

Use it or lose It – a counterproductive aspect of Washington’s water law that hurts conservation efforts

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Key findings

1. Water rights depend on use, and the principle of “use it or lose it” has governed Western water law, meaning when water is unused it is relinquished (taken) by the state. This principle has encouraged little to no improvement in water conservation.
2. Agriculture is constantly developing new technologies to improve water conservation, yet the economics of adoption often discourage new conservation practices. Washington’s policy of permanently taking away unused water rights fundamentally hinders conservation practice by increasing the costs of conservation.
3. There is no value in a water right that a farmer may lose through relinquishment to the state. Washington state policymakers should recognize the actual value of water.
4. To modernize Western water law in a way that encourages conservation, Washington’s water law should allow for an exemption from relinquishment for those growers that adopt water conservation practices. A simple proposal in this legislative session would create this change, Senate Bill 5010.

Introduction

Without irrigation, much of Eastern Washington would be little more than a desert. Despite the arid climate, Eastern Washington is one of the most productive farming regions in the world because of wise management of water resources. Water has defined western culture and policy discussions for over a century.

The doctrine of *prior appropriation* is the foundation of American water law, dictating that the “first in time is the first in right.” Prior appropriation granted the first settlers and users of a water source the first right to that water. All subsequent users of the water were given junior water rights. During shortages, holders of junior rights may be without water because people holding senior (older) water rights must receive their full allotment first.¹

Water appropriation soon allowed for property rights that were constitutionally protected. Water was owned by the state but the rights to use water were granted to individuals or groups.² Water rights were treated as property, which allowed for stability, encouraging long-term financial investments in infrastructure and other economic development relying on water consumption.³

1 “A Survey of the Evolution of Western Water Law in Response to Changing Economic and Public Interest Demands” by Norman K. Johnson and Charles T. DuMars, Legal Counsel, Western States Water Council, Article, University of New Mexico School of Law, Natural Resources Journal, Volume 29, Spring 1989 at http://lawschool.unm.edu/nrj/volumes/29/2/03_johnson_survey.pdf.

2 “Water Resources – Water Rights,” Washington State Department of Ecology at <http://www.ecy.wa.gov/programs/wr/rights/water-right-home.html>.

3 “A Survey of the Evolution of Western Water Law in Response to Changing Economic and Public Interest Demands” by Norman K. Johnson and Charles T. DuMars, Legal Counsel, Western States Water Council, Article, University of New Mexico School of Law, Natural Resources Journal, Volume 29, Spring 1989 at http://lawschool.unm.edu/nrj/volumes/29/2/03_johnson_survey.pdf.

However, the water right was dependent on use. If the water was unused then it was redistributed to more junior rights or taken by the state, creating the policy practice of “use it or lose it”.

The uncertainty for those with junior rights created pressure to tap additional water resources. Dams were expanded throughout the west, providing much-needed water to cities and farmers. However, the principle of “use it or lose it” governing water law, meant there was little to no improvement in water conservation. People holding senior rights either continued normal operations or even expanded operations to protect their right to water.

“Use it or lose it” undermines genuine efforts to improve water conservation.⁴ Thirteen western states are subject to the prior-appropriation doctrine which discourages efforts to conserve water.⁵ When water rights are lost due to non-use it is called “relinquishment.”

In 1969 Washington state changed their water rights law and extended the length of time a holder could decide not to use water without losing his underlying water rights to five years. The time frame is extended if certain exceptions have been made, and 23 qualifying justifications currently exist to extend the timeframe.⁶ Ironically, adoption of conservation practices is not grounds for an extension.

To modernize western water law in a way that encourages conservation, an additional exemption needs to be included. Currently, state law does not protect the property right of individuals who reduce water consumption through better water conservation practices.

4 “Use it or lose it’ not always the case for water right holders” by Bill Neve, Article, *Union Bulletin*, at <https://www.oregon.gov/owrd/LAW/docs/2016%2008%20Neve%20Commentary%20on%20Use%20It%20Or%20Lose%20It.pdf>.

