIR Vision Examples; and
6) Summary.

We understand portions of this submittal may be used to develop a profile of CTUIR in the report, and understand that CTUIR will have an opportunity to review and inform the draft profile.

1. The Confederated Tribes of the Umatilla Indian Reservation

The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) is a confederacy of three tribes, the Cayuse, Walla Walla, and Umatilla, and Tribal membership numbers 3,165 as of September, 2022. About 28% of the membership are over 55, and nearly 30% are children under the age of 18. About half of CTUIR's members live on or near the Umatilla Indian Reservation (Figure 1).

The Tribes ceded 6.4 million acres to the US Government in current NE Oregon and SE Washington, and retained reserved treaty rights within these ceded lands. Importantly these rights include the rights to fish, hunt, and gather tribal First Foods, all of which depend on secure supplies of quality water.

The Treaty of 1855 also established a reservation homeland (Figure 1). Tribal water rights include instream flows to support treaty fishing rights in the Umatilla River basin and other Ceded river Basins. The water rights also include consumptive use water to meet the purposes for which the Umatilla Indian Reservation (UIR) was created, to serve as a homeland of the CTUIR. These consumptive uses

may include domestic, commercial, municipal, and industrial uses (DCMI) as well as use for agriculture. A Umatilla Basin water rights settlement, currently in negotiation, will establish water for both of the instream and consumptive use purposes.

Figure [1]. The Umatilla Indian Reservation and aboriginal title lands. Map produced by the Confederated Tribes of the Umatilla Indian Reservation (CTUIR). Data depicted here are preliminary. No warranty is made for this information beyond the purposed intended by CTUIR staff. The data depicted in the map is the sole proprietary information and property of the Confederated Tribes of the Umatilla Indian Reservation. None of these data, or any information derived from these data, may be transmitted to third parties without the express and explicit authorization of the CTUIR. Any products generated from the data shall not be disclosed, licensed, in whole or part, to any third party without the CTUIR's express written permission. Other than copies for backup and archival purposes, you shall make no copies of the data, or any part thereof, without the express and explicit consent of the CTUIR. All data copies made shall remain the property of the CTUIR. Any damages of interests or property of the CTUIR shall be the sole liability and responsibility of the party disclosing the information without prior authorization.

2. Key CTUIR Perspectives on Water

The following is from the introduction of the Board-of-Trustees adopted Tribal Water Code, and summarizes key Tribal perspectives on water:

"...We must share water with all living things. If we do not share, our greed will harm us. We must not look upon waqts wit (life) as the .iciyapu. We must take care of the water. Seven generations in the past we had good water. Seven generations in the future we must give back the same that was lent to us by Attila (the Creator); cold, clean water. So we think of fourteen generations of cold, clean, plentiful water. As we did seven generations back, so should we be able to do seven generations in the future, go to any stream or river and get cold clean water to drink.

"CauSnimna inaknawiya§a naaman /Wax wawnak kes" Water keeps all our bodies for us. Cali§ is apart of everything. It is within natitayt, it is within tiiocim, and it is within nfisux (the salmon). It is essential for the survival of all life. Cold, clean, healthy water is the life blood of the land. We drink water to remind us of who we are. Cates" cleanses and heals our bodies, "Plix iwa eau§". "

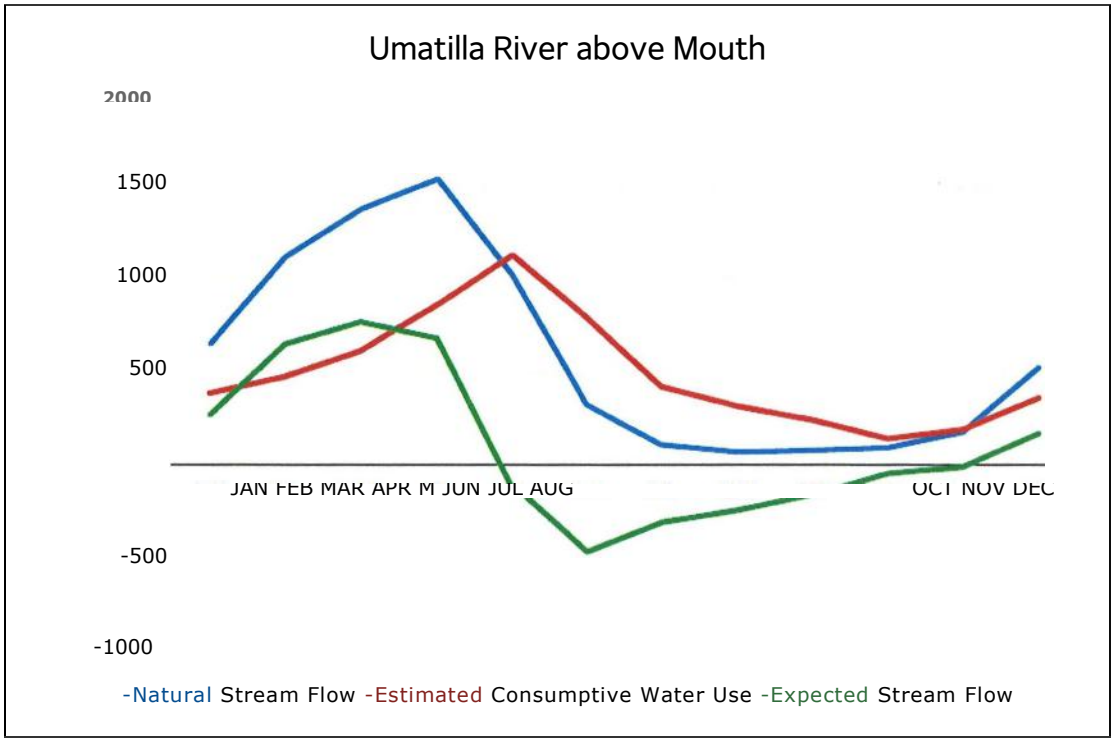
Water (Cuus), is a First Food of the CTUIR. In CTUIR creation belief and religious practice, Water and other First Foods promised to care for the Indian People, and in return, the People have a reciprocal responsibility to care for the First Foods. The serving order for First Foods is Water, Fish, Big Game, Roots, and Berries. Traditional meals begin and close with a sip of water to emphasize its importance to the other foods and the People. Therefore, water is not just a natural resource, it is a religious and cultural resource, and the emphasis on reciprocity is unique and distinct from EuroAmerican and western science water management practices.

Water is also central to cultural practices such as the sweathouse or sweat lodge. In this practice, water is part of the sweat ritual in terms of sprinkling or throwing water on heated rock within the sweathouse to generate steam and encourage the body to sweat, and then rinsing with freshwater after the steam bath. This is a practice that includes song and prayers, and again indicates at the central role water plays in Tribal religious and cultural practices. It also emphasizes the need for water to be both available and of high quality for human consumption and use and interaction in practices like the sweat.

CTUIR's water needs — including consumptive use needs for the Umatilla Indian Reservation tribal members - are currently insecure when evaluated against the "security" definition provided for this audit: *"...water security is having access to enough safe, clean, and affordable water for all Oregon communities to sustain human wellbeing, protect livelihoods and socio-economic development, protect against pollution, and preserve ecosystems."*

In the areas of CTUIR's rights and interests, water rights from streams and rivers are usually allocated over and above what the rivers produce on an annual basis (see Figure 2 below). This limits the ability of our river basins to provide quality water, habitat, and First Foods for use by the CTUIR community and for community cultural practices. Regionally, groundwater supplies — which are linked to surface waters — have been overused and their water quality sometimes degraded (e.g. nitrate contamination in the Lower Umatilla Basin groundwater). Finally, the CTUIR's Umatilla Basin water rights (including instream flow rights, and consumptive use rights from surface and groundwater), have not yet been recognized in a legal, enforceable manner to ensure those waters are present to meet the CTUIR's needs now and in the future.

Figure 2. A graph displaying the difference between estimated natural Umatilla River stream flows in cubic-feet-per-second, estimated out-of-stream consumptive uses, and projected stream flows (data source: Oregon Water



Resource Department Water Availability Reporting System).

The CTUIR currently relies wholly on groundwater to meet the consumptive needs of its membership.

Another key perspective of the CTUIR is that collaboration is required to reestablish and maintain water equity amongst Oregonians and Tribes located in Oregon. The complexity of issues, including intergovernmental relationships related to the CTUIR's Treaty of 1855, political boundaries, land-ownership patterns including tribal, non-tribal, federal, state, and municipal, the complex history of western United States water law and development, climate change, water supply, water demand, as well as other reasons, requires that CTUIR and others collaborate to resolve issues related to our mutual interests. The CTUIR has an established homeland and Ceded Basin, and will continue to reside on and in these areas, and fish, hunt, and gather, and we recognize that doing so results in a high and diverse number of relationships that require collaboration for progress.

3. Water Governance Examples

Here, we highlight some key examples to demonstrate the diversity of CTUIR's water governance experience. Our examples are organized around the following themes:

Operations;

Regulatory;

Strategic planning;

Research and studies;

Management and restoration;

Inter-governmental decision support, and

Negotiations.

This is not a complete list of our efforts, but rather one that illustrates the diversity of our work, and the temporal, geographic, and political scope of it. This list also demonstrates our organizational capacity and competence, and our ability to contribute to water governance solutions and progress.

Operations

- Umatilla Basin Project, 2000-Ongoing: Implementation of a water source exchange project where, based on summer instream flow targets, Umatilla Basin Irrigators stop diverting water from the Umatilla Basin in exchange for irrigation water from the Columbia River, thereby allowing Umatilla Instream flows for reintroduced salmon, steelhead, and lamprey. The CTUIR is part of an ongoing Umatilla Basin Project River Operations Committee that includes Umatilla Basin Irrigation districts, the Bureau of Reclamation, and the Oregon Department of Fish and Wildlife. The CTUIR also collaborates on exchange operations that are annually dependent on in-basin water availability to manage basin water supplies for instream flows and determine flow threshold points at which irrigation districts will switch to the Columbia River as an alternate water supply.
- Umatilla Indian Reservation Municipal Well and CTUIR Public Works infrastructure for the UIR community's domestic, commercial, municipal, and industrial water uses.

Regulatory

- CTUIR Umatilla Indian Reservation Water Code Adoption (1981) & Implementation (ongoing);
- CTUIR Adopts Tribal Water Quality Standards (1999);
- CTUIR Achieves Treatment-as-State Status for Tribal Water Quality Standards on UIR (2001);
- Oregon Fish Consumption Rate (FCR) Project (year); - A CTUIR-led, EPA-funded effort to collaborate with Oregon Department of Environmental Quality and Oregon stakeholders to raise the fish consumption rate, which had been 17.5 grams per day based on a national average, to a consumption rate of 175 grams/per day, so that water quality standards were more protective of fish consumers, including Tribes such as the CTUIR.
- Rules Advisory Committee Participation for OWRD and OWEB — multiple examples of participating in RACs for both OWRD, and OWEB.

Strategic Planning

- OWRD Integrated Water Resources Strategy Development 2010-12 - CTUIR staff served on policy and technical advisory committees;
- Senate Bill 839 Taskforce, 2013 — establishing a Water Supply Development Account to provide loans and grants for water resource projects that have economic, environmental, and community benefits. Before the Water Resources Department and Commission can begin developing rules and issuing grants and loans, SB 839 required the Governor, in consultation with Legislative leadership, to appoint a "Seasonally Varying Flows Task Force" that would create and submit a report to the Oregon

Legislature, Governor, and Water Resources Commission. This memo serves as the report required by SB 839 in accordance with ORS 192.245.

- House Bill 4113 Oregon Drought Task Force, 2016. Produced a "Report of the Task Force on Drought Emergency Response," which identified a number of recommendations to address drought issues in Oregon.
- Place Based Planning — Grande Ronde Basin, 2022. Basin planning effort to identify water sources, availability, needs, including consumptive and instream uses,
- Wallowa Dam Project (2018-Ongoing) - CTUIR participates, via a Memorandum of Agreement, with the Wallowa Lake Irrigation District, Nez Perce Tribe, and Oregon, to develop resources to safely reconstruct Wallowa Dam to restore storage capacity, provide instream flows to the Wallowa River and restore fish passage to Wallowa Lake, and to protect downstream municipalities.
- Walla Walla 2050 — A three sovereigns effort (OWRD, Washington Ecology, and CTUIR) to plan, develop, and sustainably manage water resources in the Walla Walla Basin, including to increase and legally protect instream flows in both states for native aquatic species;

Research & Studies

Multiple research efforts, including a NASA-funded effort (2000) to understand floodplain processes that influence stream temperatures and provide suitable habitat for native fish. Many Oregon streams are 303(d) listed for "temperature" as a pollutant, and understanding hyporheic exchange processes in floodplains, and how to restore those processes, is critical to restoring water quality in terms of temperature to meet water quality standards and for supporting native fish productivity for Tribal people's religious, cultural, and dietary purposes. Staff from CTUIR, and collaborators from academia and federal agencies, have thus far produced seven peer-reviewed science publications on topics related to hyporheic exchange. These publications help inform restoration of rivers in CTUIR's areas of rights and interests and floodplain understanding more broadly as well (regionally, nationally, and internationally).

Studies

- Groundwater Monitoring in the upper Umatilla Basin: 1979— current.
- Initiate the development of a collaborative groundwater numerical model of the Umatilla Structural Basin (USGS Umatilla Basin Ground-Water Study): 2003.
- Spring inventory and annual monitoring: 2009-present.
- Collaborative development of an upper Umatilla Basin conceptual model and groundwater budget: 2011/13, USGS Publication in 2017.
- Collaborative groundwater recharge and environmental tracer study of the upper Umatilla River Basin: 2015-2023.

River Restoration and Management

- Fish habitat enhancement in the John Day, Grande Ronde, Umatilla, and Walla Walla (bi-state) basins to improve water quality (temperature) and native fish habitat and fish productivity. These efforts are guided by the CTUIR's River Vision framework, which was designed to ensure key river restoration issues are identified and addressed consistently across CTUIR's areas of rights and interests;

- Instream flow leases/acquisitions and floodplain habitat acquisitions or conservation easements— successfully obtaining funding and using the funding to secure instream flows and floodplain and upland habitats then managing them consistently with river and upland visions; and
- Upland habitat management on the UIR and on off-reservation Tribal fee properties to improve watershed functions of water capture, storage, and release. These efforts are guided by an Upland Vision to ensure key upland issues are identified and addressed consistently across CTUIR's areas of rights and interests.

Decision Support to Oregon:

- OWRD Budgets Proposals to Oregon Legislature (annually); CTUIR provides input and supportive testimony.
- Decision support to OWEB — Project review teams to score and rank funding proposals, staff participation as OWEB Tribal Representative (years); and
- Advocacy for Oregon 100-Year Vision concept (2019-Ongoing).

Negotiations

- The Treaty of 1855, (12 Stat 945) established a CTUIR homeland and reserved pre-existing rights, including but not limited to fishing, hunting, and gathering. The subsequent 1908 Supreme Court Winter's Decision held that Tribes received a federal reserved water right to satisfy the principal purposes for which the Umatilla Indian Reservation was created with a priority date of the treaty (1855). Later, the 9th Circuit Court held instream flow rights had a time immemorial priority date to support fishing rights.
- Umatilla Basin Water Rights Settlement Negotiations (2011- Ongoing). The CTUIR is in productive, collaborative negotiations for its Umatilla Basin Water Rights with the State of Oregon (OWRD Director and staff), a Federal Negotiation Team, and multiple Umatilla Basin Water Rights Holders.

4. CTUIR Priorities

The CTUIR has the following on-going and water-related priorities. Please note this does not represent all of CTUIR's water-related work efforts:

1) Umatilla Basin Water Rights Settlement;
2) Ceded Tributary basins instream flow planning and implementation;
3) Columbia River Treaty Ecological Flows advocacy;
4) CTUIR feasibility study for wastewater treatment and reuse to conserve UIR groundwater;
5) Climate Change Adaptation
    a. Instream flows enhancement and protection; and
    b. Consumptive use waters for the community.

5. Example CTUIR Vision Statements

As requested by the Oregon Audits Division, the CTUIR offers the following examples of vision statements related to water:

- River Vision: *"The Umatilla and other basins include healthy rivers capable of providing First Foods that sustain the continuity of the Tribe's culture. This vision requires rivers that are dynamic, and shaped not only by physical and biological processes, but the interactions and interconnections between those processes."*
- Upland Vision: *"...healthy, resilient and dynamic upland ecosystems capable of providing First Foods that sustain the continuity of the Tribe's culture."*
- Umatilla Basin Water Rights: *"The CTUIR is committed to settling its water rights claims for current and future generations while providing certainty to the non-Indian communities and interests and accruing benefits across the basin, communities, and landscapes. "*

6. Summary

The CTUIR generally agrees with the provided characterization of "water security:" but we suggest Oregon consider refining the definition similar to the following:

> *"water security; in short, water security is the ability of all Oregon communities to* access *and interact with adequate, safe, clean, water to sustain human wellbeing, protect livelihoods and socio-economic development, protect against pollution, and preserve ecosystems."*

But, recognize also that terms such as *"human well-being, livelihood, socio-economic, and ecosystems"* have tribal cultural contexts and perspectives that vary from other Oregon communities' perspectives. We strongly suggest our perspectives — including an emphasis on reciprocity — have and can continue to enrich and inform Oregon's water governance efforts.

The CTUIR *does not* currently enjoy water security as defined above because:

1) Instream flows are inadequate for quality water, native fish, and tribal member uses including cultural uses and to meet dietary needs (fish and other First Foods);
2) Fishing opportunities in Oregon rivers where CTUIR retains the right to harvest fish are inconsistent, infrequent, and offer low fish abundance, as opposed to providing regular, reliable harvest;
3) Water quality issues stemming from floodplain development and overdevelopment in CTUIR's areas of rights and interests impair hyporheic exchange and raise stream temperature, and pollutants and toxins from a variety of non-point sources (e.g. 6PPD from tire waste that causes salmon mortality) also impact water quality and threaten human health;
4) Climate change impacts to the hydrologic cycle are varied and resultant impacts to instream flows and native fish ecology detract from water security;
5) The CTUIR relies completely on groundwater for CTUIR consumptive uses on the Umatilla Indian Reservation, in a Umatilla Basin that includes four of Oregon's seven "Critical Groundwater Areas."

Oregon should continue and expand what it does well, including:

1) Funding floodplain and river restoration to the benefit of water quality and fisheries (e.g. OWEB programs and projects);

2) Increased surface and groundwater data collection to inform outreach and education to affected stakeholders;
3) Funding water projects with multiple benefits, including economic, social, and environmental;
4) Providing neutral facilitation on complex water governance and management issues;
5) Providing opportunities for Tribal representatives to sit on boards, commissions, committees, and taskforces related to water governance;
6) Continuing its outreach to Oregon tribes, as it has done in the 100-year vision community listening sessions, and the Oregon Tribal Water Task Force;
7) Recognizing Tribal sovereignty, and authorities and responsibilities of Treaty Tribes to manage and co-manage water in Tribal areas of rights and interests.

Oregon can further improve water governance and help increase water security for the CTUIR by:

1) Strategic and collaborative planning that incudes early Tribal consultation to involve CTUIR in the decision processes related to water governance as part of continual efforts to ensure the diverse needs of Oregon's communities are represented in water management and policy decisions that affect water security;
2) Using peer-reviewed research results to inform water and water quality management and policy development;
3) Development and implementation of more robust and integrated funding programs for water infrastructure, including built infrastructure, (water storage, treatment, delivery, water data collection and data management systems), and natural infrastructure (e.g. watershed health, floodplain health, wetlands) and ensuring these programs are open to Oregon communities;
4) Increased measurement and monitoring of river flow and groundwater data to protect connected instream flows and groundwater;
5) Increased measurement and reporting of water quality for ground and surface waters;
6) Establish instream flow water rights in appropriate areas not already over-allocated so they can be regulated and protected;
7) Ensuring that Oregon's Columbia River water management is demonstrably considerate of and protective of Columbia River instream flows that are critical to Treaty Reserved fishing rights;
8) Improving coordination and integration between water management and land use decisions — particularly in floodplains — to better protect water quality and stream flow. For example, floodplain development negatively impacts rivers by simplifying aquatic habitat and increasing stream temperature, but it also may include appurtenant groundwater development that further reduces stream flows because ground and surface waters are connected;
9) Negotiating and establishing tribal water rights that diversifies CTUIR's water sources, and then protecting Tribal water rights from use by others when and where necessary (e.g. protection of instream flows off-reservation);
10) Placing and maintaining water management and policy issues in an "Environmental Justice" context to try and address the needs of Oregon's diverse communities, including Tribes; and
11) Reporting information on water as a public resource, including quantity and quality issues, and reporting on the use of public funds used in water development, protection, or restoration.

Appendix B: Written Statement Regarding Tribal Water Security from the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians

Department of Culture and Natural Resources
Confederated Tribes of Coos, Lower Umpqua and Siuslaw
1245 Fulton Ave
Coos Bay, Oregon 97420

Bonnie Crawford, MPA
Secretary of State
Oregon Audits Division

September 14, 2022

RE: Water Advisory Project – CTCLUSI Positions and Comments

Dear Bonnie Crawford,

Water is Life! Water is and always has been an important resource for the Confederated Tribes of Coos, Lower Umpqua, & Siuslaw Indians (CTCLUSI). The importance of water cannot be overstated. If water is managed first and foremost, everything else falls into place. Water and all other natural resources are cultural resources. They shape our culture and we them.

