



# COLORADO RIVER BASIN ENVIRONMENTAL WATER TRANSFERS SCORECARD

MARCH 2017 | LEON SZEPTYCKI AND DAVID PILZ



## Stanford | Water in the West



STANFORD UNIVERSITY  
THE BILL LANE CENTER  
FOR THE AMERICAN WEST

WALTON FAMILY  
FOUNDATION

**Leon Szeptycki** is Professor of the Practice at the Stanford Woods Institute and Executive Director of Water in the West. **David Pilz** is a Director of AMP Insights in Bend, Oregon.

## ACKNOWLEDGEMENTS

We are grateful to all of the outside experts who have reviewed and commented on this report and the work that underlies it. This project has benefitted immensely from the input of outside experts at a variety of stages. The following people reviewed and commented on the methodology report:

**Dustin Garrick**, Oxford University  
**Mary Kelly**, Culp and Kelly, P.C.  
**Gary Libecap**, University of California, Santa Barbara  
**Season Martin**, The Nature Conservancy  
**Jamie Morin**, Mentor Law Group  
**Laura Ziemer**, Trout Unlimited

### The following reviewed and commented on the scoring of individual states:

**Paul Burnett**, Trout Unlimited  
**Peter Culp**, Culp and Kelly, P.C.  
**Jamie Morin**, Mentor Law Group  
**Adrian Oglesby**, University of New Mexico  
**Zach Smith**, Colorado Water Trust  
**Cory Toye**, Trout Unlimited

### In addition, the following reviewed and commented on the final report and scoring results:

**Edalin Koziol**, The Nature Conservancy  
**Jamie Morin**, Mentor Law Group  
**Laura Ziemer**, Trout Unlimited

**This project was funded through a grant from the Walton Family Foundation.**

**Recommended Citation:** Szeptycki, L. & Pilz, D. (2017). *Colorado River Basin Environmental Water Transfers Scorecard*. Stanford Woods Institute for the Environment.

## ABOUT WATER IN THE WEST

Water in the West is a partnership of the faculty, staff and students of the Stanford Woods Institute for the Environment and the Bill Lane Center for the American West. The mission of Water in the West is to design, articulate, and advance sustainable water management for the people and environment of the West. Linking ideas to action, we accomplish our mission through cutting-edge research, creative problem solving, collaboration with decision-makers and opinion leaders, effective public communications and hands-on education of students. To learn more visit [waterinthewest.stanford.edu](http://waterinthewest.stanford.edu).



# TABLE OF CONTENTS

Introduction ..... 2

Colorado..... 8

California..... 10

New Mexico..... 12

Nevada ..... 14

Wyoming ..... 16

Utah ..... 18

Arizona ..... 20



Horseshoe Bend, Arizona

# INTRODUCTION

The Colorado River and its tributaries support more than 35 million people and irrigate more than four million acres of farmland. At the same time, the river supports 30 fish species found nowhere else on earth and inspires millions of visitors and residents alike with its sheer beauty. However, growing water scarcity caused by increased water use, hydrologic variability and climate change loom over all the Colorado River provides.

## BACKGROUND

In the American West, dams, large-scale irrigation developments and canals hundreds of miles long all have fueled growth in cities and agriculture. The current challenges facing the Colorado River Basin, however, cannot be overcome by infrastructure. Indeed, no one solution will provide the basin a path forward. Water supplies are fully allocated. Potential gains from increasing water use efficiency, while significant, will not provide the entire answer. Nor will expensive technological solutions, like desalination and water reuse. Most scientists predict long-term declines in water availability and potentially more severe droughts. Facing these challenges, the Colorado Basin states must find flexible, fair ways to reallocate water supplies between uses, particularly during times of shortage.<sup>1</sup>

This report focuses on one set of tools for reallocating water to one specific area of water need: water for rivers, streams, wetlands and the aquatic species that depend on them. As the basin's water resources were developed, streamflow and other environmental uses—water for fish and wildlife, recreation, water quality and scenic beauty—were not protected. More recently however, those uses have become critical issues in water management. Over much of the last 30 years, water users have had to adapt to new requirements imposed by federal and state environmental laws, such as the Clean Water Act and the Endangered Species Act. Over this time frame, a non-regulatory approach has developed, one that allows water

rights holders to lease, sell or otherwise voluntarily devote some or all of their water rights to environmental uses. These environmental water rights transfers, which have only become legally possible in the last thirty years, are being used with increasing frequency in many western states. Such transfers provide a flexible, voluntary way of allocating water for the environment. These transactions can also be an important part of water markets that serve multiple objectives and make water supply more flexible and secure for cities and farms. Transferring water to streamflows upstream, for example, can provide more reliable inflows for reservoirs downstream.