5 “Water Law: An Overview” by David H. Getches, The National Agricultural Law Center, University of Arkansas Division of Agriculture Research and Extension, 3d. ed. 1997 at <http://nationalaglawcenter.org/overview/water-law/>.

6 “Revised Code of Washington 90.14.140 – “Sufficient cause” for nonuse defined – Rights exempted (Effective until June 30, 2019),” effective date May 11, 2001, Washington State Legislature, at <http://app.leg.wa.gov/RCW/default.aspx?cite=90.14.140>.

After five years of non-use the water right is taken by the state in the amount equal to the water conserved if no other exception has been met. Senate Bill 5010, introduced during this legislative session would allow conservation practices to be protected from relinquishment. This legislative memo looks at Washington’s current water relinquishment law and the need for encouraging conservation practices without the risk of farmers and other holders losing their legal property rights.

Overview of current law

In Washington state, water rights are “a right to a *beneficial use* of a reasonable quantity of public water for *beneficial purpose* during a certain period of time occurring at a certain place.”⁷ The Washington Legislature dictated in 1917 that actual ownership of all waters belongs to the public.⁸ The phrase “beneficial use”⁹ is the most critical part of western water law because in water-restricted areas it is up to the state to decide the best use of limited water resources.¹⁰

Recognizing that beneficial uses will change, the Washington legislature enacted relinquishment legislation that returned unused water rights back to the state. The legislature found that water rights not being put to beneficial use, “seriously retards the efficient utilization and administration of the state’s water resources, and impedes the fullest beneficial use thereof.”¹¹ If after five consecutive years a farmer fails to use all or

7 “Landowner’s Guide to Washington Water Rights,” by Washington Rivers Conservancy, Handbook, 2009, at http://www.ecy.wa.gov/programs/wr/rights/Images/pdf/landownerguide_2009-2ndEd.pdf.

8 “Frequently Asked Questions about Water Right Claims,” from Ecology’s Water Resources Program, Washington State Department of Ecology, Publication #97-2022-S&WR, Revised February 2006 at <https://fortress.wa.gov/ecy/publications/documents/972022swr.pdf>.

9 Washington state defines beneficial use includes “domestic water, irrigation, fish, shellfish, game and other aquatic life, municipal, recreation, industrial water, generation of electric power, and navigation.”

10 “Water Appropriation Systems,” at <http://www.undeerc.org/Water/Decision-Support/Water-Law/pdf/Water-Appr-Systems.pdf>.

11 “Chapter 233, Senate Bill No. 175,” effective date March 21, 1967, Session Laws, at <http://leg.wa.gov/CodeReviser/documents/sessionlaw/1967c233.pdf?cite=1967%20c%20233%20C2%A7%2025>.

any part of his water right, the unused amount reverts to the state.

However, in the water law provisions of 1967, Washington state recognized that fluctuations in water use occur. The legislature allowed farmers a five-year grace period before relinquishment was required, relieving the burden of proving a needed water right.

Other factors could extend the grace period beyond five years. These were called “sufficient cause,” and include weather, military service, legal proceedings, and federal law influences that temporarily affected water use. The sufficient cause definition was expanded in 2001 to include more considerations for weather conditions affecting irrigation and short-term crop rotations.¹²

A critical exemption is missing from the list of sufficient causes: conservation. Under current law, adoption of sustainable and water conscious conservation practices can actually eliminate a farmers existing water right equivalent to the amount of water “saved.” Thus, Washington discourages farmers from adopting conservation.

