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WaterWatch's mission is to protect and restore streamflows in Oregon's rivers for fish, wildlife, and the people who depend on healthy rivers.



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Front and Back Cover Photo: Springs run into the Metolius River in Central Oregon. Rex Wholster



Koosah Falls, one of three major waterfalls of the McKenzie River

STREAM OF CONSCIOUSNESS

s you may have noticed, this entire issue of Instream is devoted to groundwater. Why would WaterWatch do that? Here's why: Oregon is in the midst of a groundwater crisis, a crisis that, if left unaddressed, will cripple the state's water future in a climate changed world. Though some areas of Oregon are already in a groundwater crisis, we can prevent this crisis from spreading to other basins.

Since our founding in 1985, WaterWatch has been Oregon's leading innovator and advocate for actions and policies to address, and, where possible, reverse, rapidly declining groundwater levels; to provide in depth insight on the consequences of diminishing groundwater reserves to ecosystems, economies, and Oregonians; and to prevent this crisis from spreading to other basins in our state.

Groundwater is a critical source of cold, clean water that feeds many of the state's most important rivers and wetlands complexes, particularly during the dry season when streams and wetlands need water the most. Over a million Oregonians rely on groundwater for drinking water, largely in rural parts of the state. Of course, important parts of Oregon's economy also rely on groundwater. Oregon's environmental and economic future depend on groundwater, yet our spendthrift approach to allocating and managing groundwater puts ecosystems, communities and much of the state at risk.

WaterWatch has been tracking declining groundwater levels in many parts of Oregon. There is little dispute that declining aquifers in many parts of Oregon result, in large part and directly, from Oregon's mismanagement of groundwater permitting policy and process. Oregon is simply giving away water rights for groundwater in areas where the state lacks data to know whether groundwater is available for the new use, and, in what defies comprehension, also in areas where groundwater is already known to be in serious decline. Existing data already demonstrates that in many areas of Oregon, aquifer declines coincide closely with excessive groundwater permitting by the state.

GROUNDWATER: OREGON'S FUTURE DEPENDS ON IT

Wetlands at Malheur National Wildlife Refuge near Frenchglen





residential wells, water conflicts and declining aquifers in many parts of the state.

WATERWATCH'S VISION FOR OREGON'S **GROUNDWATER FUTURE IS PRETTY SIMPLE.**

We believe that Oregon has an obligation to make sustainable groundwater allocation and management decisions - for streams, wetlands, and for people and communities. What does "sustainable groundwater allocation and management" mean? It means that Oregon should use existing data and collect more data where needed to understand the state's aquifers and apply that understanding to management of the groundwater. It means it's time to reform certain agency policies and practices around groundwater that fail to maintain aguifer levels that meet the needs of rivers, cold water species, wetlands, waterfowl, and communities. It means it's time to stop saddling communities, the environment and future Oregonians with tremendous hardship that is largely avoidable.

In this issue, you'll find advocacy for protecting groundwater as a source of clean, cold water that feeds rivers and streams and supports aquatic and bird species and habitat. You'll find material on why groundwater is so important to Oregon's ecosystems, economy, and guality of life. And, hopefully, you will be encouraged to support reforms that are essential to protect and restore groundwater that gives life to Oregon waterways.

It doesn't have to be this way. While some basins in Oregon are already in a groundwater crisis, we can prevent the crisis from spreading.

WITH YOUR HELP, **REFORM IS POSSIBLE**

The Great Egret

5



Steelhead Release

the geological formation or structure in which such water stands, flows, percolates or otherwise moves" ORS 537.515(5). Groundwater is just that – water in the ground.

Some groundwater in Oregon has been stored underground for many thousands of years and is recharged very slowly, if at all. In other places, groundwater is recharged more rapidly - for example, from each year's melting Cascade mountains snowpack. The amount of water that can be stored in the ground in any given place is highly dependent on geology.

Many parts of Oregon have volcanic geology that often can store large volumes of groundwater. In some areas, geology limits the ability of rocks to store groundwater. Groundwater pumping that exceeds recharge will cause groundwater levels to drop; in areas with little recharge and very old groundwater, this is essentially mining of fossil water.