All transfers of water rights, whether between irrigators, from agricultural to urban use or from human use to the environment, are governed by laws and regulations unique to each state. Most such transfers must be approved by a state agency or court. The functioning of water markets is in part determined by these laws and regulations and the level of effort required in the approval process. The laws and policies of the various western states vary considerably with respect to the approval of environmental water transfers. States across the West have also seen a wide range of transfer activity, from no transactions to in excess of a thousand (Figure 1).

In general, states in the Colorado Basin have not implemented or approved as many environmental transfers as states in the Pacific Northwest, particularly Oregon and Washington (see Figure 1). This is due to a variety of factors, including the

---

1 The most comprehensive assessment of Colorado River Basin water supply challenges and options can be found in Bureau of Reclamation, *Colorado River Basin Supply and Demand Study Report* (2012).

availability of funding for environmental transfers. State laws and policies, however, establish the basic framework for transfers and how much work it will take to get them approved by the state.<sup>2</sup> They represent the enabling conditions that establish what deals are possible if funding is available.

## ENVIRONMENTAL WATER RIGHTS TRANSFERS

Throughout this report we primarily use the term “**environmental water rights transfers**.” We define this to mean when a water rights holder devotes all or some portion of an existing water right to an environmental use, such as enhancing stream flow. An alternative term that has been widely used is environmental water “transaction” which has been defined as “any agreement (or set of related agreements) by which a water right holder, contractor or user commits to a change in their water use and/or water right leading to legal or de facto protection of additional water in a waterway or water body to serve environmental purposes.”<sup>3</sup> We also use the terms “instream water rights” and “instream transfers” because water rights holders typically leave water dedicated to various environmental uses instream, rather than diverting it, although some transfers can involve allocation of reservoir storage.

State laws can influence the availability of such transactions in at least two ways. First, some deals involve formal changes in water rights, which are subject to approval by a state agency or court. Second, state law impacts less formal deals because not using some portion of a water right for its designated beneficial use (such as irrigation) or conserving water can risk legal reductions in the relevant water right.

The Colorado River Basin has seen some water transfers, and the importance of water markets, including environmental transfers, is likely to increase in coming years. Markets can play a role in drought resilience by increasing the ability to shift

water around during times of scarcity. They can also increase flexibility for irrigators and allow them to turn the value of their water right into revenue. The legal enabling conditions will ultimately determine the scope of such markets as well as the ability to enhance streamflows through market mechanisms.

This report analyzes the extent and effectiveness of laws and policies in the seven Colorado River Basin states<sup>4</sup> to create dedicated water rights for instream and other environmental uses to benefit fish and wildlife habitat and recreation. The goals are both to assess the basin states and also to describe needed progress in each state to promote environmental water transfers.

## THE ENVIRONMENTAL WATER TRANSFER SCORECARD

The focus of this report is state law and policy. Although the federal government plays a critical role in managing the Colorado River’s water, the allocation of water among the basin’s states is not a direct driver of environmental water transfers and is not discussed in detail here. Similarly, the availability of funding to pay for environmental water is a critical issue, but is also not the emphasis of this report. Rather, this report concentrates on the separate state laws and regulations allowing for the creation of formal environmental water rights through transfers, leases, dedications and other means, and for the legal protection of that water. To put it into a single question, from the perspective of an individual or organization that wants to use environmental water rights to help restore aquatic ecosystems in the basin, how easy is it to create environmental water rights *and* protect them from interference by other existing and new water uses?