CTCLUSI has several water security concerns, including:

- Salt water intrusion- we have limited available fresh water on the coast (dunal aquifers fed by rain); in the event of droughts over several years, available fresh water will decrease. If industry increases, specifically on North Spit in Coos Bay (e.g. shipping container facility, and other prospective industries), salt water intrusion and ground water contamination can become a very real issue.
- Grandfather Water Rights (prior appropriations) and over allocated water permissions; We believe that the salmon people, lamprey and all other water dependent life should have first rights.
- Dredging-deepening and widening of the channel in Coos Bay will affect culturally significant species, such as shellfish, eel grass, and fin fish. Legacy contaminants will be resuspended in the water column and bioaccumulate in culturally significant species, which will ultimately affect human health if consumed. Submerged historical village sites and cultural artifacts may be damaged or destroyed during dredging activity. Widening and deepening the channel will directly kill many shellfish and also remove habitat for shellfish and nursery grounds for many fish species.
- Rain water collection. Are we going to be restricted in the future from collecting rain water because of climate change and droughts?
- Harmful Algal Blooms (HABs) and aquatic invasive species are expected to increase as temperatures increase due to climate change.

- Increased nutrient loading and sediment inputs due to fires, agriculture, and timber industry.
- Ocean Acidification and Hypoxia issues with increased levels of CO2 and higher temperatures

In the future, CTCLUSI envisions the renaming of our waterways in the local languages and the consideration of Environmental Personhood, with all the protections that it grants. We are concerned about continued unsustainable priority use designations for industry and private businesses, resulting in insufficient water to support our cultural and natural resources. We would like to see Work Force Development to help support industries and farmers adapt toward more sustainable practices that suite their particular region over the long-term.

We would like Oregon to:

- Stop overpromising water, specifically prioritizing private industry over ecosystem services and socioeconomics.
- Partner with Fish and Wildlife to adopt Traditional Ecological Knowledge (TEK) relating to the long-standing practice of the first salmon ceremony, which guarantees ample opportunities for salmon to migrate upriver and spawn without overfishing pressures brought upon by humans for at least a week.
- Address permitting and lessen the amount of water quality violations by prioritizing timely permit reviews; build capacity to ensure that permits are reviewed in a timely manner. Stop offering permit extensions without adequately reviewing permits that are knowingly in violation of impairing water quality and build capacity to enforce and hold accountable those that are in violation.
- Incentivize restoration- provide tax breaks for landowners that restore wetlands and riparian areas.
- Adopt nutrient standards.

“Water is Life”. Our culture and traditions are intimately tied to water. The waters are our highways, and our means to sustain us economically and spiritually. We hold water sacred and take rigorous measures to ensure that we are respecting water and not angering the water beings. If you take care of the Earth mother, she will take care of you.

CTCLUSI have been stewards of our lands and waters since time immemorial. The Tribe has an inherent right to access our ancestral waterways for cultural and religious purposes. With that being said, there needs to be enough water in those waterways in order for us as Tribal people to practice our culture and ceremonies and support our Tribal socioeconomics.

We have worked closely with ODEQ and EPA to develop our own Tribal Water Quality Standards, which are currently out for public comment. They will be adopted as soon as public comments are addressed and approved by the EPA. We would like to be at the table and help make decisions as it relates to water allocation and permitting within our ancestral territory. We look forward to partnering with the state and federal government and our sister Tribes in water resource stewardship.

John Schaefer
Interim Department Director

Appendix C: Written Statements Regarding Water Security from Lower Umatilla Basin Community Members

The following written statements were prepared by Morrow County community members and collected and submitted to the project team by Oregon Rural Action. Oregon Rural Action staff also translated statements that were originally prepared in Spanish. Both versions are included.

Oregon Secretary of State, Audit Division
Advisory Project: Oregon Water Governance Highlighting Water Insecurity
Interview: Oregon Rural Action and Community Members
August 10 & 15, 2022

Testimony: Alfredo Lopez
Location: Boardman, Oregon

My name is Alfredo Lopez, and it is going to be almost 29 years of me living in Morrow County now. I have been a semi truck mechanic for the past 20 years. I have had my property in Boardman for the last 18 years. I have my own well here in the house that we live in. When I purchased the house, I was required to install a filtration system so that we had access to the clean water. After we tested it recently, the nitrate level in our water came at 39.4ppm, which is almost 4 times the contaminant level. Today I share my testimony in hope that it will help me and my community to receive the necessary resources to ensure that we are a safe rural water community.

The first time I noticed there was something wrong with the water quality was when we had to clean the water heater from all the corrosion buildup from the water. My mother has had her house for about 8 years now and every 3 to 4 months I help her clean the water heater. In addition, the tubes in the house get a lot of build up. We have had to replace all the tubing in the house which was a pricey process.

About 2 years ago, I built a home on the property that I had owned for the last 18 years. I currently reside there with my family. However, before I was able to get a loan for the house I had to install a pricey filtration system that was around $5000. It had to be effective for cleaning the nitrates out of the water. I recently tested my water and the nitrates were almost 4 times the contaminant level. I quickly learned that in order to have an effective filtration system, I have to change the filters out every 4 months. It costs me about $280 each time I change the filters, so that totals to more than $1120 of unnecessary expense if I only had clean water out my well.

In May, the Oregon Rural Action team came to me with information about the nitrates. I shared with them a few possible solutions including a special water district, a neighborhood well, or effective water filtering systems. Regardless of the best solution, I think it is important that all pertinent agencies come together on this issue to find the best solution for all the affected people.

I urge you to continue providing resources so that we have access to emergency water, well testing and treatment, until we become a rural community with safe water.

Sincerely,
Alfredo Lopez

Oregon Secretary of State, Audit Division
Advisory Project: Oregon Water Governance Highlighting Water Insecurity
Interview: Oregon Rural Action and Community Members
August 22, 2022

Testimony: Alejandro Rodriguez Sanchez
Location: Boardman, Oregon

Original statement in Spanish

Mi nombre es Alejandro Rodriguez Sanchez, vivo con mi esposa, dos hijas y un hijo, somos residentes de Boardman desde el 2009. Yo trabajo en la agricultura y he tenido diferentes trabajos en este ramo. He vivido en Boardman por trece años, nueve de los cuales han sido en la propiedad donde seguimos hasta ahora que está ubicada fuera de los limites de la ciudad y la cual cuenta con un pozo de agua y este no se comparte con ninguna otra familia.

Desde que compramos esta casa hace casi nueve años nos dijeron los antiguos dueños que el agua no era apta para consumo humano que se podia utilizar pero solo con un filtro de osmosis invertida el cual ya estaba instalado en la casa yo pensaba que con eso era suficiente para consumir el el agua y aunque nos hacian un análisis de la calidad de agua por parte de la compañia DEQ desconocemos los niveles de nitratos y de contaminantes que tenia el agua porque a pesar de ver los resultados no entendiamos por que estos venian escritos en Inglés.

Entonces fue hasta que mi esposa trato de investigar porque ya no nos hacen esas revisiones ella habló con una mujer de DEQ que casualmente habia llegado a tomar una prueba de agua, mi esposa le pregunto que cual era el motivo por el cual no se hacian tan seguido las pruebas de la calidad agua la mujer dijo que si, que la compañia si seguia haciendo las pruebas a

Translated to English

My name is Alejandro Rodriguez Sanchez, I live with my wife, two daughters and a son, we have been residents of Boardman since 2009. I work in agriculture and have had different jobs in this field. I have lived in Boardman for thirteen years, nine of which have been on the property we are still on which is located outside the city limits and which has a well and is not shared with any other family.

Since we bought this house almost nine years ago, the former owners told us that the water was not suitable for human consumption, that it could be used, but only with a reverse osmosis filter, which was already installed in the house. I thought that this was enough, to consume the water and although they did an analysis of the water quality by the DEQ company, we did not know the levels of nitrates and contaminants that the water had because despite seeing the results we did not understand why they were written in English.

So it was until my wife tried to investigate why they no longer do those checks for us, she spoke with a woman from DEQ who had coincidentally come to take a water test, my wife asked her what was the reason why they were not done as followed the water quality tests, the woman said yes, that the company was still testing the water quality and my wife asked for a history of the results of the tests that had been done. Over the

la calidad del agua y mi esposa le pidió un historial de los resultados de las pruebas que se le habian hecho durante los años pasados ya que no se habian recibido los resultados desde el 2014. Mi esposa le dio sus datos para que le pudiera mandar la información a través de un correo electrónico y mi esposa añadió que si esta información podria ser enviada en Espanol. Esta información aún no ha sido recibida. Yo tengo mucha preocupación ya que nosotros estuvimos consumiendo el agua de ese filtro por 7 años y ellos no tomaban prueba de la calidad del agua del filtro. Hace año y medio cambiamos el filtro ya que el anterior dejó de funcionar y con este nuevo filtro nos hicieron nuevas pruebas y estas salieron al limite permitido pero el agua para el resto de la casa tiene arriba de 38 el cual es alarmante porque entiendo que el máximo nivel de nitratos es de 10. Esto nos ocasiona dos problemas.

El principal problema es la salud porque tomamos agua del filtro por siete años al cual no le hicimos una prueba de calidad de agua y eso nos preocupa ya que no sabemos si habrá consecuencias posteriores que afecten nuestra salud. El segundo problema es económico ya que para obtener el agua se genera un consumo de luz y luego tenemos que comprar bultos de sal

para suavizar un poco el agua. Hay un desgaste de nuestros electrodomésticos como la lavadora por ejemplo que ya fue reemplazada, las llaves de los baños y el boiler tambien se cambian porque hay mucha corrosión , otro gasto que impacta cada año son las tuberías del sistema de riego porque los minerales se adhieren a estas y el funcionamiento deja de trabajar de manera adecuada que por eso hay que reemplazarlas. También compramos agua embotellada porque el filtro no da un abasto de agua suficiente para las necesidades de la familia.

Nosotros utilizamos el agua para todo uso por ejemplo lavar la ropa, bañarse, en el sistema de

past years since the results had not been received since 2014.

My wife gave her information so that she could send the information via email and my wife added that if this information could be sent in Spanish. This information has not yet been received. I am very concerned since we have been consuming the water from that filter for 7 years and they did not test the quality of the water from the filter. A year and a half ago we changed the filter since the previous one stopped working and with this new filter they did new tests and these came out to the allowed limit but the water for the rest of the house is above 38 which is alarming because I understand that the maximum level of nitrates is 10. This causes us two problems. The main problem is health and the second problem is economic since to obtain the water, electricity consumption is generated and then we have to use packages of salt to soften the water a little, this causes us to wear out our appliances such as the washing machine that has

already been replaced, the faucets to the bathrooms because there is a lot of salt corrosion, the boiler was changed because there was a lot of corrosion and they had told us that it was changed in 2013. Another expense that impacts each year is the pipes of the irrigation system minerals stick to them and they stop working properly and need to be replaced. We also buy bottled water because the filter does not provide enough water for the needs of the family.

We use water for all purposes, for example washing clothes, bathing, in the irrigation system we only avoid the consumption of water in the body, that is, we do not drink it and we do not use it for cooking. They have analyzed the water and also given us the results.

I ask the competent authorities to help us solve this problem since, like those who live in the city,

riego solo evitamos el consumo de agua en el organismo osea no la tomamos y no la utilizamos para cocinar. Sí han analizado el agua y también nos dieron los resultados. Mi familia y yo hemos firmado la petición confiando en una respuesta positiva por parte de las autoridades ya a la vez, Le pido a las autoridades competentes que nos ayuden a solucionar este problema ya que al igual que los que viven en la ciudad pagamos impuestos y merecemos el apoyo por nuestra salud y por la salud de la comunidad en general y principalmente de la salud de nuestros niños que son el futuro de nuestra sociedad y no queremos tener una sociedad enferma y decadente. De antemano gracias por el apoyo que nos puedan brindar ya que sabemos que el agua es indispensable para la vida.

Sinceramente,
Alejandro Rodriguez-Sanchez

we pay taxes and deserve support for our health and for the health of the community in general and mainly for the health of our children. that they are the future of our society and we do not want to have a sick and decadent society. Thank you in advance for the support you can give us as we know that water is essential for life.

Sincerely,
Alejandro Rodriguez-Sanchez

Oregon Secretary of State, Audit Division
Advisory Project: Oregon Water Governance Highlighting Water Insecurity
Interview: Oregon Rural Action and Community Members
August 5, 2022

Testimony: Dionicio Hernandez
Location: Boardman, Oregon

Original statement in Spanish

Mi nombre es Dionicio Hernandez, y he trabajado en agricultura en el condado de Morrow por 11 años y recientemente, en los últimos dos años, comencé a trabajar en la construcción. He estado viviendo en Boardman, Oregón durante casi 15 años. He vivido en el mismo domicilio aqui en Boardman por los últimos 10 años junto con mi esposa y mis tres hijos. Estamos compartiendo el pozo en nuestra propiedad con otras 2 familias. Hoy comparto mi testimonio, con la esperanza de que esto nos ayude a obtener los recursos necesarios para garantizar que seamos una comunidad rural de agua segura.

Translated to English

My name is Dionicio Hernandez, and I have worked in agriculture as a farmworker for 11 years and recently within the last two years, I started working in construction. I have been living in Boardman, Oregon for almost 15 years. I have been living in my current home for almost 10 years now along with my wife and three kids. We are sharing the well on our property with 2 other families. I am sharing my testimony today, with hopes that this will help us get the necessary resources to ensure that we are a safe rural water community .

Cuando nos informaron que nuestros nitratos estaban muy altos, descubrimos que nuestros resultados deberian ser menos de 10 para ser considerados seguros, y estábamos en 40, estábamos muy preocupados. Nos dijeron que no debiamos usar el agua de nuestra casa para beber o cocinar. Mi esposa, como madre, se preocupó cuando recibimos nuestros resultados porque los niños podian beber agua de la manguera cuando estaban jugando afuera. Se sintió decepcionada de que esto pudiera estar ocurriendo y no se está haciendo mucho para proteger a nuestras familias. Sabemos que en esta situación, los nitratos pueden causar enfermedades graves o uno puede enfermarse seguido y perder el trabajo, lo que genera un impacto económico además de nuestra salud.

Cuando nos mudamos a nuestra casa por primera vez en 2013, fue la primera vez que tuve que lidiar con un pozo, nunca antes habia tenido uno. Al principio pregunté cuáles eran las cosas básicas que habia que saber al respecto a los pozos. Todos dejaron claro que el agua no se bebe porque no está tratada y ahi fue cuando empecé a preguntarme por qué. Aproximadamente un año después, investigué cuál es la función de un pozo, y fue entonces cuando me di cuenta de lo necesario que es tener el conocimiento para saber cómo mantenerlo y qué estar revisando. Fue cuando tomé medidas para cambiar mi sistema.

En el pasado, teniamos un filtro principal que nos costaba alrededor de $70. No funcionó como deberia, creo que por sarro dejó de funcionar bien. Cambié el filtro pero al año y medio dejó de funcionar. Tuve que instalar plomeria nueva en toda la casa debido al sarro y me costó alrededor de $700, me tomó 2 dias instalar todo. Ese trabajo generalmente cuesta $3,000.

Desde abril, las cosas han sido preocupantes. Fue entonces cuando se analizó nuestra agua y descubrimos que habia un problema grave en

When they informed us that our nitrates were very high, we found out that our results should be less than 10 in order to be considered safe, and we were at 40, we were very worried. We were told we shouldn't use the water in our house to drink or cook. My wife, as a mother, felt worried when we received our results because the children could drink water from the hose when they were playing outside. She felt disappointed that this could be occurring and not much is being done to protect our families. We know that in this situation, nitrates can cause serious illnesses or one can get sick often and lose work, which has an economic impact apart from our health.

When we first moved into our home back in 2013, it was the first time that I had to deal with a well, I never had one before this. At first I asked around what were the basic things to know about it. Everyone made it clear that you don’t drink the water because it’s not treated and that is when I started to wonder why. About a year later, I investigated what the function of a well is, and that is when I realized how necessary it is to have the knowledge to know how to maintain it and what to be checking for. It's when I took action to change my system.

In the past we had a main filter that cost us about $70 . It didn't work as it should, I think due to rusting it stopped working well. I changed the filter but after a year and a half it stopped working. I had to install new plumbing in the whole house due to the harsh water and it cost me about $700, it took me 2 days to put everything in. That job typically comes out to $3,000.

Since April, things have been worrisome. That’s when our water was tested and we discovered that there was a serious problem in our community. I started talking with my neighbors about why this was happening now. We discussed the possible contaminants such as

nuestra comunidad. Empecé a hablar con mis vecinos sobre por qué estaba pasando esto ahora. Discutimos los posibles contaminantes como

los pesticidas de la agricultura aquí. Comenzamos a recibir el servicio de entrega de agua, lo que realmente nos ayudó a eliminar un costo adicional para nosotros, y ya no tenemos que preocuparnos por salir a comprarla regularmente, lo cual ha sido agradable.

Recientemente también recibimos un nuevo sistema de filtración del condado, pero las cosas siguen siendo preocupantes, porque no sabemos si el filtro que recibimos del condado funcionará hasta que recibamos los resultados y veamos qué tan bien funciona. Veremos cuánto dura para mejorar la situación. Es fundamental que sigamos aprendiendo más sobre este problema y descubramos qué se debe hacer para proteger a los miembros de nuestra comunidad. Les pido de manera urgente continuar brindando recursos para que tengamos acceso a agua de emergencia, pruebas de pozos y tratamiento, hasta que nos conviertamos en una comunidad rural con agua segura.

Sinceramente,
Dionicio Hernandez

pesticides from the agriculture here. We started receiving water delivery service which has really helped eliminate an extra cost for us, and we no longer have to worry about going out to buy it regularly which has been nice.

We recently received a new filtration system from the county as well, but things are still worrisome, because we do not know if the filter we received from the county is going to work until we receive the results and see how well it works. We will see how long it lasts to improve the situation. It is critical that we continue to learn more about this issue and figure out what needs to be done to protect members in our community. I urge you to continue to provide resources so that we have access to emergency water, well testing, and treatment, until we become a safe rural water community.

Sincerely,
Dionicio Hernandez

Oregon Secretary of State, Audit Division
Advisory Project: Oregon Water Governance Highlighting Water Insecurity
Community Member Statement: Debbie Radie
August 15, 2022

My name is Debbie Radie and I have lived and worked in Morrow County for 32 years. I have been an active in the community as a resident and in my professional role, I am Vice President of Operations for Boardman Foods, Inc. As our company websites notes, we are a company located in Boardman, Oregon and committed to our family of customers, growers and employees and sustainable business practices to produce “the best onions in the country.”

I am a well owner and live in Irrigon. In June, when the County declared a water emergency, I became actively engaged in learning more about well safety. I was concerned as were my friends who also have wells on their property. We were concerned and uncertain about where to go to get reliable

information in a format that was bilingual and easy to understand. With so many issues related to well ownership it seems obvious to me that state agencies should provide more educational information. I believe this is an important issue that the State can provide. We need clear communication to well owners about well safety and the resources available to them when there is a concern.

If this is a matter of state agency budgets, I would hope that funding for these important services to Oregonians would be considered at the next appropriate meeting of the Emergency Board or legislative session.

I remember years ago that our very good friends and community members, Ray and Carol Michaels, provided information on well safety. She was with OSU Extension and offered information at the county fair and other public events. Is this something that could be used as a model for widespread community outreach and considered for current funding?

As a well owner I recognize that I have personal responsibility for my family's health and safety. But I do not have access to the best scientific information I need. I so believe in education. Education needs to be widely available to people in our communities. As a community and business leader, I am going to work with others to put together a packet of information and distribute it in the community and I hope we can receive assistance from public health agencies to effectively get the word out.

Sincerely,
Debbie Radie

Oregon Secretary of State, Audit Division
Advisory Project: Oregon Water Governance Highlighting Water Insecurity
Interview: Oregon Rural Action and Community Members
July 7, 2022

Testimony: Flora Calvillo
Location: Boardman, Oregon

Original statement in Spanish

Mi nombre es Flora Calvillo soy de Boardman Oregon, y tengo desde el 1984 viviendo en esta área. Yo trabajo en las plantas del proceso, pero antes trabajé en el campo desde que llegué a este pais. Soy madre de tres hijos y una hija. El más chico tiene 24 años. Hoy comparto mi testimonio con la esperanza de que haya un cambio para el bien de nuestra comunidad.

Como muchas personas más en esta comunidad, no sabemos qué nos tomamos. Ahora que vinieron a mi casa para hacerme la prueba del agua, mis resultados regresaron un poco más altos de lo que deberia ser, 11.7. Me explicaron

Translated to English

My name is Flora Calvillo, I am from Boardman Oregon, and I have been living in this area since 1984. I work in the local processing plants, but before that I worked in the fields since I arrived in this country. I am the mother of three sons and one daughter. The youngest is 24 years old. Today I share my testimony with the hope that there will be a change for the good of our community.

Like many other people in this community, we don't know what we are drinking. Recently, my well water was tested and I discovered that my results came back a little higher than it should

que los nitratos pueden causar daño en el organismo, y pues esto me preocupa porque, ahora no se si debido a esto, me he enfermado antepasado. De hecho, el agua lo usamos para todo, es esencial para cada hogar. Lo utilizamos para bañar, para los trastes y la ropa. Para la comida estoy comprando unos galones para cocinar cada semana. Esto viene siendo un costo extra para nuestro hogar.

No es justo que no se esté regulando el agua de nuestros hogares rurales porque la ciudad debe saber cómo están los residentes de la área. Deberian saber cómo está su agua, como sale el agua para el que vive aqui, y ofrecernos esa educación sobre este tema, para estar más informados y poder protegernos mejor.