WHY GROUNDWATER - AND GROUNDWATER PROTECTION - IS CRITICAL FOR OREGON'S ENVIRONMENT AND PEOPLE

roundwater provides a myriad of irreplaceable ecological benefits and is the sole source of drinking water for nearly one in four Oregonians. WaterWatch has a long history of working to ensure that Oregon's management of groundwater preserves the vital role of this resource in maintaining streamflows, springs and wetlands. This work has intensified in recent years as climate change and drought elevate the importance of groundwater as a buffer while simultaneously driving increased demand for groundwater in many parts of Oregon and as aquifer levels have declined from over-pumping.

GROUNDWATER – WHAT IS IT?

Oregon's water code defines groundwater as: "any water, except capillary moisture, beneath the land surface or beneath the bed of any stream, lake, reservoir or other body of surface water within the boundaries of this state, whatever may be

Headwaters area of the Metolius River



Groundwater beneath the land surface



GROUNDWATER-DEPENDENT ECOSYSTEMS.

Groundwater-dependent ecosystems are ecosystems supported by groundwater. Where groundwater meets the surface, it provides cold, clean water vital to springs, wetlands, lakes, and rivers across Oregon. Streamflows in many rivers in Oregon, including the Deschutes, Metolius, Crooked, Klamath, Wood, Donner und Blitzen, and McKenzie, among others, are supported by groundwater inputs.

A stunning example is Metolius Springs, where emerging groundwater creates the headwaters of the Metolius River, which in turn provides an important source of cold water to the Deschutes River. Certain wetlands and lakes also rely on groundwater. For instance, on the Malheur National Wildlife Refuge, groundwater supports wetlands relied upon by migratory waterfowl and an important lake that is home to many shorebirds, a unique type of speckled dace and a rare crayfish.

Not only do many plants, fish and wildlife depend on groundwater after it reaches the surface, some plants survive by tapping groundwater while it's still underground. These plants can provide important riparian and upland habitat.

Cold water refugia are also groundwaterdependent ecosystems critical to rivers and fish. Groundwater flowing into rivers and streams creates pockets of cold water that provide refugia for salmon, steelhead and other aquatic species from high water temperatures that can stress and even be lethal - to fish. Climate

change and increasing drought makes maintaining these cold water refugia more important than ever.

Rare Pilose Crayfish

WaterWatch of Oregon 🛒 7

DRINKING WATER

In addition to its ecological importance, groundwater supports people across Oregon who rely on it for drinking water and domestic needs. **The Oregon Health Authority reports that nearly 23 percent of Oregonians rely solely on a domestic or private well for drinking water, while an estimated 70 percent rely in part on groundwater for drinking.** Reliance on personal domestic wells is especially prevalent in rural Oregon.

IMPACTS OF DECLINING GROUNDWATER LEVELS

When groundwater tables drop too far, typically from over-pumping for irrigation, the groundwater can no longer flow to the surface to support springs, wetlands, lakes and rivers, and the fish and wildlife that rely on them. Groundwater levels can also drop too low for plant roots to reach. Additionally, dropping groundwater levels cause immense problems for people who rely on wells for drinking water, particularly in rural Oregon. Excessive declines can dry up wells and require well deepening, which can be cost prohibitive and allow water quality problems present at deeper levels to impact drinking water quality.

Improving groundwater management in Oregon helps preserve groundwater-dependent ecosystems and drinking water reliability for rural Oregon. This work is increasingly critical in our climate-changed world.

GROUNDWATER MANAGEMENT IN OREGON – THE LAW VS. THE REALITY

Oregon adopted a forward-looking Ground Water Act in 1955, which requires sustainable groundwater management. Unfortunately, Oregon's groundwater management has fallen short of the Act's provisions, resulting in declining groundwater levels caused by overpumping of groundwater in many parts of the state.

In Oregon, "[a]II water within the state from all sources of water supply belongs to the public," and this includes groundwater. However, when Oregon first adopted its water code in 1909, it focused on surface water. The code generally required anyone seeking to use surface water, for example, by diverting water from a river, to first get a water right from the state.