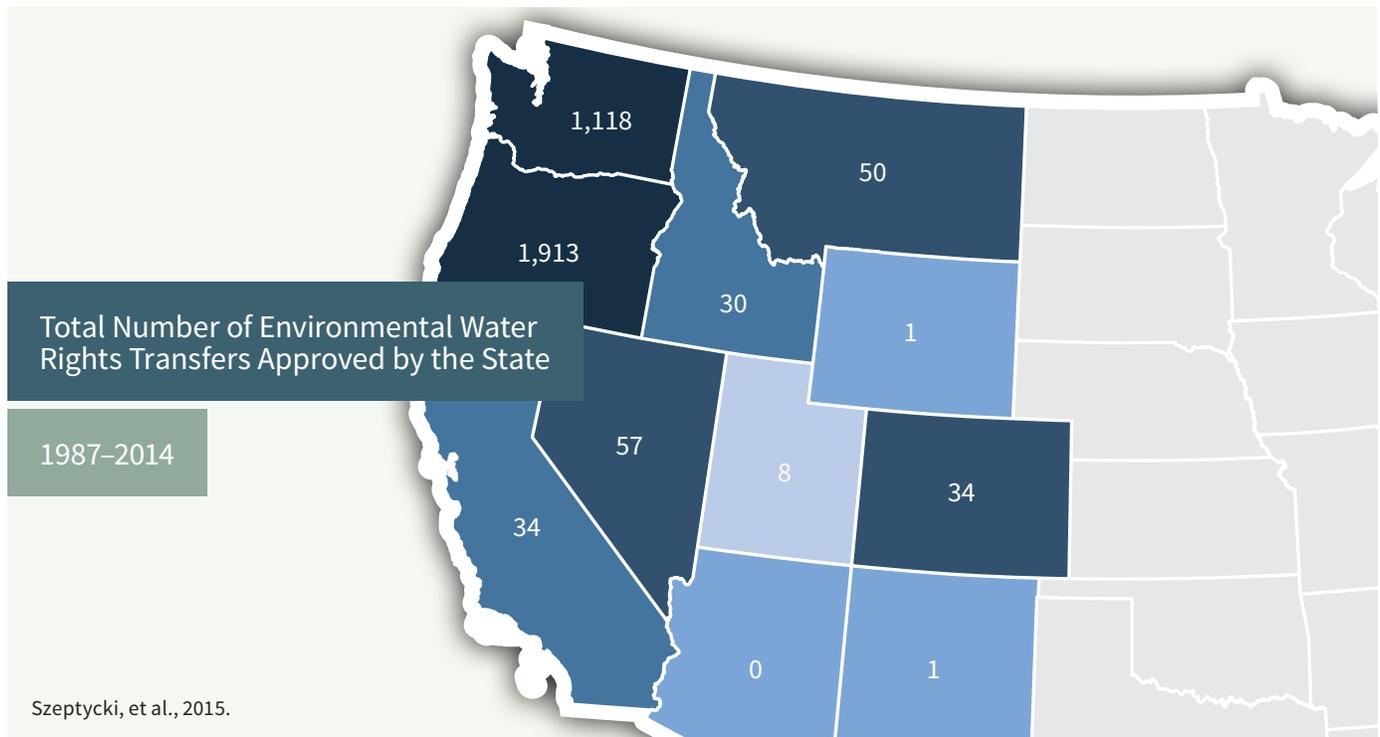
The analysis uses a numerical scoring framework to address this question. Although reducing something as complex as legal and policy analysis to a scoring algorithm risks oversimplifying, it nonetheless provides a convenient and meaningful way to compare the basin states based on a common set of criteria. Every attempt has been made to reduce subjectivity in the scoring process, but the scoring admittedly contains a number of assumptions about the best legal and policy mechanisms for creating and protecting environmental water rights based on review of relevant literature, consultation with experts in western law and policy, and the authors’ own experiences. More

2 Culp, P., R. Glennon and G. Libecap, *Shopping for Water: How the Markets Can Mitigate Shortages in the American West*. Washington DC: Island Press, 2014.

3 Aylward, B. 2013, editor. *Environmental Water Transactions: A Practitioner’s Handbook*. Bend, OR: *Ecosystem Economics*.