A simple proposal in the 2017 legislative session would remove this disincentive. Senate Bill 5010 encourages water conservation by exempting water rights from relinquishment when it is due to water conservation practices.¹³

Washington water law should protect conservation from relinquishment

Testimony against Senate Bill 5010 argued that conservation practices should not be protected from relinquishment because of the concerns for fish and stream flow levels.¹⁴ However, this view loses sight of the people on Earth today. Repeatedly demanding environmental concern and sustainability no matter the cost, these groups forget that economics is an important guide to avoiding unintended consequences and allocating scarce resources wisely.

Basic economics teach that people are rational and will act in their own self-interest. Water resources are no exception. Adoption of conservation practices must make economic sense for farmers. Water conservation practices must be affordable and the potential of losing water rights makes these practices too costly to adopt in some situations. Despite the high cost and the potential to lose water rights, the agricultural community is increasing their adoption of more expensive water conservation practices. However, many are still hesitating to adopt more intensive conservation practices because they may lose access to water as a result.

SB 5010 adds another “sufficient cause” to the list of exemptions, protecting a water right, “If such a right is used for irrigation or agricultural purposes and is not exercised to the full extent of the right due to the implementation of water conservation or water use efficiency measures.”¹⁵ This policy change would encourage farmers to adopt water conservation without losing their property rights.

As farmers adopt water conservation practices, less water is used. Under current law if no other sufficient cause is met, the saved water is taken by the state after five years. Due to responsible conservation choices made by

12 “Water Rights – Nonuse,” Certification of Enrollment Substitute Senate Bill 5910, Chapter 240, Laws of 2001, effective date May 11, 2001, Washington State Legislature, 57th Legislature, 2001 Regular Session, at <http://lawfilesex.leg.wa.gov/biennium/2001-02/Pdf/Bills/Session%20Laws/Senate/5910-S.SL.pdf?cite=2001%20c%20240%20C2%A7%202>.

13 “Senate Bill Report SB 5010,” as of January 12, 2017, Washington State Legislature, Senate Committee on Agriculture, Water, Trade & Economic Development, at <http://lawfilesex.leg.wa.gov/biennium/2017-18/Pdf/Bill%20Reports/Senate/5010%20SBA%20AWTE%2017.pdf>.

14 “Public Hearing: SB 5010, SB 5005, SB 5002, SB 5003,” Senate Agriculture, Water & Rural Economic Development Committee, January 12, 2017, TVW, at <http://www.tvw.org/watch/?eventID=2017011095>.

15 “Senate Bill 5010,” by Senator Warnick, Pre-filed December 19, 2016, Washington State 65th Legislature, 2017 Regular Session, at <http://lawfilesex.leg.wa.gov/biennium/2017-18/Pdf/Bills/Senate%20Bills/5010.pdf>.

the farmer, at his expense, he has forfeited his water right equivalent to the amount of water saved and will never be able to use the water again. Opponents of conservation as a sufficient cause argue that the farmer no longer needs the water. However, a lot can change in five years and the farmer may need the water for a different crop choice or to expand their operation.

Other States Policies

All western states face various problems because of the “use it or lose it” policy. State officials find it discourages good conservation practices.¹⁶ A few states have attempted other systems, outside of sufficient cause to remove the disincentives associated with use it or lose it.

Nevada created a conservation credit program for rights holders, “for water they save through conservation.” The credit program says, “the water user could be allowed to use the saved water on additional lands or for additional homes.” However, data shows this option is not useful and public understanding of the program is limited.¹⁷

Washington state’s five-year non-use relinquishment law in 1967 was a step in the right direction to allow protection of property rights while still fairly distributing the waters of the state. Other states including Utah have followed Washington’s example.¹⁸

Some people argue expanding the sufficient cause definition overlooks the need for more intensive water reform or other systems like water markets. Though water markets are favorable in theory, the actual implementation in Washington state has been ineffective and recent court decisions

make them impossible to be effective.¹⁹ Before Washington can push farmers and policy towards more complex water reform, it would be best to correct a deeply seated flaw in relinquishment policy by protecting water rights affected by conservation practices.