There were few efforts at state management of groundwater after adoption of the 1909 Water Code until 1955, when Oregon adopted its prescient Ground Water Act. Much has changed since 1955 - including 'groundwater' now being one word - but the Act's forwardlooking roadmap for sustainable groundwater management is more important and relevant than ever.

The Act requires that, subject to some exemptions, anyone who wants to use groundwater must get a water permit from the state. Importantly, several types of groundwater use in Oregon are exempt from permit requirements, with the majority of exempt use being domestic use and watering a lawn or noncommercial garden up to one-half acre at a rural residence. To lawfully use groundwater for nonexempt uses, such as irrigation for commercial agriculture, which accounts for the vast majority of groundwater use by volume, a permit is required. According to the 1955 ground water act, Oregon may only issue a new groundwater permit after finding that the use will **"preserve the public welfare, safety and health."** This is where the act excels. It contains several key provisions aimed at ensuring that Oregon manages groundwater sustainably, including requirements that:

 Groundwater pumping only be allowed if the pumping is within the capacity of the resource.

• The state determines and maintains reasonably stable groundwater levels.

 Adequate and safe supplies of Groundwater for human consumption are assured.

Oregon is also required to find that water is actually available for the proposed use before issuing a groundwater permit. By rule, this means that in the relevant aquifer, the cumulative groundwater pumping allowed by all existing water rights cannot exceed the average annual recharge to the groundwater source over the period of record. In other words, Oregon may only issue a new groundwater permit if existing permits are not using up the amount of average annual recharge. Oregon also may not issue a new groundwater permit if the new pumping would further deplete an already overappropriated surface water, such as a stream or river, by depriving it of groundwater that would have otherwise flowed into that surface water.

Unfortunately, Oregon issued too many groundwater permits in many parts of the state, resulting in excessive groundwater pumping that has created crises for communities and ecosystems, including in the Umatilla Basin, Harney Basin, Klamath Basin and elsewhere. Recent analysis by the Oregon Water Resources Department shows that the state is continuing to issue new groundwater permits in many areas where aquifers are in decline. This is antithetical to the Ground Water Act and the practice needs to be reversed. ■

Lower Proxy falls on the McKenzie Rive



URGENT GROUNDWATER GROUNDWATER FOR A FOR A SUSTAINABLE WATER FUTURE

aterWatch works across Oregon in administrative, collaborative, legislative and legal forums to advocate for reforms needed to secure sustainable groundwater

management. WaterWatch has identified five critical and urgent reforms needed to put Oregon on a course to manage groundwater sustainably:

STOP ISSUING PERMITS WITHOUT ADEQUATE INFORMATION.

Even though groundwater permitting standards require Oregon to find that water is available for the use before issuing a new groundwater permit, in practice, where the state lacks enough data to make that determination - which includes much of Oregon - the Water Resources Department issues the permit. This default-to-yes approach has caused and continues to cause huge problems across Oregon. Perhaps most dramatically, in the Harney Basin the agency's default-to-yes approach caused it to over-allocate groundwater by more than 100,000 acre-feet, resulting in groundwater levels plummeting by more than 100 feet in some areas. This harms ecosystems, rural well users, and senior water rights holders. To ensure that groundwater is managed sustainably, when the Water Resources Department lacks data to determine whether or not it has already issued too many groundwater permits, it must default-to-no and deny the new permit.

2 IMMEDIATELY CEASE RACE-TO-THE-BOTTOM APPROACH.

Currently, the Water Resources Department requires a senior groundwater user to drill a well deeper in response to declining well levels caused by pumping by junior groundwater users. This race-to-the-bottom approach clearly does not maintain stable groundwater levels, limit pumping to amounts that can be recharged annually, or assure safe and adequate groundwater for drinking. Requiring well deepening in order to chase water to the bottom of the aquifer in response to excessive pumping is antithetical to Oregon's 1955 Ground Water Act, demonstrating, instead, a failure to maintain stable groundwater levels. It further fails to assure adequate and safe supplies of drinking water, instead causing great hardships and costs to many rural residential well owners. The race-to-the-bottom approach must stop.