4 Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming

**Figure 1. Fewer transactions are occurring in the Colorado River Basin**



importantly, running each state through the scoring framework provides important insights into what the state is doing well, and ways the state could improve its framework for approving and enforcing environmental water transfers.

In addition to overall scores for each basin state, the report provides a short summary of the status of environmental water transfer policy and activity in each state. This includes an account of both barriers and success stories and, most importantly, an evaluation of the most feasible and important legal and policy changes the state could make in the short-term to better facilitate environmental transfers. These policy priorities are based both on our analysis of each state's laws and input from experts.

## ASSESSMENT AND SCORING METHODOLOGY

The first step in this project was to develop a framework for analyzing and scoring each state's laws and policies. To do so, we reviewed the recent literature on water markets and environmental water transfers. The purpose of our review was to assess whether there was a consensus among scholars, lawyers and other policy experts regarding the importance of specific elements of a legal framework to the availability and use of environmental water transfers. As a result of

this review, we focused our scoring on four issues that were roundly considered of high importance: the nature of the legal authorization of environmental transfers, protection of instream flow rights, the scope of environmental water rights and transfers and the process for approving environmental transfers and rights.

**Legal Authorization:** The scoring under this issue has to do with the nature of the legal authorization for environmental transfers and rights and whether the legal foundation is both clear and secure. Questions include whether the authorization is by statute or other source of law, and whether the authorization of environmental rights is in any way restricted.

**Protection of Environmental Water Rights:** The scoring here focuses on the legal and practical protection for water left instream through environmental transfers. Some of the questions relate to water rights generally, such as the extent to which the state regulates impacts of groundwater pumping on streamflow. Other questions focus on whether environmental water rights benefit from the same enforcement tools as other water rights.

**Scope of Environmental Water Rights:** This group of questions assessed whether environmental water rights are subject to limitations that do not apply to other water

rights and whether the state has financial resources and personnel dedicated to protecting streamflow and facilitating environmental water transfers.

#### **Process for Approving Environmental Water Transfers:**

This section compares the administrative and judicial processes needed to approve environmental water transfers among the various states and assesses whether the level of review is well tailored to the nature of the transfer. States score higher, for example, if they have streamlined procedures for approving very short-term transfers or rights.

For each of these issues, we developed a series of questions with mostly binary yes/no options that assess whether the state's laws and policies have certain key attributes. Each of the four areas is worth 40 points, for a potential maximum "perfect" score of 160 points. States gained points for rules that facilitated environmental water transfers and protected environmental water rights and lost points for rules that impeded such transfers or limited such rights. The information needed to answer each question was determined by researching relevant laws and policies for each state and consulting with experts in that state. The full methodology and support for the scoring system as well as the scoring for each state are all available at <http://stanford.io/2krFwCu>.

## **GOALS**

Our main goal in producing this report is to promote progress on one of the areas of challenge within the Colorado River Basin. The assumption of this report is that the shared goals of states and water users in the basin include increasing water supply reliability and drought resilience, while at the same time restoring aquatic ecosystems, including in the headwater systems in many basin states. Accomplishing these goals will require a variety of strategies and policy innovations. Environmental water transfers and water markets more generally have the potential to make these goals achievable in a more flexible manner. This report presents a current snapshot of the ease and effectiveness of creating and protecting environmental water rights in various areas within the basin states.

We have integrated what has been learned about the most effective laws and policies for facilitating environmental water transfers and assessed how widely those tools have been adopted by basin states. Our hope is that this information can promote progress on these laws and policies in coming years and give states the opportunity to make informed choices as they advance their laws to promote environmental water markets. The scorecard framework also provides a way to

track progress in each state and in the basin as a whole. Future versions of this analysis, we hope, will be able to highlight progress and assess the effectiveness of recently or newly adopted changes in law and policy.

By highlighting the existing and, in future iterations, the changing status of laws and policies supporting environmental water rights, this report is meant to provide information critical for expanding the effectiveness of these tools. Ensuring provision of water for environmental uses is critical to preserving the wide range of high value aquatic ecosystems in the Colorado Basin states. The availability of environmental water transfers, and water markets generally, are not a cure-all for the basin's water management challenges, but increasing their use has the potential to increase the flexibility and resilience of the water supply.