Teniendo unos filtros para tratamiento y la capacitación para estarlos manteniendo como se debe, nos ayudará, y luego también como si uno ya tiene más de edad, más de años y no puede arrimar su agua. Es por esto que les pido de manera urgente continuar brindando recursos para que tengamos acceso a agua de emergencia, pruebas de pozos y tratamiento, hasta que nos conviertamos en una comunidad rural con agua segura.

Sinceramente,
Flora Calvillo

be, 11.7. They explained to me that nitrates can cause harm to the body, and well, this worries me because, now I don't know if it is because of these nitrates that I have been sick in the past. We use water for everything, it is essential for every home. We use it to bathe, for dishes and to wash our clothes. For cooking I am buying a few gallons per week. This is an extra cost for our home.

It is not fair that the water in our rural homes is not being regulated because the city should know how the residents of the area are doing. They should know how our water is, how the water comes out for those who live here, and offer us the necessary education on this subject, so that we may be more informed and to be able to protect ourselves better.

Having some filters for treatment and the training to maintain them properly will help us. This is also a great help for those that are elderly and struggle to go bring water home regularly. This is why I urgently ask you to continue providing resources so that we have access to emergency water, well testing and treatment, until we become a rural community with safe water.

Sincerely,
Flora Calvillo

Oregon Secretary of State, Audit Division
Advisory Project: Oregon Water Governance Highlighting Water Insecurity
Interview: Oregon Rural Action and Community Members
August 10 & 15, 2022

Testimony: Froilan Rodgriguez
Location: Boardman, Oregon

Original statement in Spanish

Mi nombre es Froilan Rodriguez, y he trabajado en agricultura en el condado de Morrow desde el año 1993. Ahora soy dueño de mi propio negocio manejando mi ganado. Actualmente somos 5 en

Translated to English

My name is Froilan Rodriguez, and I have worked in agriculture in Morrow County since 1993. I now own a small business handling my cattle. I have lived in Boardman for 16 years with my wife, and

mi hogar, tengo 3 hijas y mi esposa, ya llevamos 16 años viviendo en Boardman y precisamente en este domicilio. No estamos compartiendo el pozo, yo lo mande hacer y mide 128 pies de profundidad. Afortunadamente, nosotros somos unas de las familias en esta área que no tuvo resultados altos de los nitratos, fue un 3.85. Parece que hasta el momento, nuestro filtro funciona bien. Hoy comparto mi testimonio, con la esperanza de que esto nos ayude a obtener los recursos necesarios para garantizar que seamos una comunidad rural con agua segura.

Hace más o menos 7 años cuando puse el filtro en nuestra casa. Nosotros tenemos un sistema de filtración para toda la casa. Yo decidi poner un sistema de filtración por mi señora, y miraba que estaba sucia el agua y hasta iba a lavar a la lavanderia porque la lavadora que teniamos en las casa no limpiaba bien debido al agua. El filtro que tenemos me salio en $6500 en efectivo habia opcion de comprarlo en pagos, pero salia mas caro en $8000. Nos habian dicho que con este filtro, si se podia tomar el agua, y por los primeros dos años, si la consumimos, pero luego nosotros miramos que no estaba buena y no entendiamos porque. Cuando recién pusimos el filtro, la compañia donde lo compramos, pasaba regularmente cada 4-6 meses, ellos se comunicaban con nosotros para venir a cambiar el filtro. Eran más o menos $250 cada vez que venian a dar el servicio, pero recientemente no han venido en más de un año.

En Junio, uno de los vecinos vino a invitarme a una junta comunitaria sobre esta situación. Ahi fue donde supimos que teniamos que mandar hacer la prueba al agua. Estábamos asustados porque no sabiamos ni de que se trataba, empezamos a oir de los efectos que podia tener en la salud, y pues uno se preocupa por los niños porque a veces se les ocurre tomar agua de la manguera, o de la llave por no ir agarrar del galón. No sabemos a qué grado puede afectar a

3 daughters. We do not share a well with neighbors, I had it built and it's 128 feet deep. Fortunately, we are one of the families in this area that did not have high nitrate results, 3.85. It seems that so far, our filter works fine. Today I share my testimony, hoping that this will help us obtain the necessary resources to ensure that we are a safe rural water community.

About 7 years ago I installed a filtration system for our house. We have a whole house filtration system. I decided to install a filtration system because my wife insisted the water wasn't clean. She even went to the laundromat because the washing machine that we had at home did not clean well due to the water. The filter we have cost me $6,500 in cash. There was an option to buy it in payments, but it was more expensive for a total of $8,000. They had told us that with this filter, we could drink the water, and for the first two years, we consumed it. Then we realized that it was not good but we did not necessarily understand why. Back when we had first installed the filter, the company where we bought it came by regularly, every 4-6 months, they contacted us to come and change the filter. It was about $250 each time they came to service it, but recently they haven't come in over a year.

In June, one of the neighbors came to invite me to a community meeting about this situation. That's where we knew we had to have the water tested. We were scared because we didn't even know what it was about, we began to hear about the effects it could have on our health. We worried about the children because sometimes they happen to drink water from the hose, or from the tap because they don't want to go to the gallon. What is most concerning is that we do not know to what degree it can affect our health. I felt good when I received the results, honestly I expected worse with what I had heard from some neighbors.

la salud. Me senti bien cuando recibi los resultados, honestamente yo esperaba algo peor con lo que habia escuchado de algunos vecinos.

Al final del dia nosotros estamos en lo oscuro, si no fuera por ese vecino que andaba de puerta a puerta informando de la junta, tal vez no supiéramos lo que estaba pasando. No se escucha nada en los medios de comunicación en español. Solamente sabemos que no se debe tomar el agua pero no entendemos el porqué. Deberiamos tener acceso a esta información por nuestro bien estar, para proteger a nuestras familias, y para evitar problemas más graves en el futuro.

Les pido de manera urgente continuar brindando recursos para que tengamos acceso a agua de emergencia, pruebas de pozos y tratamiento, hasta que nos conviertamos en una comunidad rural con agua segura.

Sinceramente,
Froilan Rodriguez

At the end of the day we are in the dark, if it were not for that neighbor who went from door to door informing about the meeting, we might not know what was happening. Nothing is heard in the Spanish media. We only know that we shouldn't drink the water, but we do not understand why. We should have access to this information for our own good, to protect our families, and to prevent more serious problems in the future.

I urge you to continue providing resources so that we have access to emergency water, well testing and treatment, until we become a rural community with safe water.

Sincerely,
Froilan Rodriguez

Oregon Secretary of State, Audit Division
Advisory Project: Oregon Water Governance Highlighting Water Insecurity
Interview: Oregon Rural Action and Community Members
August 10 & 15, 2022

Testimony: James Ringel
Location: Boardman, Oregon

Original statement in Spanish

Mi nombre es James Ringel, estoy jubilado, pasé 28 años trabajando como mecánico. He vivido en mi dirección actual en Boardman, Oregón, durante los últimos 15 años. Cuando compré esta casa, los nitratos eran una preocupación, ha pasado más de una década y sigue siendo un problema. Hoy comparto mi testimonio, esperando que esto nos ayude a obtener los recursos necesarios para asegurar que seamos una comunidad rural con agua segura.

Translated to English

My name is James Ringel, I am retired, I spent 28 years working as a heavy duty railroad diesel mechanic. I have lived at my current address in Boardman, Oregon for the past 15 years. When I bought this home, the nitrates were a concern, it's been over a decade now and it continues to be a problem. Today I share my testimony, hoping that this will help us obtain the necessary resources to ensure that we are a safe rural water community.

Recientemente en las noticias, comencé a ver más y más articulos sobre los nitratos. El condado comenzó a probar los pozos para ver si teniamos algún problema. Lo siguiente que supe fue que mi vecina me hizo saber que tan grave podria ser esto para nuestra salud si estuviéramos bebiendo el agua, me ayudó a pensar en los momentos en los que realmente consumo el agua. Pensé que estaba bien porque generalmente bebo agua embotellada, pero cuando mis resultados fueron altos fue un 27.3, lo pensé más y consideré otros factores.

Yo crei que el agua que usaba para todo estaba bien. Compro agua embotellada regularmente para beber. Uso el agua de la llave para hacer cubitos de hielo de vez en cuando y uso el agua de la llave para cocinar, como para hacer espaguetis. Siempre pensé que estaba bien porque tengo un sistema de ósmosis, pero recientemente los resultados de las pruebas demostraron lo contrario. Resulta que mi sistema no funciona correctamente.

No me di cuenta de que mi agua estaba tan mala. Me han diagnosticado cáncer de piel y tengo muchos problemas estomacales. Mi médico me recomienda beber mucha agua. Bebo 10 botellas de agua al dia. Siempre me siento hinchado y no estoy bien, pero me siguen diciendo que beba agua. Sin embargo, como bebo tanta agua, de vez en cuando se me acaba. Asi que usé el agua de la llave cuando no tenia botellitas disponibles. Tengo problemas de espalda, asi que si alguien no puede traerme agua, pensé que el filtro Brita era suficiente, pero luego aprendi que no ayuda con los nitratos. Ahora me pregunto si es por eso que tengo tantos problemas con mi salud. Escuché que se están haciendo algunos esfuerzos adicionales para asegurar que los hispanos de nuestra comunidad sepan lo que está pasando, pero se necesita hacer más para la comunidad en general. Presto atención a las

Recently in the news, I started seeing more and more articles coming out about the nitrates. The county started testing the wells to see if we had a problem. Next thing I knew my neighbor was letting me know how serious this could be for our health if we were drinking the water, she helped me think about moments where I actually do consume the water. I thought I was fine because I usually drink bottled water, but when my results came back high, a 27.3, I thought about it more and considered other factors.

I used to believe that the water I used for everything was fine. I buy bottled water regularly for drinking purposes. I use the tap water to make ice cubes once in a while and I use tap water for cooking such as making spaghetti. I always thought it was fine since I have an osmosis system, but recently the test results proved otherwise. Turns out my system isn't functioning properly.

I didn't realize my water was so bad. I have been diagnosed with skin cancer and I struggle with a lot of stomach issues. My doctor recommends I drink a lot of water. I drink 10 bottles of water a day. I always feel bloated and not right, but I keep getting told to drink water. However, since I drink so much water, every now and then, I run out. So I just used the tap water when I was out. I have a bad back so if someone can't bring me water, I thought the Brita filter was sufficient but then I learned that it doesn't help with nitrates. Now I wonder if this is why I have so many problems with my health. I hear that there is some extra efforts being done to ensure the Hispanics in our community know what's going on, but more needs to be done for the community as a whole. I pay attention to the news, and I still don't fully understand what needs to be done.

I urge you to continue providing resources so that we have access to emergency water, well

noticias y todavia no entiendo completamente lo que hay que hacer.

Les pido de manera urgente continuar brindando recursos para que tengamos acceso a agua de emergencia, pruebas de pozos y tratamiento, hasta que nos conviertamos en una comunidad rural con agua segura.

Sincerameнte,
Jim Ringel

testing and treatment, until we become a rural community with safe water.

Sincerely,
Jim Ringel

Oregon Secretary of State, Audit Division
Advisory Project: Oregon Water Governance Highlighting Water Insecurity
Interview: Oregon Rural Action and Community Members
July 7, 2022

Testimony: Jose Zavala
Location: Boardman, Oregon

Original statement in Spanish

Mi nombre es Jose Zavala, y he trabajado en agricultura en el condado de Morrow por 20 años. He estado viviendo en Boardman, Oregón por los últimos 35 años. He vivido en el mismo domicilio aqui en Boardman por casi 10 años junto con mi esposa y mis tres hijas. Nosotros no estamos compartiendo un pozo de agua con otras familias debido a un problema que tuvimos. Espero que al compartir mi testimonio, ayude para que otras familias no tengan que continuar teniendo problemas con su agua, que viene siendo un costo que impacta nuestras vidas en relación a nuestra salud pero también económicamente.

Cuando yo compre esta casa, estaba compartiendo el pozo de agua con la con la vecina. Y en ese tiempo, el pozo se compartia con tres casas. Hubo un problema con la pompa y tuvimos que apagar el agua para arreglar ese problema. Duramos tres dias sin servicio de agua. Nosotros decidimos mandar hacer un pozo para nosotros, y en ese tiempo, pues nos salió como en unos $15,000. Durante este tiempo tuvimos

Translated to English

My name is Jose Zavala, and I have worked in agriculture here in Morrow County for 20 years. I have been living in Boardman, Oregon for the last 35 years. I have lived at the same address here in Boardman for almost 10 years along with my wife and three daughters. We are currently not sharing a well with other families due to a problem we had in the past. I hope that by sharing my testimony, it helps so that other families do not have to continue having problems with their well water, which has been a cost that impacts our lives in relation to our health, but also economically.

When I originally bought this house, I was sharing the well with neighbors. And at that time, the well was shared with three houses. There was a problem with the pump and we had to turn off the water to fix that problem. We lasted three days without water service. We decided to have a well dug for us separately, and at that time, it cost us about $15,000. During this time we had

que tomar agua del galón y no pude regar mi yarda tampoco.

Nosotros nunca habiamos escuchado sobre lo de los nitratos, nunca habiamos hecho prueba del agua hasta que los vecinos empezaron a hablar conmigo sobre este problema. Resulta que nosotros tenemos un alto nivel de nitratos, nos llegaron los resultados de un 27.5, casi tres veces más alto de lo que deberia de estar.

Se siente uno mal porque, estamos gastando en agua para tomar, seria mejor poder agarrar agua del pozo para tomar, entonces se ahorraria uno de ese costo. También estamos con la preocupación de que nos haya hecho daño en una forma. Nosotros no consumimos esta agua, ni para cocinar, pero de todo modos se siente uno en duda, que pueda estar ocurriendo esto en nuestra comunidad.

Estamos agradecidos por estar recibiendo el servicio de entrega de agua gratuita. Antes nosotros estábamos pagando por este servicio y ahora el condado nos está ayudando con esto mientras encuentran una solución.

Les pido de manera urgente continuar brindando recursos para que tengamos acceso a agua de emergencia, pruebas de pozos y tratamiento, hasta que nos conviertamos en una comunidad rural con agua segura.

Sinceramente,
Jose Zavala

to drink water from the gallon and I couldn't water my yard either.

We had never heard of nitrates, we had never had our water tested until the neighbors started talking to me about this problem. It turns out that we have a high level of nitrates, we received a result of 27.5, almost three times higher than it should be.

I feel bad because we are spending our money on water to drink, it would be better to be able to get water from the well to drink, then we would save on that cost. We are also concerned that the water could have harmed us in some way. We do not consume this water, not even for cooking, but in any case one feels in doubt that this may be happening in our community.

We are grateful to be receiving the free water delivery service. Before we were paying for this service, and now the county is helping us with this while they find a solution. I urge you to continue providing resources so that we have access to emergency water, well testing and treatment, until we become a rural community with safe water.

Sincerely,
Jose Zavala

Oregon Secretary of State, Audit Division
Advisory Project: Oregon Water Governance Highlighting Water Insecurity
Interview: Oregon Rural Action and Community Members
August 10 & 15, 2022

Testimony: Mike Brandt
Location: Boardman, Oregon

My name is Mike Brandt and I have served in the Marine Corps. My wife and I have been residents of Morrow County for the last 25 years. Since I purchased my home I have been aware of the contaminated water. In order to get my mortgage I had to install a water filtration system so that I had

access to clean water. I recently had my water tested and the nitrate levels are at 34.5, which are more than 3 times the contaminant level. Today I share my testimony, hoping that this will help us obtain the necessary resources to ensure that we are a safe rural water community.

About 25 years ago, I was forced to pay additionally for a water filtering system just so that I can get approved for my mortgage. It was a frustrating experience having to come up with an additional $1500 to get a system that would clean contaminated water that other people are responsible for causing. In addition to the system, it was around $100-200 to replace the filters each time they were serviced. They plugged up frequently so that the people that would come to service them eventually stopped coming and disappeared.

The water filter system was an expensive and frustrating experience that we decided to get a water delivery system with Desert Springs so that we had access to safe water. I still had to pay for the service, but at least I know the water is potable and safe to use. I also use the clean water that I buy for my animals since I don't know how nitrates impacts them.

From all the time I have been here, it is upsetting to see that not much has been done to find a long term solution. I hope that we as a community can have access to high quality water filters that will be effective with the high contaminated water. I hope that I am here to see the end of this water contamination crisis and we as a community can come together to find a long term solution.

I urge you to continue providing resources so that we have access to emergency water, well testing and treatment, until we become a rural community with safe water.

Sincerely,
Mike Brandt

Oregon Secretary of State, Audit Division
Advisory Project: Oregon Water Governance Highlighting Water Insecurity
Interview: Oregon Rural Action and Community Members
August 8, 2022

Testimony: Mayra Colin
Location: Boardman, Oregon

Original statement in Spanish

Mi nombre es Mayra Colin. Mis padres, Carlos y Maria Colin, junto con mis hermanos y primos, nos trajeron a vivir a Boardman en 1998. Desde entonces somos residentes de Boardman y vivimos en el mismo hogar al que llegamos en aquel entonces. Yo vivi fuera de Boardman muy poco tiempo mientras estudiaba pero después de terminar el colegio decidi regresar a vivir aqui porque aqui es donde quiero estar. Aqui me siento en casa. Ahorita en el hogar de mis

Translated to English

My name is Mayra Colin. My parents, Carlos and Maria Colin, along with my siblings and cousins, brought us to live in Boardman back in 1998. We have been Boardman residents ever since and live in the same home we came to back then. I lived outside of Boardman for a short time while I was in college but after I finished school I decided to move back here because this is where I want to be. Here I feel at home. Right now in my parents' home, in our home, we make up three

padres, en nuestro hogar, formamos tres generaciones; mis padres, mis tres hijos y yo. En este año, mis hijos cumplen 10, 9, y 7 años. Somos una familia unida y compartimos mucho tiempo juntos

Actualmente trabajo en Community Counseling Solutions aqui mismo en Boardman. Empecé a trabajar ahi en el 2011 y espero seguir ahi por muchos años más. Mis padres tienen un largo historial de trabajo en la agricultura y la cosecha en estas áreas desde que llegaron en los años 80.

Estos ultimas años no han sido fácil para los residentes de nuestra comunidad por muchas cuestiones incluyendo la pandemia, la controversia con la vacuna, pérdidas de trabajo, cierre de escuelas y negocios, la tormenta de aire del Mayo 2020, el humo por las lumbres forestales en Septiembre 2020, las tormentas de nieve en los últimos tres inviernos y varios cosas mas. Este año se podria decir que las preocupaciones habian aminorado hasta que nos llegó la noticia de la contaminación del agua en nuestro hogar y el hogar de muchas personas aqui presentes. Yo no puedo decir con certeza si padezco o si mi familia padece de algún sintoma relacionado con los efectos de los altos niveles de nitratos de agua. Pero lo que puedo decir con certeza es que sentimos miedo y preocupación al recibir la noticia.

Yo de niña escuchaba: no tomes esa agua por que no esta buena. Esas son palabras empecé a decirles a mis hijos. No tomes esa agua hijo, no esta buena. Pero ahora, tengo que reemplazar la palabra buena, con la palabra daño. Ahora tengo que decir, no tomes esa agua por que te hace daño. Tengo que decir, no tomes esa agua, está contaminada. Se pueden imaginar? El agua, el recurso principal, necesario para para poder existir y que deberiamos tener para nuestra supervivencia, ahora está contaminada por altos niveles de nitrato. El agua, que deberia ser limpia y pura, ahorita corre por la tuberia de nuestras

generations; my parents, my three children and myself. This year, my children turn 10, 9, and 7 years old. We are a united family and we spend a lot of time together

I currently work at Community Counseling Solutions right here at Boardman. I started working there in 2011 and I hope to continue there for many more years. My parents have a long history of working in agriculture and harvesting in these areas since they arrived in the 1980's.

These past few years have not been easy for the residents of our community due to many issues including the pandemic, the vaccine controversy, job losses, school and business closures, the May 2020 wind storm, smoke from wildfires in September 2020, the snow storms in the last three winters and many other things. This year it could be said that the concerns had subsided until we received the news of the contamination of the water in our home and the home of many people present here. I can't say for sure if I suffer or if my family suffers from any symptoms related to the effects of high levels of water nitrates. But what I can say with certainty is that we felt fear and concern when we received the news.

As a child I used to hear: don't drink that water because it's not good. Those are words I began to say to my children. Don't drink that water son, it's not good. But now, I have to replace the word good with the word harm. Now I have to say, don't drink that water because it hurts you. I have to say, don't drink that water, it's contaminated. Can you imagine? Water, the main resource necessary for us to exist and that we should have for our survival, is now contaminated by high levels of nitrate. The water, which should be clean and pure, now runs through the pipes of our contaminated houses. It comes out of the faucets in our homes, dirty, to the level that it risks our health. I fully

casas contaminada. Sale de las llaves de nuestros hogares, sucia, al nivel de corremos riesgos de salud. Entiendo perfectamente que existe un largo proceso desde que cae del cielo hasta que entra en nuestro organismo, pero que triste que por falta de atención de alguien o algo, ahora tenemos esta preocupación y sentimos miedo.

