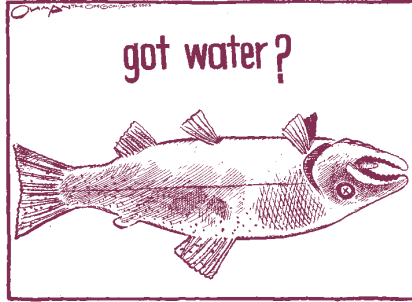


Chapter 11

Water Quantity

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By John DeVoe, Executive Director, WaterWatch of Oregon



Cartoon by Jack Ohman

*"When the well's dry, we know the worth of water."
-Benjamin Franklin, Poor Richard's Almanac*

Rivers define Oregon. The water flowing through Oregon's rivers and streams is one of our state's most precious natural resources. It provides drinking water, supports fish and wildlife, including threatened salmon and steelhead, offers outstanding recreational opportunities and accounts for much of the scenic beauty that makes Oregon such a wonderful place to live. It is hard

to imagine Oregon's beloved rivers not having enough water.

But while some regions of the state are famous for rain, overall the state is very dry. Much of Eastern Oregon is high desert, and in the summer the entire state sees little precipitation. The dry summer months, when rivers naturally run low, is the time when human demand for water, for everything from golf courses to alfalfa fields, skyrockets.

Across our state, rivers and streams are often reduced to a trickle, or dried up completely, with tragic consequences for the fish, wildlife, and people who depend on healthy rivers. Similarly, unsustainable groundwater pumping results in declining water tables in many of Oregon's aquifers.

According to the Oregon Water Resources Department (WRD), every one of our state's 18 river basins suffers from water shortages due to human activities. Although water is a public resource, under state law it is perfectly legal to take the last drops from most of our rivers and streams, and people often do. All over Oregon, many waterways are left with little or no water for endangered salmon and steelhead, fishing and boating, or pollution abatement.

Some of this water is used by cities and some by industry, but the lion's share is used by irrigated agriculture. According to the U.S. Geological Survey (USGS), approximately 80 percent of total water use in Oregon is used for agriculture.

A Broken System

Oregon's water laws are antiquated and a patchwork of special interest amendments. The basic laws were written nearly a century ago, to serve the values of a different era, when our state's population was small and natural resources seemed limitless. Today our population is booming, our natural heritage is rapidly disappearing and, as a society, we ask rivers and water to serve modern values that often conflict with the antiquated water law system.

For example, we continue to give away water from Oregon's rivers, streams and aquifers for free on a "first in time, first in right" basis. The first person to use water from a river acquires the legal right to use that water, under most circumstances, forever. The next in line gets what is left, and so on until there is nothing left to distribute.

Making matters worse, much of the water in Oregon's rivers was given away without any consideration of the public interest and before the needs of fish were seriously considered. Not only do we give away this public resource for free, but for the vast majority of existing water rights, Oregon fails to require measurement or reporting of actual water use.



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The problems facing our waters and the defects in our water code are not new. In 1955, when the state had only issued approximately 25,000 water rights, the Water Resources Committee reported to the Legislature that "permits have been issued for more water than minimum flows will provide on most of Oregon's streams." Despite recognition of the problem, the state continued to give away water and degrade the resource. Today, the Oregon Water Resources Department (WRD) has granted over 80,000 rights to draw water from Oregon rivers and aquifers and continues to approve more. (This number does not include the tens of thousands of so-called "exempt wells" across the state.) As a result of this poor management, rivers and streams across Oregon are "overallocated." This means the state has given away permits for more water than actually exists in many of our rivers and streams.

The Instream Water Rights Act, passed by the Legislature in 1987, provides legal protection for healthy water flows in designated waterways. This law now protects about 1,400 river and stream reaches, but older water rights still have a higher priority for water. For example, a 1920 water right still gets its water first whether or not any is left to satisfy a 1989 instream water right, which would protect fish, wildlife, river recreation, commercial fishing, and public health via cleaner water. According to the 2000 State of Oregon Environment Report, only one fifth of rivers with instream water rights reliably meet those minimum flows during the summer and fall.

Unfortunately, many streams and rivers lack even this basic form of flow protection. The Instream Water Rights Act also contains an avenue for addressing the problem of dry rivers by allowing private water rights to be purchased and transferred back instream. To date, Oregon has not invested the financial resources or political will to pursue these transfers on a large scale and has actively frustrated instream transfers by misinterpreting the law very narrowly.

Rivers in Crisis

In many basins across Oregon, the effects of our antiquated system of laws and poor water management have created a water crisis. For the Klamath and the John Day rivers - to name two - that crisis is already here. Each year entire stretches of these rivers are reduced to a trickle because too much water is taken out for irrigation and development. Fish and people that depend on a healthy river and healthy fisheries suffer accordingly. As proof, look no further than the 2006 closure of most of the Pacific salmon fishing season due to the weakness of Klamath River salmon stocks, affecting coastal communities and commercial fishermen on much of the Oregon coast.