## **SUMMARY OF RESULTS**

Each Colorado River Basin state was scored pursuant to our framework of four issues (legal authorization, protection of instream flows, scope of environmental water rights and transfers and the process for approving environmental transfers and rights) with a potential maximum score of 160 overall (40 for each issue). As a point of comparison, we also applied the scoring framework to Oregon. Oregon has approved a large number of environmental water rights transfers and is generally seen as having laws and policies that promote a wide range of transaction types. It is useful to compare the current legal and policy landscape in the Colorado River Basin to a state outside the region with an established history of environmental transactions.

The overall scoring appears in Table 1. A more detailed breakdown of the scoring appears in Figure 2.

**Table 1. Overall Scoring (Out of 160)**

Colorado	116
California	109
New Mexico	90
Nevada	75
Wyoming	73
Utah	71
Arizona	62

Law and policy alone are not the only enabling conditions for environmental water transactions. An active environmental water market requires funding, agency staff who have the resources to pursue and approve environmental water deals, a supportive political environment and water rights holders who are willing to transfer water to the environment. The lack of all of these enabling conditions can present a chicken-and-egg dilemma: are better funding and more agency resources needed to push deals so the law can adapt or are better rules needed to attract funding and other resources?

Oregon illustrates the importance of both of these issues. The state benefits from laws that authorize a broad range of environmental water transactions with varying levels of review depending on the duration of the transfer of water to environmental purposes (with relatively short review times for short-term transfers). It also has robust resources with staff working to both facilitate deals and to review and approve transfers once deals are put together (which enhanced its overall scorecard total). There are also a number of sources of funding to pay for transfers, including the Columbia Basin Water Transaction Program, a stream of funding that serves as part of the Bonneville Power Administrations Endangered Species Act Compliance. Without its set of laws and policies, the state and other parties likely would not have invested in environmental transactions in Oregon; without funding and personnel, those laws and policies may have remained unused.

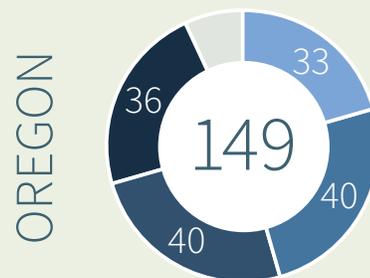
The Oregon example illustrates that an effective legal framework along with funding for both agency resources and transactions themselves are needed for a robust environmental water market. The scorecard shows that the effective enabling conditions do not exist in the legal systems of most of the Colorado River Basin states. Colorado and California are the only states with relatively robust and explicit frameworks for authorizing and approving a range of environmental water transfers. The remaining states all have major gaps in their water transfer schemes that make transfers to instream use either difficult or uncertain. The only state in this group that has seen more ten environmental transfers is Nevada, where most of the approved transfers are a result of the framework created by the Truckee/Carson water rights settlement.

Yet there are reasons to be optimistic about the future of environmental transfers in the basin. In every basin state, conservation organizations and state agencies are working to restore stream flows and to reach voluntary deals with irrigators and other water users. Moreover, in each state we have identified concrete, incremental steps that would further clarify the law and open the door to additional transactions. In many respects,

## Oregon Score

We have included a score for Oregon as a bar against which to measure the Colorado Basin states. Oregon is widely regarded as a leader in the field of environmental water transfers. Through 2014, the state had approved almost 2,000 transfers of various sorts, including permanent transfers and long-term leases, short-term (less than five years) leases, and allocations of conserved water. This is due to a variety of conditions that promote and facilitate such deals, including a community of water trusts and other conservation groups, staffing levels and commitment at state agencies, and funding sources. The state also has laws on the books that allow for environmental water transfers through a range of potential tools, and these laws are an important part of the enabling conditions for environmental transfers in the state. Using Oregon allows us to see how states in the Colorado Basin compare to one of the most successful states in this field. Applying our scoring system, Oregon received 149 points out of an available 160, well above the highest rated state in the Colorado Basin (Colorado with 116).