Mi familia, ya sea al igual o a diferencia de algunos de mis vecinos, hemos intentado limitar el consumo de esa agua. Mis padres y mis vecinos, han gastado mucho dinero en agua embotellada semanalmente, han gastado mucho dinero en garrafones de agua por años, y han instalado costosos filtros de agua que solo funcionaron unos cuantos años, y esto viene siendo la la razón que recibimos un resultado de 36.5. Todo esto ha salido demasiado caro y no creo justo ni sostenible tener que seguir haciéndolo por años y años más. Lo que necesitamos es agua segura en nuestros hogares y la necesitamos ahorita. Nuestros politicos necesitan ayudarnos a encontrar una solución a largo plazo, como crear un distrito de agua donde el agua pase por un sistema de filtración eficiente y seguro. El acceso al agua segura es importante para el bienestar de nuestra comunidad. Es importante para mis padres, para mis hijos, para mis vecinos, y todos los que estamos aqui presentes, porque todos formamos parte de esta comunidad de Boardman. Todos están contribuyendo a esta comunidad que va creciendo y es fundamental para el condado de Morrow County y el estado de Oregon.

Les pido de manera urgente continuar brindando recursos para que tengamos acceso a agua de emergencia, pruebas de pozos y tratamiento, hasta que nos conviertamos en una comunidad rural con agua segura.

Sinceramente,
Mayra Colin

understand that there is a long process from when it falls from the sky until it enters our body, but how sad that due to lack of attention from someone or something, now we have this concern and we feel fear.

My family, like my neighbors, has tried to limit the consumption of that water. My parents and neighbors have spent a lot of money on bottled water weekly, have spent a lot of money on water jugs for years, and have installed expensive water filters that only worked a few years, this being the reason our water test resulted in a 36.5. All this has been too expensive and I don't think it's fair or sustainable to have to continue doing it for years and years to come. What we need is safe water in our homes and we need it now. Our politicians need to help us find a long-term solution,

like creating a water district where the water goes through an efficient and safe filtration system. Access to safe water is important to the well-being of our community. It is important to my parents, to my children, to my neighbors, and to all of us here today, because we are all part of this Boardman community. Everyone is contributing to this growing community that is critical to Morrow County and the state of Oregon.

I urge you to continue to provide resources so that we have access to emergency water, well testing, and treatment, until we become a safe rural water community.

Sincerely,
Mayra Colin

Oregon Secretary of State, Audit Division
Advisory Project: Oregon Water Governance Highlighting Water Insecurity
Interview: Oregon Rural Action and Community Members
August 10, 2022

Testimony: Maria Elena Martinez
Location: Boardman, Oregon

Original statement in Spanish

Mi nombre es Maria Elena Martinez. He estado viviendo en Boardman durante los últimos 36 años. Soy madre de 6 hijos y vivo con mi esposo. Desafortunadamente, el año pasado tuve dos abortos espontáneos. Ahora, en retrospectiva, me pregunto si los nitratos en el agua me causaron este problema, porque antes yo bebia el agua e incluso cocinaba con el agua desde que empecé a vivir aqui. Nunca hubo nadie que me habia advertido del peligro que existia. Si lo hubiera sabido, nunca hubiera bebido esta agua ni la hubiera usado para cocinar y tal vez nunca hubiera sucedido lo que me pasó a mi, perder mis embarazos. Desconocia esta información. Tal vez si hubiera sabido la información, si hubiera tenido esta información antes, no lo hubiera hecho. Por eso estoy compartiendo mi testimonio, no quiero que esto le pase a otras personas. Necesitamos agua potable limpia y segura en nuestra comunidad, para nosotros, para nuestros niños. Debemos evitar que otras personas se enfermen o sufran enfermedades graves y tragedias como la mia, a causa del agua contaminada.

Hace poco me enteré de los nitratos en el agua porque recién este año comenzaron a analizar el agua de nuestros pozos. Fue entonces cuando descubrimos que nuestros resultados eran altos, un 26, y nos enteramos de los efectos que podria tener en nuestra salud. Empecé a pensar en mis sintomas cuando estaba embarazada, antes de los abortos espontáneos, tenia tantos dolores de cabeza. ¿Podria ser ésta la razón?

Hay una necesidad urgente de informar mejor a nuestra comunidad. Se necesita mucho para

Translated to English

My name is Maria Elena Martinez. I have been living in Boardman for the past 36 years. I am a mother of 6, and I live with my husband. Unfortunately, last year I had two miscarriages. Now, hindsight, I wonder if the nitrates in the water caused me to have this problem, because I used to drink the water and even cooked with the water since living here. No one had ever warned me about the danger that existed. Had I known, I would have not never drank this water or used it for cooking and perhaps what happened to me, losing my pregnancies would never have happened. I was unaware of this information. Maybe if I knew the information, if I had had this information before, I wouldn't have done it. That is why I am sharing my testimony, I don’t want this to happen to other people. We need clean, safe drinking water in our community, for us, for our children. We must prevent other people from getting sick or experiencing serious illness and tragedies due to the contaminated water.

I recently learned about the nitrates in the water because just this year they started testing the water in our wells. That’s when we discovered that our results came back high, a 26, and we learned about the effects it could have on our health. I started thinking about my symptoms back when I was pregnant, before the miscarriages, I had so many headaches. Could this be the reason?

There is an urgent need to better inform our community. A lot is needed to make sure this doesn’t happen to more families. Many of us, well

asegurarse de que esto no le suceda a más familias. Muchos de nosotros, bueno la mayoria aqui de mi comunidad, tenemos niños pequeños. Estos niños son vulnerables cuando salen a jugar, les da sed y deciden beber de la manguera, no saben lo que están bebiendo ni con qué tipo de agua están jugando. Se debe hacer algo para proteger a nuestra comunidad, para proteger a los niños.

Les pido de manera urgente continuar brindando recursos para que tengamos acceso a agua de emergencia, pruebas de pozos y tratamiento, hasta que nos conviertamos en una comunidad rural con agua segura.

Sinceramente,
Maria Elena Martinez

the majority here from my community, have small children. These children are vulnerable when they go outside to play, they get thirsty and decide to drink from the hose, they do not know what they are drinking or what type of water they are playing with. Something must be done to protect our community, to protect the children. I urge you to continue to provide resources so that we have access to emergency water, well testing, and treatment, until we become a safe rural water community.

Sincerely,
Maria Elena Martinez

Oregon Secretary of State, Audit Division
Advisory Project: Oregon Water Governance Highlighting Water Insecurity
Interview: Oregon Rural Action and Community Members
August 17, 2022

Testimony: Orlando Velazquez
Location: Hermiston, Oregon

Original statement in Spanish

Mi nombre es Orlando Velazquez tengo 17 años y vivo en Hermiston Oregon, soy estudiante y trabajo en el área de la agricultura y también de vez en cuando limpio yardas, mi mamá también trabaja en la agricultura de Boardman. Como miembro de esta comunidad, comparto mis opiniones y observaciones con la esperanza que ayude a la comunidad que está directamente impactada.

Yo trabajaba en Boardman en el rancho y en algunos momentos vi que el agua salia como con tierra o cuando lavamanos los carros, Yo creo que lo mejor seria que se diera el agua potable a las familias que viven fuera de la ciudad que manden el agua del centro y que esto llegue a las orillas de la ciudad que haya un sistema que

Translated to English

My name is Orlando Velazquez. I am 17 years old and I live in Hermiston Oregon, I am a student and I work in the agriculture field, and also from time to time I do yard work. My mom also works in Boardman agriculture. As a member of this community, I share my thoughts and observations with hopes that it can help the community that is directly impacted.

I used to work in Boardman on a ranch, and at times I saw that the water came out with dirt or some sediment when we would wash the cars. I think it's necessary to ensure that people with wells have access to safe drinking water. There are so many families who live outside the city limits and we need to ensure that safe drinking water is being provided to them. Whether that

ayude a que el agua sea agua limpia. que se utilice la tecnologia ya que estamos en pleno 2022 para poder usar en el tratamiento del agua por ejemplo filtros que sean efectivos para el consumo humano.

Pienso que seria importante hacer un buen uso de las redes sociales para compartir información y que esto genere un impacto en la comunidad porque ahorita pienso que ya es poca la gente que le gusta leer y si tu ves algo interesante o'importante en el teléfono, es fácil de revisarlo y llenarse de información y compartirlo. Pienso que también es necesario tener la información disponible en español para nuestra comunidad hispana.

Es necesario estar mandando cartas en español o haciendo llamadas en su idioma y también como cuando van a vender una casa que se comparta la información sobre los nitratos. Nuestra gente merece que uno les hable principalmente con honestidad en la actualidad.

Les pido de manera urgente continuar brindando recursos para que tengamos acceso a agua de emergencia, pruebas de pozos y tratamiento, hasta que nos conviertamos en una comunidad rural con agua segura.

Sinceramente,
Orlando Velazquez

be a treatment system that helps make the water clean or by providing filters that are effective for human consumption.

I think it would be important to make good use of social media networks to share information regarding the nitrates issue in order to generate an impact on the community because right now I think there are few people who like to read and if you see something interesting or important on the phone, it is easy to review it, get informed, and share it. I think it is also necessary to have the information available in Spanish for our Hispanic community.

It is necessary to be sending letters in Spanish or making calls in their language and also, like when they are going to sell a house, to share information about nitrates. Our people deserve to be spoken to with honesty on what is going on in their community.

I urge you to continue providing resources so that we have access to emergency water, well testing and treatment, until we become a rural community with safe water.

Sincerely,
Orlando Velazquez

Oregon Secretary of State, Audit Division
Advisory Project: Oregon Water Governance Highlighting Water Insecurity
Interview: Oregon Rural Action and Community Members
July 8, 2022

Testimony: Mayra Colin
Location: Boardman, Oregon

Original statement in Spanish

Mi nombre es Paula Lopez, vivo en Boardman y voy a cumplir 26 años viviendo aqui, yo no trabajo pero soy ama de casa, asi es que mi trabajo es un trabajo de 24 horas siete dias a la

Translated to English

My name is Paula Lopez, I live in Boardman and I'm about to complete 26 years old living here. I don't work but I'm a stay at home mom, so my job is a 24/7 job with no pay. I live with my

semana, y sin pago. Vivo con mi esposo y mis dos hijas. Aparte de mantener mi propio hogar, también le apoyó mucho a mi suegra, y ella es la razón por la que comparto este testimonio con ustedes. Ella es grande de edad, y necesita nuestro apoyo para darle mantenimiento a la casa de ella, ella tiene un pozo de agua y recientemente recibimos noticia que su agua tiene altos niveles de nitratos. Le hicieron la prueba y el resultado fue un 40.1, eso es cuatro veces más de lo que deberia estar basado en la información que recibimos en la junta comunitaria.

En la casa de mi suegra, se utiliza el agua en varias formas. La usamos para lavar los trastes, la ropa, para regar las plantas, la yarda, y para darle agua a los animales como las gallinas y los perros. Sabemos que el agua del pozo no se debe de tomar, porque puede haber bacteria y otras cosas que hacen daño como los nitratos, por el cual, tratamos de tomar precauciones, por ejemplo le pongo cloro al jabón para lavar los trastes y cuando se baña ella tiene que desinfectar la tina y con cloro con la intención de ojala minimizar el riesgo con contiene el agua.

Mi suegra tiene siete años viviendo en esa casa con el pozo y hemos comprado el agua, antes teniamos que estar comprando el agua directo de la tienda y el galón de cinco galones cuesta siete dólares. En este momento mi suegra tiene como cinco meses sin trabajo y esa entrada de dinero no llega y pues hace que los costos básicos como el lonche y el agua sean más dificiles de obtener. Son alimentos necesarios pero cuando compra uno por ejemplo tres galones o cuatro por semana que es lo que se está gastando ya es un coste de 28 dólares, el agua es esencial, todo el tiempo se está utilizando.

Yo pienso que estaria un poco más seguro con un filtro, porque me imagino que se minimizaran las bacterias en el agua. En realidad es necesario

husband and my two daughters. Aside from supporting my own home, I am also providing a lot of support for my mother-in-law, and she is the reason I am sharing this testimony with you. She is elderly, and she needs our support to maintain her house. She has a water well and recently we received news that her water has high levels of nitrates. Her well was tested and the result was a 40.1, that's four times what it should be based on the information we received at the community meeting.

In my mother-in-law's house, water is used in various ways. We use it to wash the dishes, the clothes, to water the plants, the yard, and to give water to animals like chickens and dogs. We know that the water from the well should not be consumed, because there may be bacteria and other things that cause harm such as nitrates, for which we try to take precautions, for example I put chlorine in the soap to wash the dishes and when bathing, my mother in law has to disinfect the tub with chlorine as well with the intention of hopefully minimizing the risk that the water contains.

My mother-in-law has been living in that house with the well for seven years and we have had to buy water for consumption, before we had to buy water directly from the store and a five-gallon jug would cost us seven dollars. Right now, my mother-in-law has been out of work for about five months and that income does not arrive and thus makes basic costs such as food and water more difficult to obtain. These are basic necessities, but when you buy for example three or four of those jugs per week, it’s a cost of 28 dollars, which adds up for the entire month. Water is essential, it is being used all the time.

I think it would be a little safer with a filter, because I imagine that the bacteria in the water would be minimized. In fact, it is necessary for all those people who live in that rural area for the

para todas esas personas que viven en esa área rural por la salud y el bienestar de las personas que viven y en esa área para los niños y los mayores.

Por eso, les pido de manera urgente continuar brindando recursos para que tengamos acceso a agua de emergencia, pruebas de pozos y tratamiento, hasta que nos conviertamos en una comunidad rural con agua segura.

Sinceramente,
Paula Lopez

health and well-being of the people who live in that area and for the children and the elderly.

Therefore, I urgently ask you to continue providing resources so that we have access to emergency water, well testing and treatment, until we become a rural community with safe water.

Sincerely,
Paula Lopez

Oregon Secretary of State, Audit Division
Advisory Project: Oregon Water Governance Highlighting Water Insecurity
Interview: Oregon Rural Action and Community Members
August 16, 2022

Testimony: Reyes Calvillo
Location: Boardman, Oregon

Original statement in Spanish

Mi nombre es Reyes Calvillo yo vivo con mi esposa y mi hija en la comunidad de Boardman, por el momento trabajo en la construcción. Hemos vivido aqui desde hace diez años, somos dueños de la casa y esta casa tiene un pozo el cual es compartido con otras dos familias.

Nosotros siempre supimos que el agua estaba mal, desde el tiempo que hemos vivido aqui y nosotros hemos tomado precauciones evitando consumir el agua del pozo, también hemos notado que el agua mancha mucho por ejemplo los carros los deja con mancha blancas y hace corrosión en las llaves de los baños y el fregadero, también en el boiler ya que este se llena como de roca por los minerales. El cambiarlos asi como eso de tener que comprar agua para cocinar y para tomar genera un impacto económico en la familia. He podido hablar con mis dos hermanos, ellos también tienen un pozo en sus casas y los dos me dijeron que el agua estaba mala los resultados que yo

Translated to English

My name is Reyes Calvillo. I live with my wife and daughter in the Boardman community. At the moment I work in construction. We have lived here for ten years, we own the house and this house has a well which is shared with two other families.

We always knew that the water was bad, since the time we have lived here and we have taken precautions to avoid consuming the water from the well, we have also noticed that the water stains a lot, for example, it leaves cars with white spots and causes corrosion in the surfaces. The faucets in the bathrooms and the sink, and even the boiler feels like a rock due to the mineral build up on these surfaces. Changing these faucets as well as having to buy water for cooking and drinking generates an economic impact on the family. I have been able to talk to my two brothers, they also have a well in their houses and they both told me that the water was bad, the results I had were 27.5. That is very

tuve fueron de 27.5 eso es muy elevado ya que me explicaron que el máximo nivel de nitratos es de 10 y los de ellos se asemejan a mis resultados. Hace como 10 años uno de mis hermanos hizo su pozo de agua, no tengo más detalles de cómo o en donde y quien hizo ese análisis pero en el análisis salió que el agua si era apta para el consumo humano.

Nosotros en todos estos años no habiamos instalado ningún filtro en la casa, pero hasta hace algunas semanas cuando se declaró estado de emergencia aqui en la comunidad fue que nos empezaron a dar el agua gratuita y después hicieron entrega de algunos filtros y a mi familia y a mi nos tocó recibir uno, fue cuando yo lo instalé. Algo que me gustaria saber es si mi filtro está funcionando y cómo hacer una evaluación de si el agua se puede consumir o no y si esta es de buena calidad. Comentó que me siento agradecido por toda la atención, información y ayuda de los que me han contactado en este caso el Departamento de Salud y el equipo de ORA ya que todo ha sido en el lenguaje que yo entiendo y que es mi Idioma el Español y me gustaria que eso continuara. Finalizó diciendo que mi familia y yo hemos firmado la petición ya que nosotros apoyamos a que nuestra comunidad sea una comunidad que tenga agua limpia y segura.

Sinceramente,
Reyes Calvillo

high since they explained to me that the maximum level of nitrates is 10 and theirs are similar to my results. About 10 years ago one of my brothers dug his water well. I don't have more details about how or where and who did that analysis, but the analysis found that the water was fit for human consumption.

In all these years we had not installed any filters in the house, but until a few weeks ago when a state of emergency was declared here in the community, they began to give us free water and then they delivered some filters, that's when I installed them. One thing I would like to know is if my filter is working and how to make an assessment of whether or not the water is drinkable and of good quality. I feel grateful for all the attention, information and help of those who have contacted me in this case, the Department of Health and the ORA team, since everything has been in the language that I understand and that Spanish is my language and I would like that to continue. My family and support our community being a community that has clean and safe water.

Sincerely,
Reyes Calvillo

Oregon Secretary of State, Audit Division
Advisory Project: Oregon Water Governance Highlighting Water Insecurity
Interview: Oregon Rural Action and Community Members
August 17, 2022

Testimony: Ricardo Garcia Lopez
Location: Boardman, Oregon

Original statement in Spanish **Translated to English**

Mi nombre es Ricardo Garcia Lopez, vivo en Boardman desde el año pasado, y somos 7 personas rentando la propiedad, y trabajamos como choferes en el campo. Mi intención de compartir mi testimonio es de que se pueda ver una solución a este problema con el agua.

Yo me enteré que habia un problema cuando vinieron unos miembros de la comunidad a compartir la información sobre los nitratos a nuestra casa. Nos hicieron la prueba del agua, y los resultados eran que si estaban los nitratos más altos del nivel que deben de estar, nuestro resultado fue un 11.3.

El propietario ha estado pendiente de que nosotros tengamos la información sobre el agua. el departamento de salud ha estado en comunicación con nosotros y también nos dijo de la ayuda con proporcionar el agua de galón gratuita y asistimos a la junta comunitaria y hemos estado en contacto con ORA team. Esto ha sido muy bueno, porque si no fuera por estos individuales, tal vez no supiera que habia un problema.

Cómo nomas tengo un año viviendo aqui, he aprendido mucho de los vecinos que han tenido que lidiar con este problema de los pozos con mucho más tiempo. Es una batalla no poder usar el agua en formas que normalmente estoy acostumbrado a usarlo. Y el gasto que se hace cuando pagamos por los galones más las botellas de agua que se compran para ir al trabajo, es dificil.

Por esto les pido de manera urgente continuar brindando recursos para que tengamos acceso a agua de emergencia, pruebas de pozos y tratamiento, hasta que nos convirtamos en una comunidad rural con agua segura.

Sinceramente,
Ricardo Garcia Lopez

My name is Ricardo Garcia Lopez, I have lived in Boardman since last year, and there are 7 people renting the property where I currently reside. We all work as drivers in the fields. My intention with sharing my testimony is that hopefully a solution can be offered to resolve this problem within our community.

I found out there was a problem when some community members came to share information about nitrates at our house. They tested our water, and the results showed that the nitrate levels were higher than they should be given our result was an 11.3.

The owner has been providing us with the information we need regarding the water. The health department has also been in communication with us and also told us of the resources that are available to us, such as providing the free gallon water. We also attended the community meeting and have been in contact with the ORA team. This has been very good, because if it wasn't for these individuals, I might not have known there was a problem.

As I have only lived here for a year, I have learned a lot from the neighbors who have had to deal with this problem of the wells for much longer. It's been challenging, not being able to use water in ways I'm normally used to using it. And the extra expense when we pay for the gallons or cases of the bottled water to take to work, makes things difficult.

This is why I urgently ask you to continue providing resources so that we have access to emergency water, well testing and treatment, until we become a rural community with safe water.

Sincerely,
Ricardo Garcia Lopez

Oregon Secretary of State, Audit Division
Advisory Project: Oregon Water Governance Highlighting Water Insecurity
Interview: Oregon Rural Action and Community Members
August 10 & 15, 2022

Testimony: Selene Andrade
Location: Boardman, Oregon

My name is Selene Andrade, and I finished school recently and started working as a nurse. I have lived in Morrow Country since 2011. My family and I lived in Boardman for 6 years before moving to Irrigon. We have lived in Irrigon for the last 5 years. I have lived here with my parents and two other siblings. We have shared a well with our neighbors since we moved here. There was already a filter installed but I am sure how it works or if it even works. Today I share my testimony, hoping that this will help us receive the resources to make sure that we are a safe water community.

When we decided to move to Irrigon we were not informed of everything that it meant to own a well, the only thing we knew was that we were sharing one and that there was a separate bill with the electricity company for that. We never looked into the water quality or checked to see the effectiveness of the filter system that was already here. The neighbors just said that the water sucked and there was not much we could do. Occasionally we would use it to cook or drink out of it, but for the most part we always bought water bottles from the store.

In May, some members from Oregon Rural Action came by to see if they can get a water sample to test it. We gave them the water sample and within a couple weeks they called my dad and let him know that the nitrate levels came back normal (0.25), which was a good thing. At the end of the day, there is still a lot of skepticism about how clean the water is from our well. They might have let us know that there are no nitrates but it doesn't feel safe to drink out of that water.

I urge you to continue providing resources so that we have access to emergency water, well testing and treatment, until we become a rural community with safe water.