Events in the arid Klamath River basin provide a stark example of what can happen when too much water is taken from our rivers and streams. During the drought of 2001, federal agencies reserved water in Upper Klamath Lake and the Klamath River in order to maintain the minimum water levels that would allow threatened fish species to survive. This touched off a firestorm of controversy, leading many irrigators to attack the federal Endangered Species Act (ESA).

In 2002, the decision was reversed, and flows in the Klamath River were cut dramatically. As a result, an estimated 68,000 adult salmon died during low-flow conditions in September. There

were also juvenile fish kills. We are now seeing the consequences of these and other fish-kills on the Klamath, with low returns of the next generations of salmon, requests by commercial fishermen for emergency relief from the federal government, and ocean fishery closures affecting many coastal Oregon communities.

Scientists with the US Fish and Wildlife Service, the California Department of Fish and Game, and the Oregon Independent Multidisciplinary Science Team have tied this massive fish-kill directly to excessive water diversions. The problem in the Klamath Basin is that we have simply promised too much water to too many interests. The only way to solve the problem is to bring the demand for water back into balance with what the environment can actually sustain.

Unfortunately, the water woes of the Klamath Basin are not unique. In terms of river and stream flows, similar problems occur all over Oregon. In many regions of our state, every year is a drought year for fish and wildlife.

The High Cost of Dry Rivers

Decline of Fish and Wildlife: Chronic low flows in our rivers and streams are a major cause of the decline of salmon, steelhead, and other native fish. These fish need cool, clean water flows for spawning, rearing, and migration. A study of Oregon salmon returns, commissioned by the Legislature in the early 1990s, provided scientific proof of a common sense fact: fish need water.

Low flows during the summer when juvenile salmon are in the river mean low returns of adult salmon years later, while higher flows mean greater adult salmon returns. Study director Daniel Botkin told the Legislature that the main conclusion of the research was "do everything you can to raise minimum flows." This advice has been largely ignored. While there are a number of reasons for the decline of wild salmon in the Northwest, excessive water withdrawals are a major factor that is often overlooked. Low flows also harm many other creatures, from river otters to waterfowl.

Poor Water Quality: Low flows don't harm fish and wildlife alone. Excessive water use has serious implications for water quality as well. Too little water in a river or stream means pollutants are more concentrated. Low flows also mean that it takes longer for rivers to cleanse themselves of these pollutants. Finally, low flows lead to higher water temperatures, which can spark bacteria outbreaks and other problems that are harmful to both fish and humans.

High temperatures are the most common reason why Oregon streams fail to meet clean water standards. Increasing stream flows may be the most effective measure we can take to improve water quality statewide (see Chapter 4, Water Quality).

Economic Liability: Healthy rivers are an economic engine for Oregon. Low water flows are not only an environmental issue, low flows are also an economic liability. As water levels decrease, opportunities for boating, fishing and river related recreation decline. Agricultural diversions can make large sections of some rivers, like the John Day, impassible, and destroy valuable habitat for trout and other sport fish. With tourism and outdoor recreation now accounting for a sizable portion of Oregon's economy, dry rivers are an increasingly serious economic liability. As salmon and other fish populations decline, Oregon's commercial and sport fishing industries (and coastal communities) have lost hundreds of millions of dollars and thousands of jobs (see Chapter 15, The Salmon Crisis.)



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Management Challenges

Despite the value of healthy rivers, Oregon continues to do a poor job when it comes to water conservation and water management. The use of flood irrigation, the most inefficient form of irrigation, actually increased in Oregon between 1995 and 2000. Some municipal systems simply lose 30-40 % and more of the water they divert. Some irrigation districts lose more water to transmission losses than is actually applied to crops. Clearly, Oregon can and should do better. Oregon also lacks very basic water management tools. For example, Oregon does not require most water users to even measure how much water they take from a river or stream.

Add to this mix the likely effects of climate change, and the result is reduced security of water supplies for healthy rivers, fish and for out of stream uses.

On outstanding rivers like the Chetco and the Clackamas, water demands related to population growth, coupled with inadequate and incomplete streamflow protections and poor regional water planning place prized runs of salmon and steelhead at risk. To accommodate growth without destroying our rivers and fisheries, we must find ways to reallocate water among existing out of stream uses rather than force our rivers to satisfy new water demands. We must also recognize conservation of water as a source of supply to satisfy new needs.