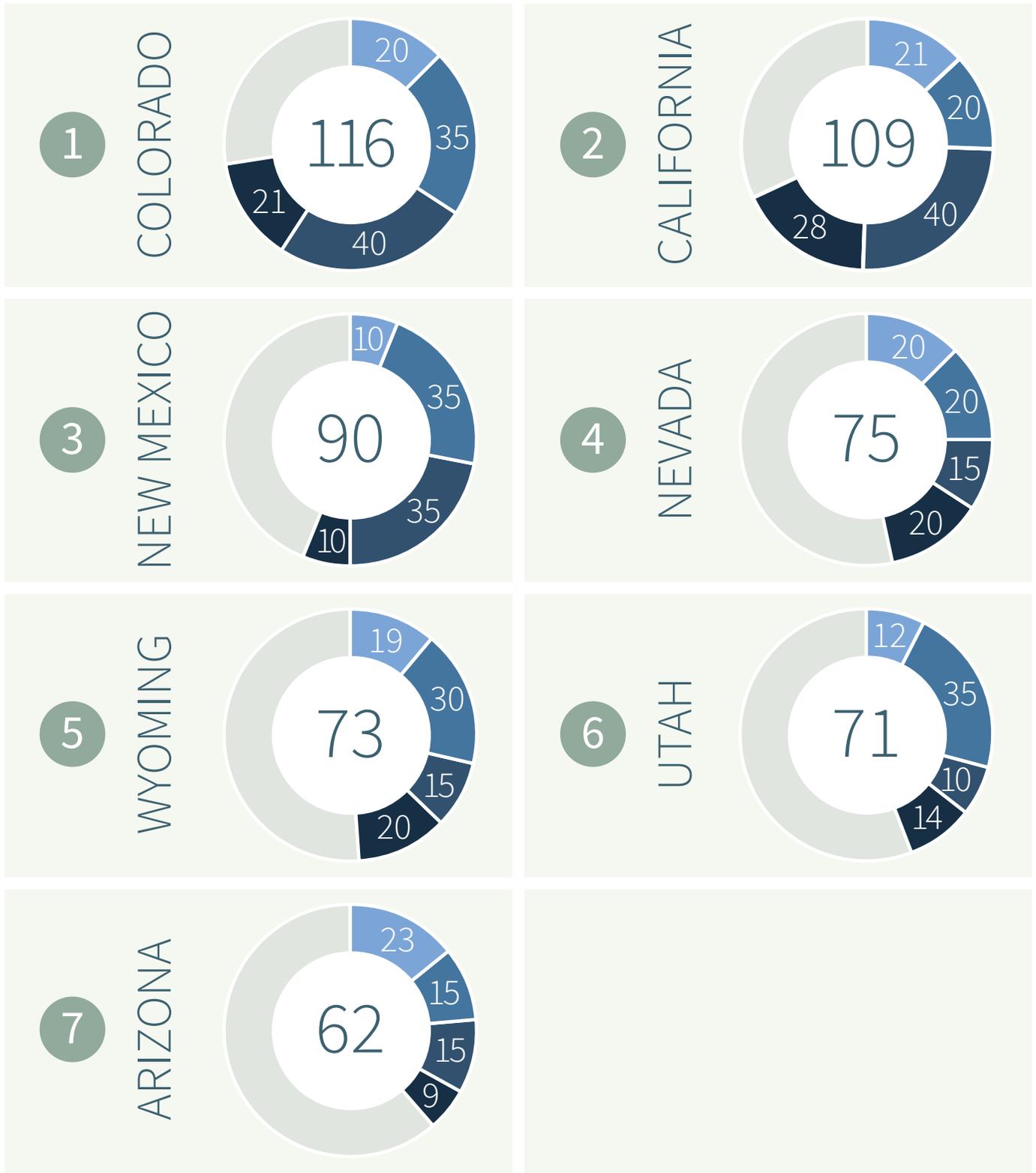
- Clear Legal Authorization
- Protection of Environmental Water Rights
- Scope of Environmental Water Rights
- Process for Approving Environmental Water Transfers



the states in the Colorado River Basin are poised to follow in the footsteps of states in the Columbia Basin. States like Oregon, Washington and Montana did not pass complete and robust legal frameworks for environmental water transactions in one statute. Rather, these states built up their laws and water transfer “toolkits” one step at a time. Each of the Colorado River Basin states is making progress on this same path.