Costs of not conserving water

Farmers try to make the most of their water resources. Like any business, farmers are faced with costs whether they choose to conserve water or not.

Below is a comparison of water conservation costs for corn and onions. These are scenarios in which the fields were converted to drip irrigation. Drip irrigation is a more precise water conservation technology delivering water through tubes, tapes, or pipe to the individual plants versus flooding the entirety of the field. The high cost of conversion needs to be paid and the farmer’s hope is that the increased yield from his fields will provide enough income to justify the cost.

In the Columbia Basin of Washington, onions are a popular crop but it is sensitive to available water. The Basin has experienced increased adoption of drip irrigation despite the high cost because of the gains in yield. However, in years with bad prices, drip irrigation can create a loss for growers without any savings for water conservation. Farmers do not receive a direct savings for using less water because the majority of water districts impose an annual fee that does not fluctuate based on use.

16 “Water: Use it or lose it in the West,” by Staci Emm, Carol Bishop and Ce’rarra Holton, Fact Sheet-13-39, University of Nevada Cooperative Extension, 2008 at <https://www.unce.unr.edu/publications/files/nr/2013/fs1339.pdf>.

17 Ibid.

18 Ibid.

19 ”Work Session: Water availability/land use/Hirst decision, Skagit Basin Water Mitigation Feasibility Assessment, Columbia River Basin 2016 Long-Term Water Supply/ Demand Forecast,” by Bill Clarke with Washington Realtors, Senate Agriculture, Water & Rural Economic Development Committee, November 15, 2016, TVW, Timemark: 50:25 – 56:12, at <http://www.tvw.org/watch/?eventID=2016111065>.

Onions in the Columbia Basin, WA²⁰	Water Conservation	No Water Conservation
Water Cost	\$50/acre	\$50/acre
Equipment Cost (Flood (Rill) to drip)	\$600/acre (10 year life with annual cost of \$270/acre)	\$0/acre
Irrigation Design Cost	\$30/acre	
Pumping Cost (Electricity)	\$40/acre	\$0/acre
Repair Cost	\$100/acre	\$4/acre
Total Cost	\$1120	\$54
Yield	45 tons/acre	32 tons/acre
Water Efficiency²¹	90-95%	40% (30-60%)

Another example is corn in the Columbia Basin which is typically irrigated via pivot irrigation systems (circles). Pivot systems have a high cost of implementation. Sub-surface drip irrigation (SDI) is even more expensive, which is similar to drip but SDI is installed below the surface. Few if any fields in Washington have adopted this technology. For areas of Washington which still use flood irrigation for corn, the installation of drip irrigation for corn is uneconomical. The chart below is from Texas which compares the value of the three irrigation systems. Comparable research was not available for Washington corn production though the conclusions would be similar.

Many other agricultural practices affect water conservation, including plant breeding, plant monitoring technologies, drones, other irrigation systems, variable rate application, and soil moisture monitoring. The science of agriculture is constantly adding new technologies to this list but as illustrated above, the economics of adoption often discourage new conservation practices. Washington's policy of permanently taking away unused water rights fundamentally hinders conservation practices.

Corn in Texas²²	Water Conservation (Drip) (\$/acre)	Semi – Water Conservation (Pivot – MESA) (\$/acre)	No Water Conservation (Furrow) (\$/acre)
Water Cost (Columbia Basin Water Fee)	\$50	\$50	\$50
Equipment Cost	\$1009.13	\$467.57	\$183.62
Irrigation Design Cost (Included Above)	-	-	-
Pumping Cost (Electricity)	\$216.41	220.81	251.79
Labor Cost (\$14/hr)	\$12.62	\$19.46	\$33.08
Repair Cost	\$4.04	\$4.04	\$3.93
Total Cost	\$1,292.20/acre	\$761.88/acre	\$522.42/acre
Yield	<i>No significant yield differences, because growers tend to overirrigate corn and water is lost.</i>		
Water Use	12.70 in/ac	15.79 in./ac	20.53 in/ac
Water Efficiency²³	97%	78%	60%

How Israel encourages water conservation

Israel is the international leader in agricultural water conservation.²⁰ Farmers in Israel have adopted moisture monitors for trees, automated drip irrigation systems, and pioneered water recirculation and desalination technology.