Saving Rivers by Saving Water

The state needs effective (and implemented) water conservation and efficiency programs that regulate waste and abuse while rewarding those who conserve. Municipalities and other water users need to treat conservation as a real source of new water supply, following the model of the City of Seattle, which, through aggressive conservation, uses less water now than in 1964 despite adding 400,000 new residents since 1975. Tiered or conservation pricing, system efficiency improvements, public education, and landscaping done in a manner designed to reduce water use can supply water for the future, often at greatly reduced cost, compared to new storage facilities and other approaches that damage rivers and their inhabitants.

Enforce the Laws that Already Exist and Exercise Existing Management Authorities.

Despite having the legal authority to do so, the Oregon Water Resources Department fails to require most water right holders to measure how much they actually take from a river or stream. Requiring those who take water from a river or stream to measure how much they divert would represent a modest but extremely important reform. Oregon also needs stronger enforcement of current laws. Due to funding cuts and a focus on servicing requests to grant new water rights, the WRD's enforcement staff and enforcement capacity remain significantly reduced from prior years.

Return Water to Rivers

Oregon must take action to encourage users to return water to our rivers and restore depleted streams. The state should ease restrictions on water right holders who wish to voluntarily return their water to a river or stream. Oregon should also enact a "river rebate" program whereby we account for the changed water use patterns that accompany changed land use resulting from population growth across the state by rebating a small percentage of water to rivers during any transfer proceeding.

Fill in the Gaps by Establishing Minimum Flows

Oregonians value and need healthy rivers and fish. Oregon should establish basic minimum flow levels on all our rivers and streams. These "survival flows" should be met first, before any water is taken out for other uses. Oregon should also fill in the gaps by establishing instream water rights on streams and rivers that currently lack any form of streamflow protection.

We must also look beyond a focus solely at "minimum" flows. Before the state launches into a costly effort to develop new storage facilities intended to capture winter flows and spring runoff, we must develop scientific information about the peak, flushing and other flow needs of rivers and fish. If we rush to build new storage, we may irreparably damage salmon, steelhead, and other wildlife if we deprive them of the flows they need.

Anticipate Global Warming, But Don't Succumb to a Land Rush Mentality on New Storage Projects

Promoters of new storage projects are using the anticipated effects of global warming to rally support for new water storage projects. Some of the effects of global warming have been modeled to suggest Oregon will see less snowpack in the Cascades, more precipitation falling as rain and earlier spring runoff. While global warming is a very real issue, we should not rush to build storage without rationally analyzing demand, ways to conserve water, and the fiscal and environmental impacts of proposed projects.

Legislative Priorities

- ◆ Institute a basic measurement system for all water diversions and uses.
- ◆ Eliminate the so-called "exempt well" loophole. Oregon should require all water users to apply for a water right and follow the normal process for obtaining a water right. The exempt well loophole in the current law ignores the substantial cumulative impacts tens of thousands of these wells are having on rivers, aquifers and fish across the state.
- ◆ Adequately fund budgets for the agencies that manage our waters, especially to enforce existing laws and regulations, to prevent illegal water use, and to establish necessary instream flows.
- ◆ Create a fee system for water use or for water right administration to provide water managers the tools necessary to manage the resource and to separate state water resource budgets from the General Fund in the legislature.
- ◆ Require that water demands from new growth and development be satisfied through reallocation of existing out-of-stream water uses, water conservation, and efficiencies in distribution rather than by establishing new water rights on already overallocated rivers and streams.
- ◆ Establish a system of periodic review of water rights to harmonize water use with twenty-first century needs and values.
- ◆ Prevent rollbacks of existing fish protection standards or other safeguards in the water laws.

Key Messages

- ◆ Under Oregon law, all the waters of the state belong to the public. Despite this, private users are entitled to divert as much water as their water right allows, even if that means that no water at all remains in a stream. Once granted, a water right lasts forever, unless it is abandoned or forfeited for lack of use. This permanence provides no flexibility to respond to changing demands, such as growing communities or endangered fish.
- ◆ Most water use in Oregon is not measured, much less reported to the state. What gets measured, gets managed. The state lacks one of the most basic tools for enforcing water laws and managing the state's water. Oregon should require measurement and reporting of water use.
- ◆ Obtaining instream water rights is the most effective way to protect the remaining flows in our rivers. These rights should be established on all of Oregon's streams.
- ◆ State agencies (primarily WRD, ODFW and DEQ) need the resources to manage Oregon's water wisely. The Oregon Water Resources Department and other water management agencies need adequate funding to carry out their water management missions.
- ◆ Don't rely on the same thinking that created the problem to solve the problem. Thus, Oregon must begin to focus on the demand side of the water equation rather than continuing to emphasize new storage projects and water supply as a panacea for our water needs. Conservation and efficiency can provide real, cost-effective and environmentally friendly sources of new water to meet new demands. Before Oregon embarks on a costly, environmentally damaging program of building new dams and storage projects, Oregon should embrace water conservation and efficient use of existing supplies.

Experts and Resources

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