3 ENFORCE BASIC GROUNDWATER PERMIT CONDITIONS.

When issuing a new groundwater permit in an area where groundwater levels are declining, the Water Resources Department typically issues the permit with a "decline condition" requiring that groundwater pumping under the permit cease if certain groundwater declines occur. While the agency relies on this condition to justify issuing new permits in areas of concern for groundwater declines, these conditions are not enforced. Enforcing the decline conditions in permits is a critical tool and one that the agency must start utilizing to address known groundwater declines.

REVISIT ANTIQUATED GROUNDWATER PLANS, E.G., LET'S NOT DRY UP SUMMER LAKE!

In parts of Oregon, the Water Resources Department's documented plan is to allow unsustainable groundwater pumping to lower the groundwater level to the point that groundwater cannot flow to springs or support plants that rely on groundwater. The reasoning is that if groundwater can no longer 'escape' to support these groundwater-dependent ecosystems, it could instead be pumped for irrigation. This outdated approach in these decades-old plans must be changed. The most alarming of these may be the plan to allow groundwater pumping in the Fort Rock area to eventually halt groundwater flow at Ana River Springs, which supplies water to Summer Lake. This would have dire consequences for the Summer Lake Wildlife Area, established in 1944 and managed by the Oregon Department of Fish and Wildlife, and the tens of thousands of waterfowl, shorebirds and other waterbirds that inhabit Summer Lake.

5 EXPEDITIOUSLY FIX THE SYSTEM FOR DESIGNATING CRITICAL GROUNDWATER AREA AND REGULATE OVER-PUMPING.

Oregon has the authority to designate areas where groundwater levels are significantly declining and then limit pumping but has not done so for many years. The Water Resources Department is currently updating its rules to govern the process, but the longer this process is drawn out, more water is being pumped unsustainably from our aquifers. The state must get this system up and running - and implement pumping limits in several places in the state - as fast as possible.

CASE STUDIES: Deschutes, Umatilla, Klamath, Harney



WATERWATCH'S GROUNDWATER WORK ACROSS OREGON



STATE GROUNDWATER MANAGEMENT, CAPACITY, AND INVESTMENT: A TRANSFORMATIVE PACKAGE

n addition to the critical reforms WaterWatch advocates to ensure Oregon manages groundwater sustainably, funding and agency capacity are also essential. As a result of past underinvestment in groundwater in many areas of the state, the Water Resources Department lacks adequate data to make sustainable groundwater decisions.

Conducting multiple groundwater studies to better inform water management is a priority recommended action in Oregon's Integrated Water Resources Strategy. The importance and need for these groundwater studies was highlighted in The Oregonian's influential series on the mismanagement of groundwater, "Draining Oregon". The state has 19 river basins, but to date only three United States Geological Service (USGS) groundwater basin studies have been completed (Deschutes, Upper Klamath, and Willamette). Another is nearly complete in the Harney Basin (part of the Malheur Lakes Basin), and an Oregon-Washington effort in the Walla Walla Basin is underway. The Water Resources Department has 12 basins they have identified as priorities for additional basin studies.

Funding for groundwater studies has been anything but steady. In the mid-1990's the legislature provided the Water Resources Department up to \$1.2 million per biennium Egrets on Summer Lake, Oregon

towards joint USGS/OWRD groundwater investigations. These funds fueled completed studies in the Deschutes, Klamath, and Willamette. However, this funding diminished significantly through the 2000's. In the 2009-11 and 2011-13 biennium, the Water Resources Department received zero dollars for groundwater investigations. From 2013-17, the agency received \$375,000 per biennium. It was a start, but clearly inadequate for the task at hand.

In 2019, the tide began to turn. Thanks to the advocacy of WaterWatch and others, the legislature delivered \$1.6 million to the program, which brought with it six staff. In 2021-23, the legislature delivered an additional \$4.38 million and 16 new positions. This funding should allow the state to move forward, from building basin water budgets, to collecting data needed for additional groundwater studies, to beginning USGS/OWRD groundwater investigations in new basins.

After decades of inadequate funding, this transformative package should produce invaluable information critical for sustainable management of our state's groundwater resources. WaterWatch will continue to work tirelessly to ensure that this package benefits ecosystems and people who rely on groundwater.