For example, an avocado orchard can have each tree set up on a monitor to measure how much the trunk fluctuates daily based on water intake and weather. The monitors will then send updates to the operator who could adjust the water application. The water is then cleaned, repeatedly tested to monitor various components, and recirculated to the crop.

Though similar conservation practices are growing in Washington state and the United States, many of the technologies used in Israel are not economically feasible in the U.S. Droughts in Texas and California have pushed more agricultural operations to implement some of these technologies. From 2003 to 2008 investments in irrigation systems experienced a 92 percent increase with approximately \$2.15 billion invested. However, less than 10 percent of irrigated farms used advanced on-farm water management decision tools.²¹

Conservation practices in Israel illustrate how policy incentives achieve results. The Israeli government encourages growers through water pricing, giving water actual value. As the cost of water has increased over the last few decades, water consumption has risen marginally, with more consumption coming from alternative water resources.²²

Washington state policymakers should recognize the actual value of water. This would be partially accomplished by including conservation practices as a sufficient cause. There is no value in a water right that a farmer may lose through relinquishment to the state. Once Washington state protects the long-term property right of farmers to the water, the natural market will encourage adoption of water conservation practices.

Example in Washington – throwing water away

Threat of relinquishment forces farmers to waste water to preserve their water right. Some farmers directly waste water by pouring excess out for no agricultural purpose. This occurs as farmers adopt more efficient irrigation, drought resistant crops, etc. The water they save is then diverted to a pond or immediately applied to empty fields or crops that don't need it – this practice allows the farm to claim use for their full water right and is actually rewarded in the current state system.

The subtler result of the existing rule is indirect water waste that occurs because there is no incentive to conserve. Growers may choose not to adopt technology for water conservation or may not use the data provided from the technology to its full potential. As a result, fields receive more water than they need because doing so protects the farmer's water right.

Both direct and indirect water waste are caused by the state's policy of "use it or lose it." Water conservation should be encouraged by protecting water rights from relinquishment if the water use is reduced due to conservation.

20 "Israel: Innovations overcoming water scarcity," by Ariel Rejwan and Yossi Yaacoby, Business brief No 302, *OECD Observer*, April 2015 at http://oecdobserver.org/news/fullstory.php/aid/4819/Israel:_Innovations_overcoming_water_scarcity.html.

21 "Water Conservation in Irrigated Agriculture: Trends and Challenges in the Face of Emerging Demands," by Glenn D. Schaible and Marcel P. Aillery, *Economic Information Bulletin Number 99*, United States Department of Agriculture Economic Research Service, September 2012, at https://www.ers.usda.gov/webdocs/publications/eib99/30956_eib99.pdf?v=41744.

22 "We're paying 300% more than what we should for water – something has to be done," by Lahav Harkov and Sharon Udasin, Article, *Jerusalem Post*, August 20, 2015 at <http://www.jpost.com/Israel-News/Politics-And-Diplomacy/Were-paying-300-percent-more-than-what-we-should-for-water-something-has-to-be-done-412745>.

Conclusion and recommendation

Current policy in Washington state discourages water conservation. Changing our laws and policies would improve conservation and protect this valuable and limited resource. Senate Bill 5010 would protect water conservation from relinquishment, encouraging farmers to adopt more conservation technology and save water in the process.

To create impactful and effective change, policy considerations promoting conservation should start with ending the negative impacts of the “use it or lose it” principle. Senate Bill 5010 would end some of these negative impacts. Once this frustrating aspect of water law is changed, natural market forces will encourage conservation and more desirable policies, like water markets, will one day be more effective.

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