Figure 2. Overall Scoring

■ Clear Legal Authorization      ■ Protection of Environmental Water Rights  
■ Scope of Environmental Water Rights      ■ Process for Approving Environmental Water Transfers



# COLORADO

OVERALL SCORE

BASIN RANK

116

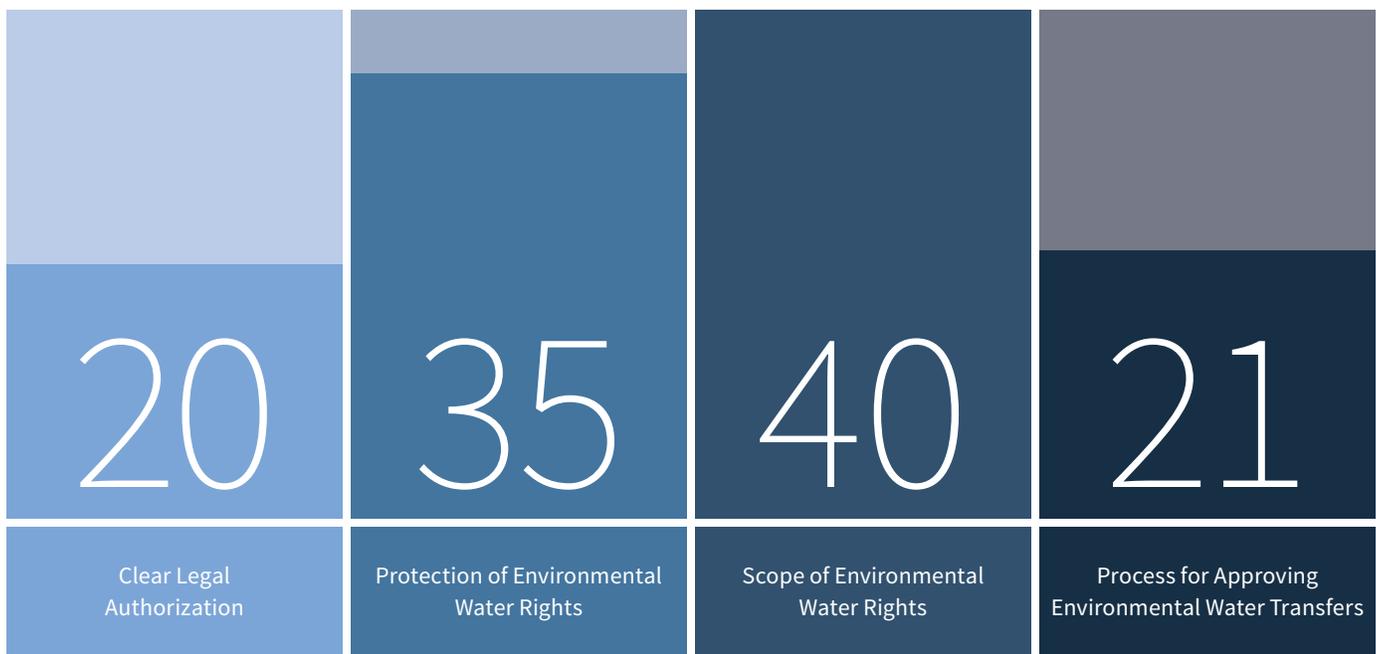
1

Colorado received 116 out of an available 160 points for its laws and policies on environmental water transfers. This is the highest score of any state in the basin, and reflects that Colorado, along with California, has the most detailed and evolved legal system in the basin for recognizing and approving transfers of water and water rights to environmental purposes. Colorado's score lags behind that of the out-of-basin example, Oregon, in part because it has a relatively restricted option available for short-term leases of water rights for environmental uses and lacks clear authorization for the transferability of water saved through conservation.