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DESCHUTES BASIN: Protecting Oregon's crown jewel from groundwater pumping

PROBLEM: In the Deschutes Basin, over a century of water diversions for irrigation have taken a heavy toll on the river. In the early- to mid-1990s, this problem was compounded by burgeoning population growth in Central Oregon. With no water rights available from the river, cities and others began to turn to groundwater. However, in the Deschutes Basin, groundwater is closely linked to flows in the rivers and streams, meaning that underground sources feed streamflows. Increased groundwater pumping meant less water for fish, wildlife and recreation, and harm to Scenic Waterway flows and senior instream water rights.

CONSEQUENCE: Protected streamflows in the Deschutes River basin were being harmed by groundwater pumping.

SOLUTION: Luckily, in addition to being one of Oregon's most beloved rivers, the Deschutes is also one of the state's most protected. Thanks to WaterWatch's work, 93 instream water rights in the basin preserve streamflows for fish and wildlife. And the state Scenic Waterway Act prohibits the allocation of new water rights, including groundwater rights if scenic flows are not being met.

OUR WORK: Given this level of protection for Deschutes River flows and studies dating back to the 1920's that identified the connection to groundwater and surface water, when applications for new groundwater rights exploded in the mid-1990s, WaterWatch challenged every single one as violating the Scenic Waterway Act. This in-thetrenches work set the trajectory for the groundwater management program today that is viewed as a model across Oregon and the West for managing ground and surface water together as a single water source.

WaterWatch's challenges led to attempted end runs in the Oregon Legislature to exempt groundwater from Scenic Waterway Act protections. We successfully staved these off and gained explicit protection of scenic flows from threats of groundwater pumping. Our work also led to Oregon completing a joint basin groundwater study with the U.S. Geological Survey. In the late 1990's preliminary study, results showed that groundwater pumping reduced protected Scenic Waterway flows in the Deschutes Basin. This led to a temporary moratorium on new groundwater rights, and eventually the Deschutes Groundwater Mitigation Program.

While not perfect, this program creates a framework that requires new groundwater pumpers to mitigate the impacts on rivers and streams, which has generally been achieved by leasing or purchasing surface water rights to be legally protected as streamflow. This mitigation water must go instream at or above the zone or stream impacted by new groundwater pumping. The program also sets a cap for new groundwater pumping that cannot be altered unless Scenic Waterway streamflows are maintained.

The Program is not without issues. For example, there is no timing requirement to ensure yearround impacts to streamflows from groundwater pumping are offset by mitigation - which typically relies on water rights that are leased or purchased but only can be used during the irrigation season. The program also does not protect water quality or cold-water springs. And exempt wells (those that do not require a water right) are not required to mitigate for their impacts. Over the past two decades, these and other issues have been highlighted in legislative reports; however, no action has taken place to address them. With the program nearing its cap, these issues will likely come to a head. We expect a state workgroup will be convened to resolve these longstanding issues, as well as new ones that have arisen in the face of declining groundwater levels in select parts of the basin.

UMATILLA BASIN: Protecting critical aquifers from further decline

PROBLEM: Excessive groundwater permitting by Oregon and excessive pumping by irrigators resulted in severe declines in local aquifers of several hundred feet and mining of over 20,000-yearold groundwater. More recently, new proposals to site so-called mega dairies in the area (with water footprints equal to Bend, Oregon) add additional strain and complexity to an already water-scarce area. Attempts were made to use a loophole in water law called the "stockwatering exemption" to pump large amounts of groundwater without any water right to use as drinking water for the cows.

The proposed site for one new dairy, called Lost Valley Farm, had water rights from the Columbia River to irrigate crops to feed the cows and absorb nitrates in the animal waste, but it needed an additional million gallons of water a day for drinking water for the cows (30,000 proposed) and for dairy operations, such as washing barns and running machinery. The dairy proposed to get that water from both shallow (alluvial) and deep (basalt) groundwater aquifers, in part by exploiting an exemption in the permitting laws for stockwatering. As the Water Resources Department told the dairy's owner in a 2016 letter, the proposed stockwatering alone could increase demands on the Ordnance Basalt Critical Groundwater area, where groundwater levels were already declining by about two feet per year, by as much as 50 percent.