Sincerely,
Selene Andrade

Oregon Secretary of State, Audit Division
Advisory Project: Oregon Water Governance Highlighting Water Insecurity
Interview: Oregon Rural Action and Community Members
August 17, 2022

Testimony: Salvador Pacheco
Location: Boardman, Oregon

Original statement in Spanish

Mi nombre es Salvador Pacheco tengo 73 años, yo tengo mucho tiempo viviendo en esta área, ya ni me acuerdo cuánto tiempo ha sido, fuimos de

Translated to English

My name is Salvador Pacheco, I'm 73 years old, I've been living in this area for a long time, I don't even remember how long it's been, we were

los primeros que compramos aqui en esta área y ya hace mucho tiempo y por eso se me olvido. Yo soy dueño de mi casa.

Me di cuenta que habia un problema con el agua, cuando cambiaba los filtros del calentador de agua. Tenia tres filtros y seguido tenia que cambiar la resistencia, pero cuando cambiaba los filtros, estaban llenos de sarro. Seguido teniamos que estar reemplazando estos filtros.

Antes si tomábamos el agua del pozo, porque no sabiamos que nos podia hacer daño. Pero ya que notamos que tenia sarro, y manchaba las plantas, mejor empezamos a comprar agua embotellada para consumir. Solamente usaba agua de la llave para el baño, para lavar los trastes, y también para regar mis plantas.

Recientemente nos hicieron una prueba del agua y nos dieron el resultado de 32.6, aprendi que esto es más alto de lo que deberia estar, tres veces más alto que el nivel apropiado. Fui a la junta comunitaria porque un vecino me invitó, aunque no oigo bien, y ahi fue donde me enteré que iban a estar regalando agua.

Me interesa aprender que se puede hacer para arreglar esta situación, tal vez haciendo los pozos con más profundidad para que tengamos acceso a agua más buena. Y también pienso que estaria bueno informar bien a la gente, para que no se enfermen como yo, no sé si es por el agua que he sufrido de una grave infección de los riñones, tuve que ir al hospital de Seattle, y me limpiaron la sangre para quitarme la infeccion, y ahora tengo muchas complicaciones de la salud. A veces me desanimo porque yo he batallado mucho con mi salud, pero tenemos que seguir adelante. Por eso me gustaria tener un pozo más profundo aqui, quizás ya no viva, pero que esté el agua buena para el bien de la comunidad.

Les pido de manera urgente continuar brindando recursos para que tengamos acceso a agua de emergencia, pruebas de pozos y tratamiento,

among the first to buy property here in this area and it's been a long time and that's how come I forgot how long it’s been. I am the owner of my house.

I found out there was a problem with the water when I was changing the filters on the water heater. It had three filters and I often had to change these filters. When I changed the filters they were full of scale.

Back then, we did drink the water from the well, because we didn't know that it could harm us. But since we noticed that it had scale or build up, and it was staining the plants, we thought we better start buying bottled water to consume. I only used tap water for the bathroom, to wash the dishes, and also to water my plants.

We recently had our water tested and got a result of 32.6. I learned that this is higher than it should be, three times higher than the appropriate level. I went to the community meeting because a neighbor invited me, even though I can't hear well, and that's when I found out that they were going to be giving away emergency water.

I am interested in learning what can be done to fix this situation, perhaps making the wells deeper so that we have access to better water. And I also think it would be good to inform people better, so that they don't get sick like me, I don't know if it's because of the water that I suffered from a serious kidney infection, I had to go to the hospital in Seattle, and they cleaned my blood to remove the infection, and now I have many health complications. Sometimes I get discouraged because I have struggled a lot with my health, but we must find the will to carry on. That's why I would like to have a deeper well here, maybe I won’t be living anymore, but I hope that there is good water for the good of the community by then.

hasta que nos conviertamos en una comunidad rural con agua segura.

Sinceramente,
Salvador Pacheco

I urge you to continue providing resources so that we have access to emergency water, well testing and treatment, until we become a rural community with safe water.

Sincerely,
Salvador Pacheco

Appendix D: Written Statement Regarding Community Water Security from Oregon Rural Action

Oregon Secretary of State, Audit Division
Advisory Project on Oregon Water Governance/Water Insecurity
Oregon Rural Action and Community Members
Ensuring Rural Water is Safe: People & Nitrate-Contaminated Water in the Lower Umatilla Basin
Follow-up: September 23, 2022

Thank you for the opportunity to provide an update to follow up on our August 2022 interviews.

Oregon Rural Action and directly impacted community members continue to be concerned about the immediate and long-term health risks and need for safe drinking water, and the lack of urgency and any specific state action to date to ensure safe drinking water for all residents in the Lower Umatilla Basin (LUB).

Since August:

- Based on continued outreach and conversations with community members, more people are learning for the first time that their drinking water wells are contaminated and they should not drink, cook or boil the water. Overall, people are very thankful for the information and Morrow County's emergency response including the current water distribution service and the initial installation of filtration systems for some households. However, people wonder how long the free water will be available and for those who have received a filtration system, some people are concerned about whether they can trust that the systems are working and the water from their tap is safe. In addition, people are concerned that the filtration systems (reported to be 2 gallons) do not provide enough water sufficient for a family for drinking and cooking. Filter installation of county/local business-purchased systems has been on hold while waiting for the state to identify the appropriate filtration systems.
- As of September 15, 2022, the Morrow County response includes $500,000 for testing, water, and filters; a total of 485 households/wells tested; more than 200 tested above 10 mg/L; 162 households are receiving water delivery through the delivery service; 20 filtration systems that have been installed with the help of the county are reducing nitrates in the water to below 10 mg/L. Not all households whose wells have tested above 10 mg/L have received a filtration system. In addition, not all households with domestic wells in the LUB have been identified and tested.
- Oregon Rural Action has participated in regular virtual meetings of the state's 'Technical Working Group' led by the Governor's Regional Solutions Coordinator. Participants include staff or related state agencies, counties, cities, and a business coalition. However at this point, little has been accomplished. There continues to be a significant disconnect between the state and county/local entities concerning basic communication and understanding of the needs let alone developing a coordinated response to meet the immediate need for water, testing, filtration, and information.

- As of September 2022, no elected or state agency decision maker other than Morrow County Commissioner Jim Doherty has reached out to listen to the needs of directly impacted community members. This includes the staff of the Oregon Health Authority, Oregon Department of Environmental Quality, and Oregon Department of Agriculture. On September 15, 2022, 100 community members in Morrow County held a meeting and invited federal, state, and county elected leaders and state administrative officials to hear their concerns and commit to ensuring safe drinking water. People were disappointed that neither the Governor's staff nor state agency staff was available to attend nor did they offer a statement. Only one state legislator attended virtually. Attached are related media articles and photos.
- A total of 498 people who live in the LUB have signed a petition calling for "emergency water, well testing, and water treatment until we can become a Safe Rural Water Community."

The lack of state action is of great concern.

30 Years: As we discussed, the state has known for 30 years that groundwater, the primary source of drinking water for the region, has high concentrations of nitrates that can cause harm to human health. Multiple state agencies have failed to meet their regulatory authority to protect the groundwater and ensure safe drinking water in the LUB; the Lower Umatilla Ground Water Management Committee has been unable to meet the state-required goal to reduce the nitrates back to below 7 mg/L. In addition, the education and information efforts of state agencies, including OHA's Well Safety Program, and education and outreach of the LUBGWMA Committee have failed to effectively inform residents with domestic wells and the public of the risks.

Almost 3 Years: The state of Oregon has been on notice and in conversation with the EPA specifically regarding the public health risk from nitrate exposure in the LUBGWMA. (See the January 2020 EPA Petition for Emergency Action Pursuant to Safe Drinking water Act Section 1431 to Address Nitrate in LUBGMWA in North Central Oregon.) It took two years for the state to develop a multi-agency workplan. In December 2021, the state submitted a workplan to the EPA, entitled "State of Oregon Workplan: Protection Public Health from Nitrate Exposure in the Lower Umatilla Basin Ground Water Management Area." During the development of this plan, OHA informed the EPA that the state's primary program to inform domestic well owners had lost funding. The Domestic Well Safety Program "will go dormant until we secure further funding." (See September 30, 2020, OHA letter to EPA).

The December 2021 OHA, DEQ, and ODA workplan states that "Oregon's goal is to eliminate LUBGWMA domestic well water consumer exposure to high nitrates, which under the federal Safe Drinking Water Act is defined as a level above 10 mg/l. While efforts are underway to reduce the introduction of nitrates into the groundwater, additional efforts are needed to protect public health from exposure to elevated nitrates in domestic well tap water. This can be accomplished through enhanced outreach and education, increased domestic well sampling and, where necessary, point of use or whole house domestic water treatment or substitution with bottled/trucked water. OHA has identified four elements of a workplan to accomplish this goal." (State of Oregon Workplan, page 3) The state workplan components include:

- Conduct outreach and education regarding nitrate contamination;
- Perform a detailed hazard assessment;
- Offer free drinking water testing;

- Provide alternative water where necessary.

As of this spring when Morrow County began to test domestic wells, this workplan had yet to be implemented.

July 2022: Following Morrow County's declaration of a water emergency in June 2022, the EPA sent a letter dated July 29, 2022, to the Oregon Health Authority, Oregon Department of Environmental Quality, and Oregon Department of Agriculture. The letter noted that while the EPA "supports the general framework of Oregon's plan to mitigate health risks from nitrate-contaminated drinking water," outlined in the December 2021 workplan, the EPA raised concerns about the "lack of sufficient detail" in the state plan. The EPA then "identified criteria we believe critical for an effective drinking water response action in the LUB." (July 29, 2022, EPA letter to OHA, DEQ, and ODA, pages 1-2)

"The EPA considers that an adequate response plan to address the immediate health risks in the LUB must include the following minimum components:

- Coordination - An effective response plan includes a communication plan that identifies how information and responsibilities will be shared among the Governor's Office, state agencies, Umatilla and Morrow Counties and any private businesses or local utilities…so that each entity's efforts serve a singular and coordinated response.
- Identification of Impacted Residences - a hazard assessment, in part, should identify each resident that obtains drinking water from a private well in the LUBGWMA.
- Education and Outreach - Public education and outreach should be conducted in a form and manner reasonably calculated to reach all impacted LUB residents…
- Drinking Water Testing - An effective response plan provides laboratory analysis of a drinking water sample from the residence of any private well user in the LUB that requests testing, unless a nitrate test strip demonstrates that the nitrate concentration of the well is below 5 mg/L. Testing should be provided at no cost to LUB residents.
- Provision of Alternative Water - Alternative drinking water should be offered to each resident where the drinking water sample exceeds the federal maximum contaminant level (MCL) of 10 mg/L based on laboratory analysis. Alternative water should be provided as needed for drinking, cooking maintaining oral hygiene, and dishwashing at no cost to residents and in a manner that minimizes the burden on the impacted resident to obtain safe drinking water. This can include reverse osmosis filter systems and maintenance, water delivery, or connecting to a public water system. To the extent certain LUB residences will be connected to a public water system, they should receive alternative water until construction is completed. Residences provided RO treatment units should be offered regular maintenance at no cost to the resident. The alternate water supply and any necessary maintenance shall be made available to the impacted resident until sampling shows that nitrate concentrations in their private well no longer exceed the MCL.
- Public Records - An effective response plan maintains and regularly publishes records such that LUB residents and the general public can better understand the scope and severity of nitration contamination in the LUB and measure Oregon's progress in implementing a response plan. Information important for public review includes (a) the number and general location of private drinking water wells in the LLUBGWMA; (b) quantitative data regarding Oregon's public

outreach efforts and the responses received, including the number of residents that responded to public notices and the number of residences that received and rescinded to personal communications; (c) the number of residents that requested and were provided drinking water testing and the results; (d) the number of residences that were offered and accepted alternative drinking water, specifying the method of water delivery; (e) quantitative data regarding efforts to regularly maintain RO treatment units; and (f) groundwater monitoring results from the LUBGWMA Well Network and synoptic events, as they occur." (July 29, 2022, EPA letter to OHA, DEQ, and ODA, page 3)

September 23, 2022, Oregon Emergency Board:

We are thankful that OHA submitted a request for $882,000 approved by the Oregon Emergency Board on Friday, September 23, 2022, "to support immediate public health work addressing water quality issues in

Morrow and Umatilla counties." We are also thankful for OHA's response to State Senator Hansell's question about flexibility to meet local needs.

However, this amount does not begin to meet the immediate health risks, let alone implement the state's workplan with the required minimum components as outlined by the EPA for an adequate response. In addition, the dollars secured simply replace funding lost by the state's Domestic Well Safety Program which to date has been an inadequate outreach and education effort. And "vouchers" for testing and filtration systems are not a plan. Offering vouchers does not take into account the experience of the past 6 months about what is required for successful outreach and education effort to ensure people have access to safe drinking water - nor the minimum components of a successful plan articulated by the EPA.

And yet we have a successful state/local public health partnership model to base this work on. As noted in our August interview, the Oregon Health Authority's partnership over the past 2 years with county public health and community-based organizations successfully increased COVID-19 Latinx vaccination rates. Oregon Rural Action served as a key community-based organization in Morrow and Umatilla Counties. However, the success of this model is predicated on state and community-based organizations utilizing their respective resources and expertise: OHA provided adequate financial and technical support; community-based organizations utilized their community relationships and knowledge including language and culture. We request that the OHA department leading the effort to protect public health from nitrite exposure in the Lower Umatilla Basin Ground Water Management Area utilize this effective model to meet the immediate need for safe drinking water in the Lower Umatilla Basin.

In addition, while initial discussions with OHA this spring indicated a need, no dollars are available at this point for a needed health assessment.

Equity and Environmental Justice

Finally, as has been discussed, a majority of the community members directly impacted in Morrow County are Hispanic and low-income; the demographics of Morrow and Umatilla Counties are more ethnically diverse with a higher representation of Hispanic persons and a higher poverty rate as

compared to the state; a majority of people work in the fields and food processing plants of the region's economic engine, industrial agriculture - a primary source of the nitrate pollution.

As has been discussed in our August interviews, an effective response plan centers on the needs and utilizes the expertise of the people most directly impacted. Doing so also ensures that state agency commitments to the principles of equity and environmental justice are more than paper statements. (See Oregon Health Authority's "Equity Advancement Plan 2021-2023," "Public Health Modernization, Environmental Public Health," and the Oregon Department of Environmental Quality's 1997 statement, "Environmental Justice Policy.")

The need for safe drinking water in the LUB is immediate and long-term. On behalf of community members, thank you for your time and assistance.

Appendix E: 2017 Integrated Water Resources Strategy Recommended Actions

Limited Water Supplies & Systems, Water Quality & Quantity Information, and Water Management Institutions

1.A Conduct Additional Groundwater Investigations
1.B Improve Water Resources Data Collection and Monitoring
1.C Coordinate Inter-Agency Data Collection, Processing, and Use in Decision-Making

Out-of-Stream Needs / Demands

2.A Regularly Update Long-Term Water Demand Forecasts
2.B Improve Water-Use Measurement and Reporting
2.C Determine Unadjudicated Water Right Claims
2.D Authorize the Update of Water Right Records with Contact Information
2.E Regularly Update Oregon's Water-Related Permitting Guide

Instream Needs / Demands

3.A Determine Flows Needed (Quality and Quantity) to Support Instream Needs
3.B Determine Needs of Groundwater-Dependent Ecosystems

Water and Energy

4.A Analyze the Effects on Water from Energy Development Projects and Policies
4.B Take Advantage of Existing Infrastructure to Develop Non-Traditional Hydroelectric Power
4.C Promote Strategies That Increase/Integrate Energy and Water Savings

Climate Change

5.A Support Continued Basin-Scale Climate Change Research Efforts
5.B Assist with Climate Change Adaptation and Resiliency Strategies

Extreme Events

5.5A Plan and Prepare for Drought Resiliency
5.5B Plan and Prepare for Flood Events
5.5C Plan and Prepare for a Cascadia Subduction Earthquake Event

Water and Land Use

6.A Improve Integration of Water Information into Land Use Planning (& Vice-Versa)
6.B Improve State Agency Coordination
6.C Encourage Low Impact Development Practices and Green Infrastructure

Water-Related Infrastructure

7.A Develop and Upgrade Water and Wastewater Infrastructure
7.B Encourage Regional (Sub-Basin) Approaches to Water and Wastewater Systems
7.C Ensure Public Safety / Dam Safety

Education and Outreach

8.A Support Implementation of Oregon's K-12 Environmental Literacy Plan
8.B Provide Education and Training for Oregon's Next Generation of Water Experts
8.C Promote Community Education and Training Opportunities
8.D Identify Ongoing Water-Related Research Needs

Place-Based Efforts

9.A Continue to Undertake Place-Based Integrated Water Resources Planning
9.B Coordinate Implementation of Existing Natural Resource Plans
9.C Partner with Federal Agencies, Tribes, and Neighboring States in Long-Term Water Resources Management

Water Management and Development

10.A Improve Water-Use Efficiency and Water Conservation
10.B Improve Access to Built Storage

10.C Encourage Additional Water Reuse Projects
10.D Reach Environmental Outcomes with Non-Regulatory Alternatives
10.E Continue the Water Resources Development Program
10.F Provide an Adequate Presence in the Field
10.G Strengthen Oregon's Water Quantity and Water Quality Permitting Programs

Healthy Ecosystems

11.A Improve Watershed Health, Resiliency, and Capacity for Natural Storage
11.B Develop Additional Instream Protections
11.C Prevent and Eradicate Invasive Species
11.D Protect and Restore Instream Habitat and Habitat Access for Fish and Wildlife
11.E Develop Additional Groundwater Protections

Public Health

12.A Ensure the Safety of Oregon's Drinking Water
12.B Reduce the Use of and Exposure to Toxics and Other Pollutants
12.C Implement Water Quality Pollution Control Plans

Funding

13.A Fund Development and Implementation of Oregon's Integrated Water Resources Strategy
13.B Fund Water Resources Management Activities at State Agencies
13.C Invest in Local or Regional Water-Planning Efforts
13.D Invest in Feasibility Studies for Water Resources Projects
13.E Invest in Implementation of Water Resources Projects

Appendix F: Updated 100-Year Water Vision for Oregon (Original Vision Statement and Objectives)

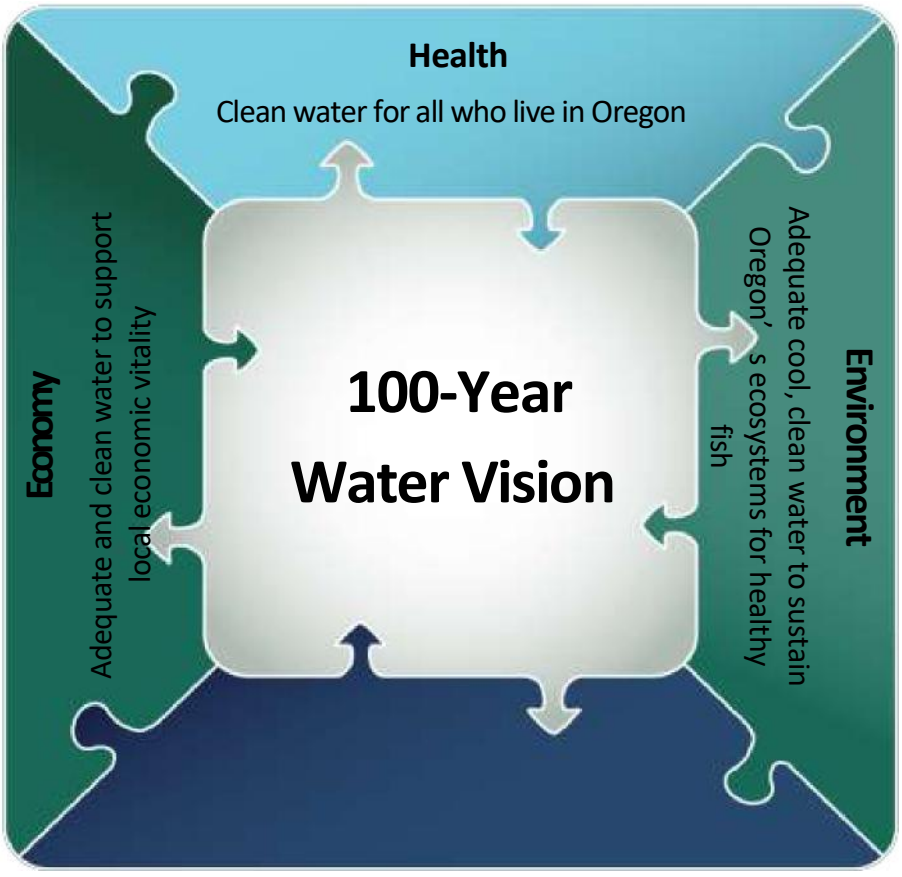
Updated Water Vision

Oregon's 100-Year Water Vision: A Call to Action

Preparing a Secure, Safe, and Resilient Water Future for All Oregonians

Vision Statement

To address changes in climate and population dynamics, Oregonians will take care of our water to ensure we have enough clean water for our people, our economy, and our environment, now and for future generations. Oregonians will invest strategically in infrastructure and ecosystems across all regions to support resilient communities, vibrant local economies, and a healthy environment for all who live here.



Premise

Many areas of Oregon are known for clean and reliable water. As identified in Oregon's Integrated Water Resources Strategy, some of the forces that combine to place significant stress on Oregon's water and water systems include:

1) Climate change and associated increases in temperature, wildfire, drought, damaging floods, and harmful algal blooms;
2) A half century of underinvestment in built and natural water infrastructure;
3) Our changing population and associated development – growing in some areas, shrinking in others; and
4) Too much demand for too little water for in-stream and out-of-stream uses.