The area at the northern end of the Umatilla Basin already has several large dairies, primarily to supply a Tillamook brand processing plant in the nearby town of Boardman. The existing dairies include Threemile Canyon Farms, which, with about 70,000 cows, is one of the largest dairies in the country. **CONSEQUENCE:** For many years, local streams and rivers suffered and some surface water right holders lost the ability to use their water rights. New proposals could draw down already compromised aquifers.

SOLUTION: Solutions are complex in the Umatilla, but one rational solution is to not allow misuse of the stockwatering exemption. Another solution is to stop expecting that all lands below a certain mean sea level will be irrigated in the basin, as many agriculturalists currently do.

OUR WORK: WaterWatch has a long history of working on groundwater issues in the Umatilla Basin in Northeastern Oregon. Most recently, we joined a coalition opposed to new mega dairies in the area because of their potential to strain sensitive water supplies, including groundwater aquifers already designated as being in critical condition because water users are taking out more than the aquifers can give on a long-term basis.

We successfully fought the new dairy's efforts to add unsustainable new groundwater demands to the area and, after a brief period of operation in which it trucked water to the site, the dairy shut down. A new dairy proposed for the site, Easterday Dairy, was put on hold after one of its owners admitted to a criminal fraud scheme but, to the extent that dairy moves forward under the remaining owners, it has agreed not to use the stockwatering exemption to tap critical groundwater supplies in the area. The attention we brought to the issue helped secure that result. Meanwhile, the potential for more mega dairies in the Umatilla Basin continues to pose a threat to water supplies generally in the area.■



KLAMATH BASIN: Klamath groundwater crisis a harbinger of rural Oregon's Future

PROBLEM: Since 2001, Klamath Basin agribusiness - which consumes over 90 percent of developed basin water supplies - has been unable to divert unsustainable amounts of surface water from rivers and streams due to collapsing native fish populations and the belated acknowledgement of the first-in-line priority of Native American water rights sufficient to support harvestable populations of fish. Rather than heed repeated warnings from scientists and others that groundwater subsidies were counterproductive and wasteful - and instead, fund programs to voluntarily bring demand for water into balance with actual supply - our elected leaders chose to fund two decades of groundwater mining. Meanwhile, state enforcement against water cheats remained chronically weak, even as state water regulators greenlit more groundwater development.

CONSEQUENCE: The Klamath Basin has become a harbinger of what is to come elsewhere in rural Oregon if we don't change course. In summer 2021, the Klamath saw hundreds of domestic wells run dry, driven as much by bad policy as by drought. Since 2001, elected officials chose again and again to funnel tens of millions of taxpayer dollars to support unsustainable levels of Klamath groundwater pumping for the benefit of agribusiness interests. Groundwater and surface water are connected in the Klamath, so the results were predictable: dramatic groundwater declines; depleted surface flows; small town water supplies left uncertain; hundreds of individual domestic well users left uncertain if their wells will produce again. and hundreds more uncertain if their home's well will stop producing in the near future.

SOLUTION: We can and should take steps now to stop this disaster. First, our elected leaders must stop subsidizing groundwater mining, which has only made conditions during the next drought worse and sustainable solutions harder to achieve.

Instead, they should fund a basin-wide program to bring demand for water into balance with supplies. This program must include some downsizing of the massive federal Klamath Irrigation Project. The state must immediately fund and prioritize designation of a critical groundwater area in Klamath to allow the effective aroundwater management needed to recover this resource for the benefit of all interests. Beyond this, the federal government should fund and prioritize active groundwater recharge efforts in conjunction with basin-wide water demand reduction. This would involve restoring currently drained former lakebed and wetland areas for the combined purposes of natural water storage and groundwater recharge, fish and wildlife habitat, and water pollution capture in wetland plants. This effort should begin on the publicly owned former lakebeds within the Tule Lake and Lower Klamath national wildlife refuges. If we can make our leaders act, it is possible we can achieve a sustainable future for the Klamath, and for Oregon.

OUR WORK: WaterWatch was the first conservation organization to take Klamath groundwater head on some 20 years ago, successfully petitioning the state to substantially curb new groundwater development. We then helped defeat renewal of an exclusive water pumping subsidy worth \$10 million per year to Klamath agribusiness interests. We strongly supported a federally funded comprehensive water demand reduction program, which passed the Senate but unfortunately was gutted in the House. We continue to advocate for and raise awareness of the need for such a program at all levels of government, and against groundwater mining subsidies, all while fighting in court to restore the Klamath's refuges to fish and wildlife purposes with the complimentary benefits of natural water storage, groundwater recharge, and natural water filtration.■

HARNEY BASIN: Searching for solutions to severe groundwater over-allocation

PROBLEM: The state over-allocated groundwater in Harney Basin by more than 100,000 acre-feet. Much of the water being pumped is "paleo water" that has been underground for many thousands of years. WaterWatch became concerned in 2014 in reviewing the Water Resource Department's public notice of agency actions and seeing an unusually large number of large, new groundwater irrigation permits being issued near Burns and the Malheur National Wildlife Area. Every week the notice announced new groundwater permits that struck us as unsustainable.

We were right to be concerned. Digging into the permit files, we learned that the scientific groundwater reviews stated that the agency could not determine whether it had already issued too many groundwater permits or not. The reviews would often cite the fact that no data existed for the proposed site for the new wells, but that data from five or ten miles away showed precipitous groundwater level declines. But in each case, the agency defaulted-to-yes and proposed to issue the new groundwater right.

CONSEQUENCE: In some parts of the basin, groundwater levels have dropped by more than 100 feet because far more water is being pumped for irrigation than is being recharged. Domestic well owners are being impacted. Impacts to springs are already occurring but the extent of long-term impacts to groundwater-dependent ecosystems and the Malheur National Wildlife Refuge are not yet fully understood. The situation is bad for many irrigators, domestic well owners, and the environment.

SOLUTION: Finding solutions once an arid basin is significantly over-allocated is very challenging. The first was to secure new rules in 2016 that stopped issuance of new groundwater permits (with limited exceptions), coupled with implementation of a USGS-OWRD Groundwater Study. Since then, a Place-Based Planning water collaborative, in which WaterWatch participates, is working to find solutions, including programs to reduce agricultural pumping, protect groundwater dependent ecosystems, increase accountability of groundwater use, and provide assistance to address impacted domestic wells. After the groundwater study is complete, new agency rules must be adopted to address declining groundwater levels in the basin

OUR WORK: Without WaterWatch's 2014 protests to new groundwater permits, the state likely would have continued to issue new groundwater permits in the basin, making matters even worse for the community and for the environment. Unfortunately, while awaiting the USGS-OWRD groundwater study, pumping has increased as a result of development of previously undeveloped existing permits and certain water right transfers. WaterWatch has documented problems with illegal groundwater use in the basin and worked with others to press for better accountability and enforcement. We continue to monitor OWRD's public notice and weigh in on permitting matters. As a participant in the Harney Place-Based Planning process since 2016, WaterWatch is working with others to find solutions to this very difficult problem.



None of this work would be possible without YOUR support.

Please consider donating to WaterWatch today to support our statewide groundwater program and the ongoing work in these basins!

Your gift will fund advocacy to secure smart, sustainable and ecologically appropriate groundwater policies that birds, fish, and people need in a climate changed Oregon.

Your support will help ensure that groundwater makes it to the many iconic rivers across Oregon that rely on groundwater. Your gift will help close loopholes in the law or stop agency practices that allow unsustainable groundwater pumping in many parts of Oregon - pumping that hurts rivers, wetlands, lakes, aquatic species, and many people who rely on groundwater for drinking water.

IN SHORT, YOUR GIFT TODAY WILL MAKE A WORLD OF DIFFERENCE ALL ACROSS THE STATE OF OREGON.

Please support this work by donating today with the enclosed envelope or online at www.waterwatch.org/donate!

BECOME A WATERWATCH

DEEEND



"Oregon's rivers, lakes and wetlands are very important to me and I hope that future generations will be able to experience and enjoy them the way I have during my life. I believe WaterWatch has done more than any other

organization to protect these tremendous public resources and that is why I am leaving a legacy gift to WaterWatch, to support continuation of its great work."

-Bob Hunter, nationally recognized river champion

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