These factors impact the quality and quantity of water for our communities, including water in our rivers, lakes, oceans, reservoirs, and aquifers. Simply put, if we are not willing to roll up our sleeves and work together to invest in the ecosystems that sustain us along with built and natural water infrastructure, we place the safety of our communities, the health of our people and environment, and Oregon's economic future at risk.

Goals

Each goal below is important. No single goal can be fully realized independent of the others. Recognizing that tension, we need to invest in a range of innovative solutions that work in balance for our shared water future.

☒ **Health: Clean water for all who live in Oregon**

Water should be fishable, swimmable, and drinkable. Investments in ecosystem health, and built

and natural infrastructure will provide reliable access to clean water.

☒ **Economy: Sustainable and clean water to support local economic vitality**

Diverse and resilient agricultural, timber, fishing, hi-tech, energy, and recreation economies require a reliable and clean water supply. Investments in built and natural water infrastructure will support high quality jobs across all Oregon communities.

☒ **Environment: Adequate cool, clean water to sustain Oregon's ecosystems for healthy fish and wildlife**

Cool, clean water and healthy forests, wetlands, riparian areas, streams, and estuaries provide essential natural processes that maintain and enhance water quality for fish and wildlife. Investments in ecosystems also provide recreational opportunities for those who live in and visit Oregon.

☒ **Safety: Resilient water supplies and flood protection systems for Oregon's communities**

Natural and built water systems designed to protect communities, and increase their resiliency to disasters like earthquakes, wildfires, floods, drought, and sea level rise, are important for all Oregon communities. Investments in those systems will help create safer communities and healthier ecosystems.

Call to Action

Oregon's limited water supplies are already being shaped by climate and population changes. We must both act now and plan for the long term. How we choose to care for our water will determine if we pass a legacy of clean and sustainable water to future generations.

Principles

Note: The following principles were raised during the 2019 Vision outreach conversations. Some of them mirror principles in the Integrated Water Resources Strategy (IWRS). Where the concepts are similar, the IWRS principles are referenced. Information gathered through the fall will also be used as part of the next update to the IWRS.

While the Vision goals reflect *the needs we have* for water, our principles guide how *people can work together* to achieve a secure, safe, and resilient water future for all who live here.

Balancing Interests: Water is an essential but limited resource. We recognize there is not enough water to meet every 'want.' We will seek to balance interests across all of our water goals, and recognize the best solutions should address multiple uses. (*IWRS Principles - Balance, Sustainability, Interconnection/Integration*)

State Framework with Regional and Local Flexibility: Water challenges and opportunities vary greatly from region to region across the state. Successful strategic solutions and investments will build on flexible approaches that respect regional differences. These approaches should be both supported and bounded by a state framework, grounded in current water law, with clear policies to define the direction. (*IWRS Principles - Science-Based, Flexible Approaches, Implementation, Facilitation by the state*)

Tribal Sovereignty: Oregon's water future is best implemented when we work in partnership with the sovereign tribes in Oregon, respecting both treaty rights and tribal cultural connections to water.

Equity & Transparency: The benefits of clean and reliable water are shared by all who live here, along with our native fish and wildlife. We will build a more equitable water future by ensuring our water decisions and investments are inclusive and transparent, with opportunities for all communities to participate. (*IWRS Principles - Public Process*)

Affordability: Improvements to our infrastructure and ecosystems come with costs. We will ensure that those costs are not disproportionately borne by those who can least afford it. *(IWRS Principles - Reasonable Cost)*

Infrastructure & Ecosystems: Oregon's water goals can be met in many ways. We recognize that built systems like dams, pipes, levees are only one part of the solution. Natural systems like wetlands, estuaries, and rivers themselves must also be part of Oregon's water future - both as natural infrastructure that provides clean water for human use, and as the components of a healthy ecosystem for fish and wildlife.

Coordination & Collaboration: We support formation of regional, coordinated, and collaborative partnerships that include representatives of local, state, federal, and tribal government, private and non-profit sectors, stakeholders, and the public to plan and invest strategically. (*IWRS Principles - Collaboration, Incentives*)

Engaged Oregonians: Engaged community members and water leaders are key to helping all of us who live in Oregon understand the value water as part of our culture, our communities, and our ecosystems. We will cultivate leaders in communities across Oregon that understand the importance of conserving and keeping our water clean, and recognize the need for coordinated water investments.

Innovation: Working with creative individuals and businesses across the state, we will invest in innovative solutions that balance the advantages of built, and natural infrastructure, while also protecting ecosystem values.

Best Use of Available Science Combined with Local Knowledge: The best solutions come when we recognize that both science and local knowledge have value. We will build investment approaches that allow for learning, adaptation, and innovative ideas. (*IWRS Principles - Science-Based, Flexible Approaches)*

Water as a public resource: Public investments in our water future should result in public benefits

Oregon's Water Challenges

Acknowledgements: Water is not like other kinds of infrastructure or natural resources. It is a public resource, but is managed by both public and private entities. It has cultural significance, and is essential to sustain life. There is a finite amount of water and it moves across the landscape while also varying in availability from year to year. Each of us has our own unique background that influences our perspectives on water and water infrastructure. This history forms the foundation for the different ways we each envision our water future. When we each bring that background to a common table, there can be disagreements. Respecting our different perspectives, the lessons we have learned, and the unique water challenges we've faced in our history will be important to develop a shared water future. Below are a list of common challenges and opportunities that will benefit from the focused attention of Oregonians with diverse perspectives.

Water System Challenges

Water Availability

System challenge: Many of Oregon's water delivery systems are outdated and inefficient, increasing the chance that water will not be available for communities when it is most needed.

System opportunity: We can incentivize water conservation and reuse, and invest in modern water delivery systems statewide. Efficiency gains and updated systems will help improve water reliability for cities and counties, tribes, ecosystems, and the many aspects of a thriving economy that depend on water.

Clean Water

System Challenge: Not all parts of Oregon have reliable access to clean water, resulting in increased health risks for those who live here.

System Opportunity: We can invest in resilient built and natural water infrastructure, and reduce pollutants to provide clean water for all Oregon communities.

Ecosystems

System Challenge: Not all watersheds provide cool, clean water and habitat for fish and wildlife, threatening the sustainability of those species in Oregon.

System opportunity: We can increase investments in watersheds to store, filter, and deliver water for fish and wildlife.

Community Security

System challenge: Too much of Oregon's built infrastructure is neglected and not keeping communities safe, while we have not fully realized the benefits of natural infrastructure and ecosystems to protect communities from harmful floods and provide resilience to drought.

System opportunity: We can modernize our flood protection infrastructure where appropriate, while fully incorporating the benefits of natural infrastructure and ecosystems. Combined, these will help mitigate impacts of increased flooding and drought, while reducing the impacts of sea level rise to coastal communities

Management Challenges

Data & Information Services

Management Challenge: Communities across Oregon lack basic data and information to make

strategic, long-term decisions about water investments and water management.

Management Opportunity: Good data is the foundation of wise and coordinated decisions. We can work across agencies at all levels, with tribes, and with the private sector to improve access to accurate, relevant, trusted, and current water data and infrastructure condition. We can also use science and information to anticipate future trends. Access to quality information will help communities strategically plan for and invest in their water future.

Community Capacity

Management Challenge: Communities with fewer resources are challenged to strategically plan for and invest in their water future and need access to a skilled workforce to implement, manage, and monitor water projects.

Management Opportunity: We can begin investing now in strong community capacity and a skilled water workforce in every region across Oregon.

Investments in Water

Management Challenge: We have underinvested in our built and natural water infrastructure, and our ecosystems. Investments in water planning and projects are not fully coordinated at the community, regional or state levels, and there has not been a concerted conversation about how Oregon will fund its future water needs.

Management Opportunity: We can coordinate our current investments and seek new sustainable, dedicated public and private funding for restoration of ecosystems, and built and natural infrastructure. Coordinated and new investments will ensure communities – including Oregon's federally recognized tribes and those people living in disproportionately impacted and rural communities - can afford and access adequate clean water, and return it to our rivers for downstream users, fish, and wildlife.

Water Investment Decision-Making

Management challenge: Oregon lacks a cohesive governance system to strategically prioritize water investments at the local and regional levels, leaving those decisions to a wide array of individuals, governments, and other interests with overlapping priorities and investment needs.

Management Opportunity: Learning from other successful models, Oregon can implement best approaches to ensure water planning and investment decisions are strategic and coordinated across jurisdictions, and with public and private partners. This system can successfully combine a state-level framework with local and regional planning and flexibility.

Education & Culture

Management Challenge: Community leaders across Oregon have limited awareness of Oregon's water challenges, the urgency to act now, and potential water solutions.

Management Opportunity: We can work with communities to build a culture and leadership that prioritizes water at the local, regional, and statewide levels.

Water Vision Phase II Outcomes and Objectives

The state received a diversity of feedback on what the focus of next steps in the process should entail. These ranged from a full overhaul of Oregon's water rights, land use laws, and water quality laws, to focusing only on investments in water infrastructure.

The next phase will address two key outcomes: 1) improving funding coordination and increasing funding available in both the short and long term for built and natural water infrastructure and ecosystems, and 2) developing and investing in the public engagement, governance, information, and capacity systems needed to ensure communities can strategically plan for, design, and implement water investments. With those two outcomes in mind, the next phase will focus specifically on the following objectives:

Community Capacity: Recommend approaches to help communities engage individuals equitably, and expand capabilities to strategically plan for and implement actions to pursue their water futures.

Water Investment Governance: Recommend a framework for local, regional, and statewide governance that will lead to state-supported, regionally appropriate approaches to prioritize water investments with a focus on ensuring all individuals are represented.

Water Funding: Recommend approaches to increase funding coordination, identify early investment needs and funding gaps, and new funding sources that support community water planning, implementation, innovation, and evaluation.

Engaging Oregonians: Recommend approaches to help Oregonians better understand the vital importance of water, the water challenges we face, and the need for all of us to work together and support strategic water investments.

Data and Information Systems: Recommend data needs, tools, and information delivery systems that will help local communities and funders better understand current water and infrastructure conditions, and future water trends, to inform strategic decision-making at all levels.

The process will not focus on policy or statutory changes, except those recommended as a part of the advisory council process to advance the objectives outlined above.

While the process will highlight broad-scale investment opportunities for the 2021 legislative session, the next phase is not intended to prioritize individual community project investments. Rather, the process will help to establish a state and regional framework for how investments should be strategically coordinated and prioritized.

Appendix G: Oregon state agencies with a nexus to water

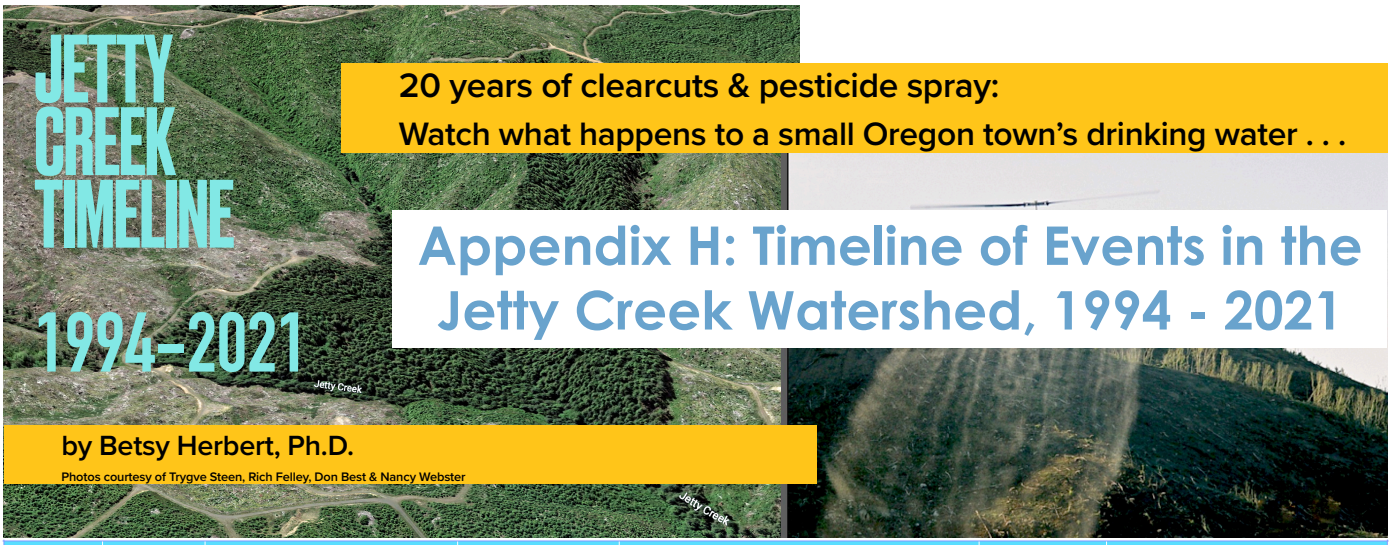
The Audits Division spoke with or received information or feedback from the following agencies during this project:

- **Water Resources Department**: WRD's mission is to serve the public by practicing and promoting responsible water management through two key goals; to directly address Oregon's water supply needs, and to restore and protect streamflows and watersheds in order to ensure the long-term sustainability of Oregon's ecosystems, economy, and quality of life.
    - WRD oversees water quantity and appropriation. This includes regulating surface and groundwater use through a water rights system and participating in local water planning efforts, among many other water related responsibilities.
- **Department of Environmental Quality**: DEQ's mission is to be a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water. The Water Quality Program's mission is to protect and improve Oregon's water quality,
    - DEQ oversees Oregon's water quality. This agency implements state and federal water quality policy and standards, among many other related responsibilities.
- **Oregon Health Authority Drinking Water Services**: DWS's mission is to administer and enforce drinking water quality standards for public water systems in the state of Oregon.
    - OHA-DWS implements the federal Safe Drinking Water Act. This agency regulates public drinking water systems, among many other related responsibilities.
- **Oregon Watershed Enhancement Board**: OWEB's mission is to help protect and restore healthy watersheds and natural habitats that support thriving communities and strong economies.
    - OWEB provides lottery funded grants to Oregonians to help care for local streams, rivers, wetlands, and natural areas.
- **Oregon Parks and Recreation Department**: OPRD's mission is to provide and protect outstanding natural, scenic, cultural, historic and recreational sites for the enjoyment and education of present and future generations.
    - OPRD administers the federal Scenic Waterways Act. This agency manages state parks and beaches for recreation and ecosystem protection.
- **Oregon Department of Agriculture**: ODA's mission is to ensure healthy natural resources, environment, and economy for Oregonians now and in the future through inspection and certification, regulation, and promotion of agriculture and food.
    - ODA administers the Agricultural Water Quality Management Program, which is responsible for developing plans and ensuring rule compliance to prevent and control water pollution from agricultural activities and soil erosion on rural lands. The program is also responsible for ensuring that farmers and ranchers help achieve water quality standards and meet the agricultural pollutant load allocations assigned by DEQ.
- **Oregon Department of Forestry**: ODF's mission is the serve the people of Oergon by protecting, managing, and promoting stewardship of Oregon's forests to enhance environmental, economic, and community sustainability.

    - ODF develops, enforces and monitors practices under the Oregon Forest Practices Act, which includes rules on stream protection.
- **Oregon Department of Fish and Wildlife**: ODFW's mission is to protect and enhance Oregon's fish and wildlife and their habitats for use and enjoyment by present and future generations
    - ODFW implements fish and wildlife protection and management policies, including regulating fish harvests and protecting and enhancing fish populations through habitat improvement and the rearing and release of fish into public waters.
- **Department of State Lands**: DSL's mission is the ensure Oregon's school land legacy and protect wetlands and waterways of the State through superior stewardship and service.
    - DSL manages state owned lands, including submersible lands and lands underlying tidally influenced waterways.
- **Department of Land Conservation and Development**: DLCD's mission is to help communities and citizens plan for, protect and improve the built and natural systems that provide a high quality of life. In partnership with citizens and local governments, DLCD fosters sustainable and vibrant communities and protects our natural resources legacy.
    - DLCD's programming focuses on land use, and water is appurtenant to land. DLCD provides technical assistance and funding to jurisdictions when putting together land use plans, and houses the state's ocean and coastal services program, which has a strong nexus to water.
- **Department of Energy**: ODOE's mission is the help Oregonians make informed decisions and maintain a resilient and affordable energy system.
    - ODOE promotes energy efficiency standards, including water efficiency for faucets, shower heads, commercial dishwashers, and residential sprinklers. ODOE also has a Nuclear Safety and Emergency Preparedness Division.
- **Oregon Department of Transportation**: ODOT's mission is to provide a safe and reliable multimodal transportation system that connects people and helps Oregon's communities and economy thrive.
    - ODOT does some work in the area of water resources and water quality management and treatment to mitigate impacts to water on a project basis.
- **Business Oregon**: Business Oregon's mission is to invest in Oregon businesses, communities, and people to promote a globally competitive, diverse, and inclusive economy.
    - Business Oregon administers multiple funding programs, both state and federal. Funding for water projects primarily comes through loan programs for water infrastructure, with some grant programs to assist communities planning water projects.
- **Regional Solutions**: Regional Solutions is a team of staff comprised of representatives from the Governor's Office and five state agencies, including: DEQ, DLCD, ODOT, OHCS, and Business Oregon. The team's goal is to create better communication and working relationships between agencies on tangible, priority economic projects, to leverage agency resources to assist communities, to make permitting and other regulatory processes more understandable and efficient, to use Oregon's sustainable community objectives as a guide to achieving priorities, and to strengthen the relationship between government and higher education.

The following agencies also have a nexus to water but were not interviewed for this project.

- **Department of Geology and Mineral Industries**
- **Oregon State Marine Board**
- **Oregon Public Utilities Commission**
- **Office of Emergency Management**

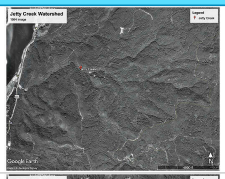
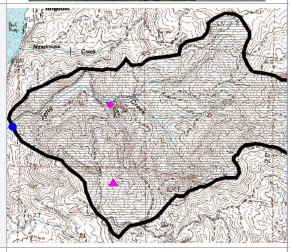
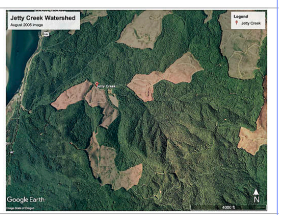


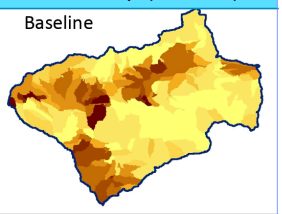
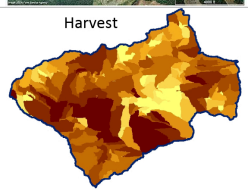
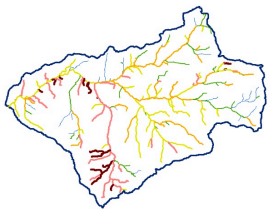
20 years of clearcuts & pesticide spray:
Watch what happens to a small Oregon town's drinking water . . .

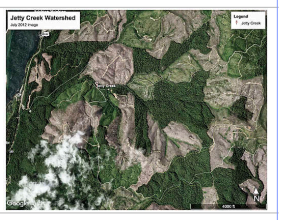
Appendix H: Timeline of Events in the Jetty Creek Watershed, 1994 - 2021

by Betsy Herbert, Ph.D.

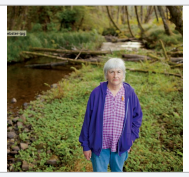
Photos courtesy of Trygve Steen, Rich Felley, Don Best & Nancy Webster

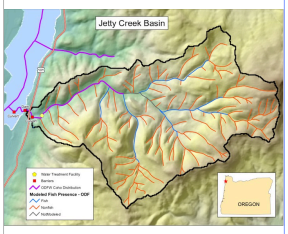
	Date	Event	Agency Response	Notes	Caption	Photos & maps (thumbnails)
	1994	**Intact Jetty Creek Watershed,** the primary source of drinking water for the Oregon coastal town of Rockaway Beach.		Jetty Creek watershed is 2.1 sq. miles or 1,344 acres. ********** Note the lack of both roads and clearcuts	**1994 image from Google** ********** **USGS Black & White Aerial Photo Image**	
	2000	MORE ROADS and a clearcut at edge Jetty Creek watershed		The single clearcut in the upper right corner is only partially in the Jetty Creek watershed.	**2000 image from Google** ********** **USGS Black & White Aerial Photo Image**	
	2002	Two clearcuts completed by Stimson Timber, primary landowner in Jetty Creek watershed	Acreage unknown; ODF destroys records of forest operations after 7 years		**2003 image from USDA showing 2002 Stimson Timber clearcuts** ********** **Color Photo Aerial Image**	
	10/1/02	Oregon Department of Environmental Quality (DEQ) identifies 2002 clearcuts in Jetty Creek watershed as potential "higher risk" contaminating source to Rockaway Beach drinking water	DEQ has no legal authority under Safe Drinking Water Act to restrict contaminating sources; source water protection in Oregon is "voluntary"	The two 2002 clearcuts were identified by DEQ in as higher risk contaminating sources to drinking water. (SOURCE WATER ASSESSMENT SUMMARY BROCHURE ROCKAWAY BEACH WATER DEPARTMENT PWS # 4100708)	**2002 DEQ map of Rockaway Beach Water system's source watershed with pink arrows showing "area-wide" managed forests as contaminating sources**	
!	1/14/05	**Oregon Health Authority (OHA) Water Quality Alert issued** to Rockaway Beach Water system; Sampling dates were 9/15/04 & 11/30/04		**First ever water quality alert for carcinogenic toxins issued to Rockaway Beach** TOTAL TRIHALOMETHANES (TTHMs) and TOTAL HALOACETIC ACIDS (HAAs); **safe levels exceeded.** See records here.; Both toxins are disinfection byproducts (DBPs) caused when chlorine interacts with organic materials (sediment) present in water. Jetty Creek water diverted for September 2004 was 28.74 acre feet; well water used for that month was 8.4 acre feet; for November 2004 Jetty Creek water used was 20.31 AF and well water used was 13.14 AF; see DWR Rockaway Beach Entity Water Use Report		
!	8/16/05	**OHA Water Quality Alert issued** to Rockaway Beach Water system; Sampling date was 05/25/05		TTHMs safe levels exceeded See records here. Jetty Creek water diverted for sampling month of May was 24.52 acre feet; well water used for that month: 13.09 acre feet; see DWR Rockaway Beach Entity Water Use Report	**8/2005 Image from State of Oregon** ********** **Note, much larger area of clearcuts**	

	Date	Event	Agency Response	Notes	Caption	Photos & maps (thumbnails)
	2006	The 1,344 acreJetty Creek watershed has 931 acres of forest cover after recent clearcutting by Stimson Timber		Sediment yield calculated as 2006 baseline (2011 unpublished presentation: Hydrological Impact Assessment-Oregon Coast Pilot Projects, hydrologist Shreevita Basu) Note that the areas with higher sediment yields align closely with the clearcuts in the photo above	**Darker colors mean more sediment yield from catchments ***************** compare to 2005 & 2011 post-logging maps**	
!	2/23/07	**OHA Water Quality Alert issued** to Rockaway Beach Water system; Sampling date was 1/08/07		TTHMs safe levels exceeded See records here. Rockaway Beach failed to report water usage for entire year of 2007; see DWR water use report-surface water; see DWR water use report groundwater		
$$	6/1/09	Rockaway Beach water rates at $24-27/per 800 cu feet (approx. 6,000 gallons)		2009 Rockaway Beach City Council resolution		
$$	8/31/09	Rockaway Beach receives $2,407,870 state & federal loans for new water treatment plant	**OHA tells Rockaway Beach that new water treatment plant needed** with membrane filter, to treat higher levels of turbidity (sediment)	(FinancialServices/SZ9002 Rockaway Beach Contract.doc) Net revenues of Rockaway Beach Water System shall be used to repay the loans; rates and fees to be set to enable repayment of loan, as specified in Special Conditions of the contract		
!	6/23/10	**OHA Water Quality Alert issued** to Rockaway Beach Water system; Sampling date was 06/15/10		TTHMs safe levels exceeded See records here. Rockaway Beach failed to report water usage for entire year of 2010; see DWR water use report-surface water; see DWR water use report groundwater		
	9/1/10	OSU hydrologist Kevin Bladon publishes paper demonstrating the **increasing need for source water protection from land disturbance**		"Implications of land disturbance on drinking water treatability in a changing climate: Demonstrating the need for 'source water supply and protection' strategies" Water Research 45(2): 461-72 Read article here.		
!	9/14/10	**OHA Water Quality Alert issued** to Rockaway Beach Water system; Sampling date was 8/30/10		TTHMs safe levels exceeded See records here. Rockaway Beach failed to report water usage for entire year of 2010; see DWR water use report-surface water; see DWR water use report groundwater		
!	12/8/10	**OHA Water Quality Alert issued** to Rockaway Beach Water system; Sampling date was 11/30/10		TTHMs safe levels exceeded twice in 4th quarter; See records here. Rockaway Beach failed to report water usage for entire year of 2010; see DWR water use report-surface water; see DWR water use report groundwater		
	2011	Rockaway Beach residents observe aerial pesticide spray with helicopters in the watershed	Records of pesticide spraying are kept by the applicators for only 3 years & not public information OAR 603-057-0410; annual reports of past pesticide spraying retained by Oregon Department of Agriculture (ODA), but are confidential & not available to the public OAR OAR 603-057-0417.			
	2011	Jetty Creek forest cover is 54% less than in 2006; now estimated at 428 acres		(2011 unpublished presentation: Hydrological Impact Assessment-Oregon Coast Pilot Projects, hydrologist Shreevita Basu)	**11/2011 USDA Satellite Image ************ Many new clearcuts, very little forest is left**	
	2011	Sediment yield increases significantly in Jetty Creek after forest clearcutting		2011 sediment yield calculated; compare to 2006 baseline map; (2011 unpublished presentation: Hydrological Impact Assessment-Oregon Coast Pilot Projects, hydrologist Shreevita Basu)	**Darker colors mean more sediment yield from catchments ********* compare to 2006 baseline map**	
	2011	Summer streamflow decreases 30-40 percent in some reaches of Jetty Creek watershed, compared to 2006 baseline		Reduction in streamflow calculated; (2011 unpublished presentation: Hydrological Impact Assessment-Oregon Coast Pilot Projects, hydrologist Shreevita Basu)	**Reaches shown in bright red = 30-40% decrease in summer stream flow; Reaches shown in brown = 20 -30% decrease in summer streamflow**	

	Date	Event	Agency Response	Notes	Caption	Photos & maps (thumbnails)
!	3/23/11	**OHA Water Quality Alert issued** to Rockaway Beach Water system; Sampling date was 4/28/11		TTHMs safe levels exceeded See records here. Rockaway Beach failed to report water usage for entire year of 2011; see DWR water use report-surface water; see DWR water use report groundwater		
!	4/28/11	Rockaway Beach Water System's **annual average for TTHMs in water exceeds the level considered safe for this carcinogen**	OHA requires Rockaway Beach to send out a public notice	OHA contacts Rockaway Beach Water System: The running annual average for TTHMs was over the maximum contaminant level. This is the first time the Annual Average for TTHMs has exceeded a safe level. This is of special concern, because significant peaks are possibly hidden in the average and TTHMs are carcinogenic. See detailed report here. Rockaway Beach failed to report water usage for entire year of 2011; see DWR water use report-surface water; see DWR water use report groundwater		
$$	5/4/11	Rockaway Beach completes construction of new water treatment plant; contract cost $2.4 million; financed by State of Oregon; city to pay back $1.7 million (2009 Rockaway Beach contract)		New plant uses a membrane filtration system to treat the 109 million gallons of water used annually by the City of Rockaway Beach. Read news article here.		
👥	7/1/11	Rockaway Beach residents Nancy Webster and Judy Coleman hike the watershed, observing recent clearcuts		They encounter two loggers working in the area who tell them that the Jetty Creek headwaters had some of the best drinking water in Tillamook County. The loggers said they were concerned that this logging would harm the drinking water source & suggested that we contact ODF to express our concerns about future pesticide spraying.		
!	7/8/11	**OHA Water Quality Alert issued** to Rockaway Beach Water system; Sampling date 6/28/11:		TTHMs exceeded running average for several quarters; OHA Water quality alerts continue after new water treatment plant up and running. See detailed report here. Rockaway Beach failed to report water usage for entire year of 2011; see DWR water use report-surface water; see DWR water use report groundwater		
!	10/7/11	**OHA Water Quality Alert issued** to Rockaway Beach Water system; Sampling date 9/28/11		TTHMs safe levels exceeded See records here. Rockaway Beach failed to report water usage for entire year of 2011; see DWR water use report-surface water; see DWR water use report groundwater		
!	10/7/11	**OHA Water Quality Alert issued** to Rockaway Beach Water system; Sampling date 9/28/11		HAAs safe levels exceeded See records here. Rockaway Beach failed to report water usage for entire year of 2011; see DWR water use report-surface water; see DWR water use report groundwater		
!	5/21/12	**OHA Water Quality Alert issued** to Rockaway Beach Water system; Sampling date 5/10/12	OHA tells Rockaway Beach it needs to upgrade water treatment plant	TTHMs safe levels exceeded See records here. Rockaway Beach failed to report water usage for entire year of 2012; see DWR water use report-surface water; see DWR water use report groundwater	**7/2012 Google Earth Satellite Image** ******** **Shows much larger area of clearcuts**	
👥	9/16/12	Rockaway Beach Citizens for Watershed Protection (RBCWP) is formed.		After watching aerial pesticide spraying of a recent clearcut in Jetty Creek only a half mile from her home home, Nancy Webster joins with other neighbors to discuss drinking water quality alerts, pesticide spraying, and clearcutting in their drinking water source.		
📣	10/6/12	RBCWP bring concerns to Rockaway Beach City Council about pesticides sprayed in watershed polluting drinking water & pesticide drift	Concerns dismissed; City Council could have raised issues to DEQ, but they did not.	Citizens attending the city council meeting report that **local real estate developers in attendance opposed any action that draws attention to water quality issues in Rockaway Beach**		
!	10/10/12	**OHA Water Quality Alert issued** to Rockaway Beach Water system; Sampling date 9/25/12		TTHMs safe levels exceeded. See records here. Rockaway Beach failed to report water usage for entire year of 2012; see DWR water use report-surface water; see DWR water use report groundwater		
!	10/10/12	**OHA Water Quality Alert issued** to Rockaway Beach Water system; Sampling date 9/25/12		HAAs safe levels exceeded See records here. Rockaway Beach failed to report water usage for entire year of 2012; see DWR water use report-surface water; see DWR water use report groundwater		
📣	10/13/12	Nancy Webster of Rockaway Beach Citizens for Watershed Protection raises pesticide risk issues with ODF stewardship forester	ODF can't legally stop pesticide spraying, which is regulated by ODA	Email 10/13/12 between Nancy Webster & Stewardship Forester Ed Wallmark		
$$	2012	City of Rockaway Beach submits corrective action plan for water treatment plant to OHA; cost estimate $400K		Read article here		

	Date	Event	Agency Response	Notes	Caption	Photos & maps (thumbnails)
!	4/3/13	**OHA Water Quality Alert issued** to Rockaway Beach Water system; Sampling date 3/21/13		HAAs safe levels exceeded See records here. Jetty Creek water usage for March 2013 was 26.87 AF; well usage was not reported for 2013; see DWR water use report-surface water; see DWR water use report groundwater		
!	4/3/13	**OHA Water Quality Alert issued** to Rockaway Beach Water system; Sampling date 3/21/13		TTHMs safe levels exceeded See records here. Jetty Creek water usage for March 2013 was 26.87 AF; well usage was not reported for 2013; see DWR water use report-surface water; see DWR water use report groundwater	**2013 Oblique Aerial Photo by Don Best ****** Shows extensive Jetty Creek watershed clearcuts**	
	5/6/13	60 residents attend first public meeting regarding pesticide use on lands that provide municipal drinking water.		Organized by Bob Rees from the North Coast State Forest Coalition and held at the Rockaway Beach City Hall.		
!	7/1/13	**OHA Water Quality Alert issued** to Rockaway Beach Water system; Sampling date 6/25/13		HAAs safe levels exceeded See records here. Jetty Creek water usage for June 2013 was 27.82 acre feet; see DWR water use report-surface water; Rockaway Beach failed to report groundwater usage for entire year of 2013; see DWR water use report groundwater		
!	7/1/13	**OHA Water Quality Alert issued** to Rockaway Beach Water system; Sampling date 6/25/13		TTHMs safe levels exceeded See records here. Rockaway Beach failed to report groundwater usage for entire year of 2013; see DWR water use report groundwater see DWR water use report-surface water;		
	7/1/13	RBCWP submits white paper about clearcutting & aerial spray impacts on drinking water to governor's staff	Rockaway citizens' concerns are dismissed.	Rockaway Citizens meets with governor's staff & DEQ, but RBCWP requests for follow-up meeting were never acknowledged		
	2013	Pesticides aerial sprayed in headwaters of Jetty Creek by Stimson Timber:		***Toxins: Clopyralid, Glyphosate, Imazapyr, Metsulfuron methyl, Sulfometuron Methyl; surfactant,and Chemical additives Cross hair and Syl-Tac and MSO.***		
	2013	Public comments submitted: People should not be exposed to these toxic chemicals, which can persist in soil and move into surface and ground water.	ODF and OHA claim these pesticides are safe when used as directed. Neither ODF or OHA have authority to stop pesticide application. OHA does not monitor pesticide drift in air.	Emails between Nancy Webster and ODF staff member David Farrar July 2013		
	6/24/13-12/31/13	Pesticide application: Aerial spray north of treatment plant in Jetty Creek by Olympic Resource Management:		***Toxins: Oust Extra, Glyphosate, Accord XRT, Chopper, and MSO surfactant.***		
	8/21/13	Rockaway Beach/Jetty Creek featured in front page story in The Oregonian: **"Seeking Purity, from Forest to Faucet"**		Read Oregonian article here. Nancy Webster interviewed by investigative reporter Scott Learn about deficiencies in Oregon's forest practice regulation; 11 of the 18 public water systems on the coast have received DEQ water quality alerts		
	9/18/13	DEQ & Tillamook Estuaries Partnership **detect pesticide sulfometuron-methyl in Rockaway Beach raw drinking water**		(p. 24, 2015 DEQ final draft) Rockaway Beach Water District spoiled prior test between August 13-26 because of plant tests done at sampling time. So had to be re-done in September.		
!	9/24/2013	**OHA Water Quality Alert issued** to Rockaway Beach Water system; Sampling date 9/12/13		TTHMs safe levels exceeded See records here. Rockaway Beach failed to report water usage for entire year of 2013; see DWR water use report-surface water; see DWR water use report groundwater		
	10/10/13 - 12/31/13	"2013 Mt Beaver Control" 500 acre county-wide rodenticide ground application; within 100 feet of numerous fish-bearing & domestic use streams		**Toxin: chlorophacinone** Statutory written plan required; included; FERNS notification # 2013-511-00314		
!	12/4/2013	**OHA Water Quality Alert issued** to Rockaway Beach Water system; Sampling date 11/21/13		**Rockaway Beach has now received more OHA water quality alerts than any other public water system on the Oregon Coast.** Carcinogenic TTHMs safe levels exceeded See records here. Rockaway Beach failed to report water usage for entire year of 2013; see DWR water use report-surface water; see DWR water use report groundwater		
	12/17/2013	NOAA and EPA issue finding that **Oregon Forest Practices fail to protect water quality in coastal zone**	ODF continues to treat forest practice rules as best management practices	(OR CZARA Decision Doc 12-17-13.pdf); Four deficiencies cited: inadequate riparian buffers, inadequate landslide prevention, inadequate mitigation for forest roads, inadequate pesticide mitigation		

	Date	Event	Agency Response	Notes	Caption	Photos & maps (thumbnails)
$$	2014	City of Rockaway Beach completes construction of enhanced treatment (pressurized sand filters)		USWA_00708RockawayBeach.pdf (DEQ source water assessment, p. 8)		
	1/1/14 - 12/31/14	"Roadside spraying" county wide within ORM lands; no application method described; within 100 feet of fish-bearing & domestic water use streams		***Toxins: LV6, Escort; Common: Glyphosate, Imazapyr, Triclopyr*** Statutory written plan required; included; FERNS notification # 2014-511-00003		
	02/28/14 - 12/31/14	"Jetty Tie Road" 110 foot logging road construction	ODF waives 15 day waiting period	No statutory plan required; FERNS notification #2014-511-00052		
	5/1/14 - 9/30/14	"2014 county wide scotch broom spray" 100 acres; within 100 feet of streams or lakes; ground application		***Toxin: triclopyr*** Statutory written plan required; included; FERNS notification # 2014-511-00103		
	9/4/2014	More than 200 people attend the first RBCWP town hall meeting, featuring a panel discussion of aerial spraying with Lisa Arkin and Laurie Bernstein, Beyond Toxics.			**7/2014 Google Earth Satellite image**	
	2014	Jetty Creek watershed now 82% clearcut since 2000		Beyond Toxics organization does analysis of percent clearcut in Jetty Creek watershed.	**2014 Analysis of Jetty Creek Watershed** ********** **82 % Clearcut**	
	11/2/14	RBCWP joins planning meeting with Cameron LaFollette from Oregon Coast Alliance				
	11/10/14	**High Country News** features Nancy Webster of RBGWP in cover story		Read High Country News article here	**High Country News** ********** **Cover Story Features Nancy Webster**	
	12/17/14	Jetty Creek Scoping Project for improving fish passage & building a drinking water settling pond.				
	2015	DEQ completes final draft of report linking private forests to water quality risks		Private forest land is the source of drinking water for 40% of Oregon's water providers; "managed forests" listed as "higher risk" impact for drinking water		
	1/1/15	RBCWP invited to Newport Town Hall meeting to discuss "Community Dialogue on Forestry, Pesticides, and Health."				
	1/30/15	EPA & NOAA find **Oregon's Forest Practice Rules not in compliance with Clean Water Act in the coastal zone**	ODF continues to use existing Forest Practice Rules	Forestry regulations found insufficient to protect water quality from weak stream side buffers, impacts of legacy roads, impacts from landslides & pesticides Read finding here		
!	2/1/15 - 2/15/15	**OHA issues major violation** to Rockaway Beach Water District for failing to report turbidity & treatment monitoring required by federal Surface Water Treatment Rule		Returned to compliance 04/03/15; Read violation report here; Jetty Creek water usage for February 2015 20.48 acre feet; well water usage for February 2015 zero AF; see DWR water use report-surface water; see DWR water use report groundwater		
	2/1/15	RBCWP interviews Shane Anderson, filmmaker of "Behind the Emerald Curtain."				
	3/26/15-12/32/15	"Rockaway PCT" 79.7 acre pre-commercial thinning within 100 ft. Of Jetty Creek		Statutory written plan required; included in file; Summary 2015-511-04819.pdf		
	4/22/15	RBCWP sponsors free showing of film **"Drift: A Community Seeking Social Justice"** at the Coliseum Theater in Tillamook, Oregon.		Timber companies complain to Coliseum Theater about showing the film. Watch film on YouTube		
	4/26/15 -12/31/15	"Countywide scotch broom spray" within 100 feet of fish-bearing stream		***Toxins: triclopyr with acid; chemical additives: Forest Crop Oil*** Statutory written plan required; included; FERNS notification # 2015-511-06201		
	4/27/15 - 12/31/15	"County wide roadside spray" including Jetty Creek watershed; within 100 feet of fish-bearing & D streams and domestic water supply		***Toxins: glyphosate, imazapyr, and triclopyr with acid and 2,4-D with ester; chemical additive: Forest Crop Oil*** Statutory written plan required; included; FERNS notification # 2015-511-06202		
	4/28/15 - 12/31/15	"Paradise Pole" 17.5 acre herbicide application within 100 feet of fish-bearing stream;		***Toxins: glyphosate and imazapyr and sulfometuron methyl and metsulfuron methyl; chemical additives: Crosshair and Syul-Tac and MSO Concentrate*** Statutory written plan required; included; FERNS notification # 2015-511-06533		

	Date	Event	Agency Response	Notes	Caption	Photos & maps (thumbnails)
	7/4/15 - 10/31/15	"Rockaway Roadside Spray" on ORM timberlands; within 100 feet of fish-bearing streams		***Toxins: 2,4-D with acid and glyphosate and triclopyr with acid; chemical additive: MSO concentrate*** Statutory written plan required; included; FERNS notification # 2015-511-09445		
	7/13/15 - 12/31/15	"PCT #5" 84 acre pre-commerical thin; within 100 feet of fish-bearing streams; partially in Jetty Creek watershed		Statutory written plan required; none found in file FERNS notification #2015-511-10329		
	7/20/15 - 12/31/15	"PCT #6", 80 acre pre-commercial thinning in Jetty Creek within 100 feet of fish-bearing and domestic use streams		Statutory written plan required; none found in file; FERNS notification #2015-511-10705		
$$	8/1/15	Rockaway Beach **water rates double** since 2009 to $48-54/800 cu ft. (approx. 6,000 gallons)		Before treatment plant was built water rates were $24-$27/800 cu. ft;		
	8/9/15	RBCWP meets with Ed Armstrong, Commissioner from DEQ.		Ed Armstrong was a former resident of Tillamook County		
	8/17/15	Rockaway Beach applies to Department of Water Resources (DWR) for emergency water use from Spring Creek		DWR Application # LL1607 approved with consent of Neah Kahnie School District at rate of 51 cubic feet per second (cfs)		
	9/17/15	Second annual RBCWP town hall meeting in Rockaway Beach. **"Safeguarding the Future of Coastal Clean Water and Air."** Coming together of many environmental groups; Slide presentation explains risks of aerial pesticide spraying as practiced in Oregon		Presenters include: Lisa Arkin, Executive Director, Beyond Toxics; Deke Gunderson, Ph.D. - Environmental Science professor at Pacific University. Greg Haller - Conservation Director, Pacific Rivers Council.Chandra LeGue - Western Oregon Field Coordinator, Wild Oregon, Geoff Wullschlager - City Manager, Wheeler, Oregon.		
	10/14/15 - 12/31/15	"Boomer Trap Paradise Pole" 17 acre rodenticide ground application targeting mountain beaver; within 100 feet of fish-bearing stream		**Toxin: Rozol pellets** Statutory written plan required; included; FERNS notification # 2015-511-13039		
	10/10/15 - 12/31/15	"Rockaway Pile Burn" 431 acres in and around Jetty Creek watershed		FERNS notification #2015-511-12980; Burn permit required; none found in file		
	10/22/15	Premier of **"Behind the Emerald Curtain"** documentary film by Shane Anderson, Pacific Rivers		RBCWP interviewed by Shane Anderson; Watch trailer here	**Screen shot of 2015 official trailer for the film**	
	2016	Oregon Department of Fish & Wildlife (ODFW) releases **Jetty Creek map showing presence of native fish**			**ODFW Fish Map ************ Purple = Coho Blue = Fish Red = Non-fish ************ "Olympic Line" Logged in 2020 involves Fish Bearing Stream**	
	5/30/16 - 12/31/16	"Tillamook 2016" Herbicide application ground spot application, undisclosed acreage, within 100 feet of stream		***Toxins: triclopyr with ester and triclopyr with acid and triclopyr with amine and 2,4-D with ester and 2,4-D with amine and glyphosate with chemical additives MSO concentrate***	**8/1/2016 Google Earth Satellite image ********** Red O in area where 10/1/2016 ground image was taken**	
	6/26/16	RBCWP accompanies Oregon Wild and North Coast State Forest Coalition on ecological & forest management hike				
	7/9/16 - 12/31/16	"Hatchet " 35 acre herbicide application, ground,-pressurized, broadcast; within 100 feet of fish-bearing streams		***Toxins: clopyralid and sulfometuron methyl*** Statutory written plan required; included; FERNS notification # 2016-511-07995		
	7/12/16 - 12/31/16	"Red Alder Slash 2016 2" 129 acre Pre-commercial thinning in Jetty Creek watershed within 100 feet of fish-bearing & domestic use streams		Statutory written plan required; included; FERNS notification # 2016-511-08038	**10/1/2016 Ground image of upper Jetty Creek watershed, looking southwest**	
	9/1/16 - 12/31/16	"Maple Clump 2.0" 47 acre herbicide application, within 100 feet of fish-bearing streams; ground manual spot application;		**Toxin: Imazapyr** Statutory written plan required; included; FERNS notification # 2016-511-10209		

	Date	Event	Agency Response	Notes	Caption	Photos & maps (thumbnails)
	9/2/16	Jones & Perry research published: **"Summer streamflow deficits from regenerating Douglas-fir forest in the Pacific Northwest"**		Plantation-style forestry shown to reduce stream flows Read article here.		
	10/16/16	RBCWP organizes "Save Short Sand Town Hall," an all-day workshop in Manzanita, Oregon to discuss Boise Cascade's poisoning of Short Sand Beach with pesticide residue.		Private forest clearcuts draining to public recreation areas Oswald West State Park & Short Sand Beach to be sprayed with a mix of dangerous chemicals		
	1/6/17	After pushback from the timber industry, DEQ scraps 2015 report linking private forests to water quality risks	State Forester Peter Dougherty states there is no evidence showing forest practices harm water quality.	"After Pushback, Oregon Scraps Report Linking Private Forests To Water Quality Risks," Peter Schick, OPB Read OPB article here		
	4/11/2017 - 12/31/17	"Olympic Line Pre" Road construction and landing expansion in headwaters of Jetty Creek watershed	Headwaters streams not protected by forest practice rules	Statutory written plan not required; FERNS notification # 2013-511-03705		
	3/18/17	**"All Aboard the Clearcut Express,"** launched in Portland. RBCWP participates in the launch		Tri-Met light rail MAX train wrapped in an informational sign sponsored by Oregon Wild Read about "All Aboard the Clearcut Express," here.	**Oregon Wild photo** ********** **"Welcome to Oregon Home of the Clear-Cut"**	
	4/19/17	RBCWP joins other Oregonians in Salem for the "Rally for the Water and Wildlife."		Read about "Rally for the Water and Wildlife" here		
	4/25/17	Release of "**360 Degrees of Oregon Forest Practices: How Oregon's Forestry Laws are Wreaking Havoc on Coastal Drinking Water,"** a documentary film produced by the University of Oregon School of Journalism.				
	May 2017	Lincoln County voters passed Measure 21-177, banning aerial pesticide spraying in the county	State law pre-empts county's power to ban pesticides	Ordinance will later be overturned by Circuit & Appeals Court rulings		
	5/12/17	RBCWP member Glenna Gray, organizes book release event for "May the Forest Be With You"			**"May the Forest Be With You," edited by Gray, celebrates forests and trees & shines light on consequences of logging as it is currently practiced**	
	5/13/17	Jetty Creek Excursion: Rockaway Citizens hike with Western Oregon College Green Team and Environment Club to see what trees are left standing after last clearcut.			**6/2017 Google Earth Satellite Image** ********** **The last area of older forest in remains in the center.**	
	7/8/17-12/31/17	"Alder Slash" 1749 acre pre-commercial thinning throughout Tillamook county, within 100 feet of numerous fish-bearing & domestic use streams		Statutory written plan required; included in file; Summary 2017-511-08054.pdf		
	7/19/17	RBCWP hosts presentation by Chuck Willer, Coast Range Association: "Western Oregon's Private Forests & Their Role in our Region"				
	7/26/17	RBCWP announces ODF plans for extensive spraying on state lands across Oregon north coast.		Read news article about extensive spraying		
	7/27/17	RBCWP calls on Governor Kate Brown to order immediate cease to the toxic sprays on state lands until pubic notification can be guaranteed.	Request dismissed.			
	8/01/17 - 8/31/17	**OHA issues major violation** to Rockaway Beach Water District for **failing to report turbidity** & treatment monitoring required by federal Surface Water Treatment Rule		Returned to compliance 10/04/1 See violation record here		

	Date	Event	Agency Response	Notes	Caption	Photos & maps (thumbnails)
	9/17/17	RBCWP organizes town hall meeting in Rockaway Beach. : "Say 'Yes' to Better Forestry" with presenters Peter Hayes, forester, and Ernie Niemi, economist.				
	10/20/17	RBCWP organizes presentation in Hebo, Oregon entitled "Clean Waters Forum, Are Our Coastal Drinking Waters at Risk?"		Presenters: Lisa Arkin, Jason Gonzales, Susan Katz, M.D.		
	11/1/17	Rockaway Beach **water rates almost triple,** increasing again from 2009 to $68-74/800 cu ft. (approx. 6,000 gallons) to cover cost of treatment plant		2009 water rates were $24-27/per 800 cu.ft (approx. 6,000 gallons)		
	11/12/17	RBCWP speakers series "The Legacy of Agent Orange in Oregon Forests" by photographer and writer Roger Dorband				
	3/21/18	**OHA issues "BOIL WATER" Advisory** to Rockaway Beach	Affected 20 homes; Advisory lifted 3/22/18	Loss of water pressure due to a landslide; 60 feet of pipe need to be replaced; Read report here		
	5/15/18	University of Oregon economist Ed Whitelaw writes about his 2017 class study of Jetty Creek, which concludes that logging causes turbidity		Op-ed Published in Register Guardian: "Turbid waters point to need for better forest practices," by Ed Whitelaw and Winston Hovekamp; Read Op-ed here		
	5/26/18 - 12/31/18	Aerial herbicide application to 496 acres various sites in Tillamook County including Jetty Creek; Syl-Tac,and Crosshair		***Toxins: glyphosate, metsulfuron methyl, sulfometuron methyl, imazapyr, aminopyralid and Metsulfuron methyl with additives of Super Spread, MSO*** Targeted plants include native species Elderberry, Salmonberry, Thimbleberry, Cascara Buckthorn; Statutory written plan required; included in file; Summary 2018-511-07155.pdf		
	6/13/18	RBCWP organizes forestry & pesticide monitoring workshop. Presenter: Jason Gonzales, Oregon Wild				
	9/11/18	RBCWP public meeting with Jason Gonzales discussing Spray Free Coast & coastal community organizing				
	10/9/18	RBCWP speaker series: Jeremy Sappinton, public health professor, discusses industrial forest pesticide applications & potential public health concerns				
	11/1/18	RBCWP joins forces with other environmental groups to support a statewide ballot initiative to protect forests and drinking water				
	11/13/2018	RBCWP speaker series: Erin Grady Civil Liberties Defense Center: **"In Defense of Coastal Forests: Know Your Rights"**		Read article about event here		
	2/19/19 - 12/12/19	"PCT 19" pre-commercial thinning 674 acres throughout Tillamook County including 114 acres in Jetty Creek watershed; within 100 feet of numerous fish-bearing & salmon, steelhead & bull trout streams		Statutory written plan required; included in file; Summary 2019-511-02021.pdf		
	2/1/19	RBCWP celebrates new name for organization: North Coast Communities for Watershed Protection (NCCWP).		The organization has expands to more than 700 members, including neighboring north coast communities concerned about clearcutting and toxic spray in drinking watersheds Read about it here		
	4/26/19 - 12/31/19	Aerial, ground pressurized & broadcast herbicide application; 411 acres; within 100 ft. of numerous fish-bearing, domestic use & salmon, steelhead & bull trout streams in Tillamook County		Includes Jetty Creek watershed; ***Toxins: glyphosate,metsulfuron methyl, sulfometuron methyl, imazapyr, aminopyralid, and metsulfuron methyl with chemical additives Super Spread MSO, Syl-Tac, and Crosshair*** Summary 2019-511-05120.pdf		
	5/14/19	NCCWP speaker series: Attorney Mary Scurlock presents: **"Private Forest, Public Waters & How Oregon is Failing its Forest Streams."**		Read article here.		

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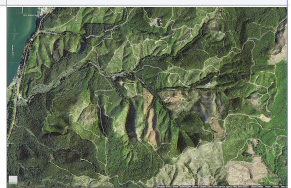
	5/22/2019	**Nancy Webster is featured in Video "TROUBLED WATERS, in Oregon Forests,"** produced by Wild Salmon Center, Portland		Watch the video here	**Image captured from "TROUBLED WATERS" video ** Nancy Webster on LightHawk flight observing coastal clearcut logging**	
	5/22/2019	Flyover reveals recent major clearcut logging in Jetty Creek watershed		Image at 2 minutes 53 seconds in "TROUBLED WATERS, in Oregon Forests" Watch the video here	**Jetty Creek Watershed with "Olympic Line" logged in 2020 in center among clouds**	
	5/24/19 - 12/31/19	"2019 PCT 2" 39 acre pre-commercial thinning including part of Jetty Creek watershed				
	6/1/19	NCCWP tables at Farmers Markets			**NCCWP Tables at local Farmers Markets**	
	6/11/19	NCCWP speaker series: Economist Ernie Niemi: **"Big Timber and You: The Economics Made Easy,"** Astoria, OR		Read Ernie Niemi article here		
	6/13/19	Beyond Toxics offers free FERNS Training: A forest pesticide monitoring workshop.				
	7/2/19	NCCWP joins other organizations at Hug Point to "Rally for the Trees."		North coast communities oppose clearcuts in local drinking watersheds Read news article here	**Scene from Hug Point ********** "Rally for the Trees"**	
	7/4/19	NCCWP "Forest Fairies" take first place for nature representation at Manzanita Independence Day pageant		Event to call attention to the plight of local forests Read news article here		
	7/9/19	NCCWP speaker series: Ecology professor Trygve Steen: **"The Pacific Northwest's Forest Management Crisis Continues"**		Read news article here		
	7/11/19	Secretary of State receives ballot initiatives **35 Oregon Forest Waters Protection Act , 36 Protect Forest Waters from Clearcut Logging. & 37 Protect Forest Waters from Aerial Pesticide Spray**		NCCWP submits more signatures than any other Oregon group for these ballot initiatives. Read about these ballot initiatives here		
	7/21/19	NCCWP co-sponsors statewide petition to Governor Kate Brown to stop aerial spraying	No action.			
	8/13/19	Tour of the Neah Kah Nie Water District watershed		The tour is led by Richard Felley, General Manager of the Neahkahnie Water District and Trygve Steen, Ph.D., PSU professor & forestry expert.	**Group that participated in the watershed tour ** **	
	8/19/19	NCCWP speaker series: Lisa Arkin, Beyond Toxics: **"What are Timber Industries' Practices Doing to Our Watersheds?"**				
	9/1/19	Circuit Court strikes down Lincoln county ordinance banning aerial pesticide use, citing the Oregon Pesticide Control Act, state law which says only the state can regulate pesticide use.	State law pre-empts county ordinances	Read article here		
	9/1/19 - 12/31/19	"Boomer Bait" 809 acre Rodenticide application throughout Tillamook County, including Jetty Creek watershed;; within 100 feet of numerous fish-bearing & salmon, steelhead & bull trout streams and within 300 feet of wetlands & eagle nests		**Toxin: Rozol (aimed at killing native Mt. beavers)** Mt. Beavers are a native rodent that play a valuable role in ecosystem functions. They are poisoned because they eat new tree seedlings. There are alternatives to poison that prevent this activity. Statutory written plan required; none found in file; Summary 2019-511-06470.pdf		
	9/21/19	CBS *This Morning* interviews NCCWP's Nancy Webster about **"How to Protect Trees of the Pacific Northwest"**		A private forest manager states on camera that he finds clearcuts "aesthetically pleasing" Watch the clip here.	**Nancy Webster, founder of NCCWP, is interviewed by CBS "This Morning" reporters**	

	Date	Event	Agency Response	Notes	Caption	Photos & maps (thumbnails)
	9/28/19	NCCWP event: "Look Up! It's a Watershed Moment" an all-day art, performance, and forest waters educational forum.		Keynote speaker Ralph Bloemers, Crag Law Center. Read news article here	**Scene from NCCWP's parade *************** "Look Up! It's a Watershed Moment"**	
	10/4/2019	**Oregon Secretary of State rejects ballot initiative** for tighter restrictions on clearcutting & aerial pesticide spraying.		Read Oregonian article here		
	11/18/19	NCCWP speaker series: Conrad Gowell, Native Fish Society. **"Sustainability of Wild Fish & the Risks They Face"**				
	11//2019	NCCWP collects signatures in Manzanita for statewide ballot measure, "Forest Water Protection Act".			**Nancy Webster and friend collecting Ballot Measure Signatures in Manzanita**	
	2020	NCCWP signs petition to Governor Kate Brown requesting moratorium on pesticide aerial spraying, slash burning, & prescribed burning during the Covid-19 pandemic.	Request for aerial pesticide moratorium dismissed; burning was restricted			
	2020	Citizen Science Project: Smoke Monitoring.				
	1/11/20	NCCWP joins Informational rally in Wheeler. Theme: "Ask Stimson to Stop Spraying and Clearcutting above Wheeler."		Event in response to Stimson Lumber Company's proposed ground-spray pesticides on 93 acres of their clearcut land near Wheeler, Oregon residential areas. Read news release here		
	2/10/20	**Oregon environmental groups, timber companies strike 'extraordinary' compromise,** signaling end to November ballot fight		**NCCWP refuses to sign onto the compromise** (MOU) because it doesn't address worst impacts to drinking water: Clearcutting, toxic pesticide spraying & because NCCWP wants to keep speaking out about needed forestry reform .Read Oregon Live article here		
	2/12/20	State of Oregon Court of Appeals **reverses lower court decision rejecting Ballot Initiatives** 35, 36, & 37.		Reasons for rejecting Ballot initiatives found bogus; Anantha v. Clarno, 302 Or. App. 196, 461 P.3d 282 (Or. Ct. App. 2020)		
	2/29/20	NCCWP speaker series: Deke Gundersen, toxicologist, Pacific University. **"Pesticides and Environmental Justice: Impacts on Community Health"**		Event draws residents from along the Oregon coast. Read about it here		
	6/20	Hydrologist Kevin Bladon publishes research showing that **sediment increases tenfold in logged areas over uncut areas inside stream buffers.**		"Quantifying effects of forest harvesting on sources of suspended sediment to an Oregon Coast Range headwater stream" Forest Ecology and Management 466:118123. Read the article here		
	6/20	Hydrologist Catalina Seguro publishes research showing **streamflow 50% lower in a 40 yr-old plantation relative to 110-yr-old forest.**		"Long-term effects of forest harvesting on summer low flow deficits in the Coast Range of Oregon," Seguro et al; Journal of Hydrology Read the article here		
	9/11/20	Oregonian/Propublica publish **"Big money bought the forests. Small timber communities are paying the price"**		Excerpt: "In western Oregon, at least 40% of private forestlands are now owned by investment companies that maximize profits by purchasing large swaths of forestland, cutting trees on a more rapid cycle than decades ago, exporting additional timber overseas instead of using local workers to mill them and then selling the properties after they've been logged." Read the article here		
	11/24/20 - 12/18/20	129 citizens & NCCWP members submitted public comments to ODF opposing the Olympic Line clearcut because of impacts to drinking water and other environmental impacts	ODF dismisses comments; ODF rejects request for extension of 15 day waiting period due to upcoming holiday & COVID.	ODF does not have the authority to "disapprove" a forest operation See ORS 527.674	**Spring 2021 Google Earth Satellite Image ****** Shows "Olympic Line" Clearcuts**	
	12/5/20 - 05/21	"Olympic Line" 56 acres of clearcuts within 50 feet of Jetty Creek fish-bearing & domestic us streams & wetlands		Statutory written plan required; none found in file; Summary 2020-511-12574.pdf	**Aerial image of the clearcuts during "Olympic Line" photo by Trygve Steen**	

	Date	Event	Agency Response	Notes	Caption	Photos & maps (thumbnails)
	12/31/20	Jetty Creek featured in ProPublica/OPB article: **"Timber Tax Cuts Cost Oregon Towns Billions. Then Polluted Water Drove Up the Price"** .		Excerpt: "More than two dozen communities have had at least 40% of the forests around drinking water sources cut down in the past 20 years....Rural communities in Oregon paid millions of dollars for clean, safe drinking water because the state didn't protect their watersheds from logging-related contamination." Read article here		
	01/09/21 - 05/03/21	"Crossover Salvage" 10 acre clearcut in Jetty Creek watershed, within 100 ft of fish-bearing stream		Statutory written plan required; none found in file; Summary 2020-511-12979.pdf	**In background, "Crossover Salvage" logging in progress; In foreground, 2014 clearcut shows poor regeneration & much bare soil; photo by Trygve Steen**	
	3/2/21	**Pesticides used in forestry detected in clams, mussels & oysters off along Oregon coast** (Portland State University study)		Scully-Engelmeyer K, et al., "Exploring Biophysical Linkages between Coastal Forestry Management Practices and Aquatic Bivalve Contaminant Exposure." *Toxics*. 2021; 9(3):46. Read article here		
	3/17/21	Betsy Herbert, Ph.D,, testifies on behalf of NCCWP to the Oregon State Legislature in support of HB 2594, Directing the Department of Forestry to Better Protect Community Drinking Water Supplies	HB 2594 failed	Read HB 2594 & testimony here		
	4/18/21	Nancy Webster, Betsy McMahon & Ron Byers, Esq. present comments on behalf of NCCWP to NOAA.		Comments request emphasis on drinking water and watershed protection in the EIS of the HCP for western Oregon forests.		
	5/1/21	"Olympic Line" extensive blowdown along Jetty Creek and in watershed area feeding Jetty Creek		Intermittent stream channel with narrow 20 foot strip of trees for protection is blowing down severely in just five months,	**Extensive blowdown in "Olympic Line" stream buffers; Soil exposed by the blowdown likely to wash down into Jetty Creek creating turbidity & water treatment problems; photo by Trygve Steen**	
	5/22/21 - 12/31/21	"2021 PCT Alder Slash" 956 acre pre-commercial thinning throughout Tillamook County, including Jetty Creek watershed; within 100 ft of numerous fish-bearing & salmon, steelhead & bull trout streamss & wetlands		Statutory written plan required; none found in file; Summary 2021-511-05908.pdf		
	6/1/21	Oregon Appeals Court affirms lower court ruling striking down Lincoln County's local ordinance to ban aerial pesticide spraying		Read news article here		
	6/17/21	Betsy Herbert, Ph.D., submits public records act request to ODF, requesting all records of logging and pesticide spraying in the Jetty Creek watershed back to 2002.	ODF charges $725 for the records. Reason: High cost because records are not kept at the watershed scale.	Approximately half the records provided are not within the watershed. No records before 2015 are provided. ODF destroys all records of forest operations after 7 years.		
	8/5/21 - 12/31/21	"124 PCT" 51 acre pre-commercial thinning including parts of Jetty Creek watershed, & within 100 feet of a fish-bearing stream				
	7/22/21	Betsy Herbert, Ph.D., testifies on behalf of NCCWP to DEQ's forum re: "DEQ's Obligations Regarding Protection of Community Drinking Water Supplies from Impacts of Industrial Forest Practices"	TBD	Dr. Herbert testifies that DEQ has the authority to override ODF's forest practices if DEQ finds that the regulations are not sufficient to protect water quality.		
	9/8/21	Ron Byers, Esq. & Trygve Steen, Ph.D. testify on behalf of NCCWP before the Board of Forestry urging prioritization of watershed and drinking water protections in ODF goals.				

	Date	Event	Agency Response	Notes	Caption	Photos & maps (thumbnails)
	9/29/21	“Extraordinary compromise” known as Private Forest Accord reached between fisheries advocates and timber industry		Agreement expands stream side buffer zones throughout private forest lands, more restrictions on forest roads, and logging on steep slopes; DOES NOT ADDRESS clearcutting, cumulative impacts from forest operations on water quality/ quantity, DOES NOT PROHIBIT pesticide spraying in drinking watersheds, DOES NOT REQUIRE 80-year rotations in drinking watersheds.		
	10/7/21	DEQ lists community water systems that qualify as “impaired” for turbidity; Jetty Creek is not on the list	TBD	Dr. Betsy Herbert publicly asks DEQ why Jetty Creek is not listed as impaired after being 95% clearcut over 20 years, receiving more water quality alerts for disinfection byproducts than any other water system on the coast, and Rockaway Beach not reporting their water usage for most of those years.		
	12/3/21	ODF adds “Drinking Water Protection” as a new goal in their draft Forest Management Plan for state lands in western Oregon		Previous testimony by Forest/Waters Coalition, NCCWP & others helped to make this possible		

This report is intended to promote the best possible management of public resources.
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