## SUMMARY OF LAWS AND POLICIES

Colorado statute recognizes a broad set of environmental purposes as beneficial uses and sets up clear and detailed procedures for environmental water rights transfers. However, unlike most states, Colorado has an extra level of review, because its water rights are overseen by a system of Water Courts. Most formal transfers of water rights, either permanent or temporary, must first be approved by the Colorado Water Conservation Board (CWCB) and then by the Water Court as part of Colorado's adjudicated system of water rights. Although

these procedures can result in a review process that is both longer and more expensive than in most states, the process is clear and well understood by state agencies, conservation groups and others working on environmental transfers. NGOs in the state (including The Nature Conservancy, Trout Unlimited and the Colorado Water Trust) and the instream flow program staff at CWCB have gained considerable experience in recent years, becoming more adept at processing transactions through this system. Colorado has processed approximately 35 voluntary



transfers or leases of water rights to environmental purposes of over that last 25 years<sup>5</sup>, far more than every other basin state other than California.

Environmental water rights in Colorado also benefit from better enforcement than in many states. Because water rights in Colorado are adjudicated and administered by the Water Courts, the system for enforcing them is highly evolved. The more demanding application process produces a clearer definition of the environmental water right and analysis of its relationship to other water rights on the affected water body. Water rights are enforced in part by a network of water commissioners deployed on the ground, and environmental water rights should benefit from this enforcement system. Finally, Colorado regulates the pumping of groundwater that is hydrologically connected to surface water as part of the surface water system so that new wells that might have an effect on existing surface water rights must mitigate their impacts on stream flows.

#### AREAS FOR FURTHER POLICY DEVELOPMENT

One reason that Colorado may lag behind Pacific Northwest states in environmental transfers is that permanent transfers and long-term leases must be approved by both the CWCB and the Water Court, making the process more expensive and time consuming. The Water Court adjudication process provides the framework for the administration of all water rights in Colorado and is not readily subject to change. However, there are two key areas where transaction approval procedures could be streamlined in order to promote more transfers of water to environmental purposes in Colorado.

First, although Colorado law currently provides less demanding procedures for short-term leases of water rights for the environment, the parameters of these transactions

limit their usefulness.<sup>6</sup> Temporary leases are subject to administrative approval of CWCB and the State Engineer, rather than the judicial process of the Water Court. Such leases, however, may be exercised at most for three years during any 10-year period, and for no longer than 120 days in one year. In addition, they are only allowed in order to meet decreed instream flow rights that are short and may not be renewed unless the agreement was not exercised at all during the initial 10-year period.<sup>7</sup> The State Engineer has approved only eight<sup>8</sup> of these leases since the statute authorizing them passed in 2003. Other states (predominantly outside of the Colorado Basin) provide for much more flexible temporary leases for fixed periods (typically less than five years). In Washington and Oregon, these streamlined, short-term leases have proven extremely useful and represent the bulk of environmental transfers in those states. Allowing CWCB and SEO to review and approve straightforward short-term leases (of up to five years) would create a new, very useful option for environmental water markets in Colorado.

Second, Colorado does not have a specific statute dealing with the allocation of water freed up by changes in irrigation or other farming practices that reduce water use. Water rights holders thus risk losing control over any water they save. Farms, ranches and irrigation districts that wish to devote water savings to the environment or other users downstream of the original point of diversion must use the default Water Court procedure for transferring the conserved portion of their water right. Creating a streamlined procedure and default formula for the transfer to other uses of water freed up by irrigation efficiencies (both between the point of diversion and return flows and downstream of the point of return flows) would incentivize more transfers to environmental benefit of water saved through conservation and efficiency among irrigators.

---

5 CWCB “Instream Flow Program” <http://cwcb.state.co.us/environment/instream-flow-program/Pages/main.aspx>

6 Colo. Rev. Stat. § 37-83-105.

7 *Id.* § 105(2)(a) (2013).

8 Colorado Instream Flow Program, <http://cwcb.state.co.us/environment/instream-flow-program/Pages/TemporaryLoansWaterRightsInstreamFlows.aspx>.

OVERALL SCORE	BASIN RANK
109	2

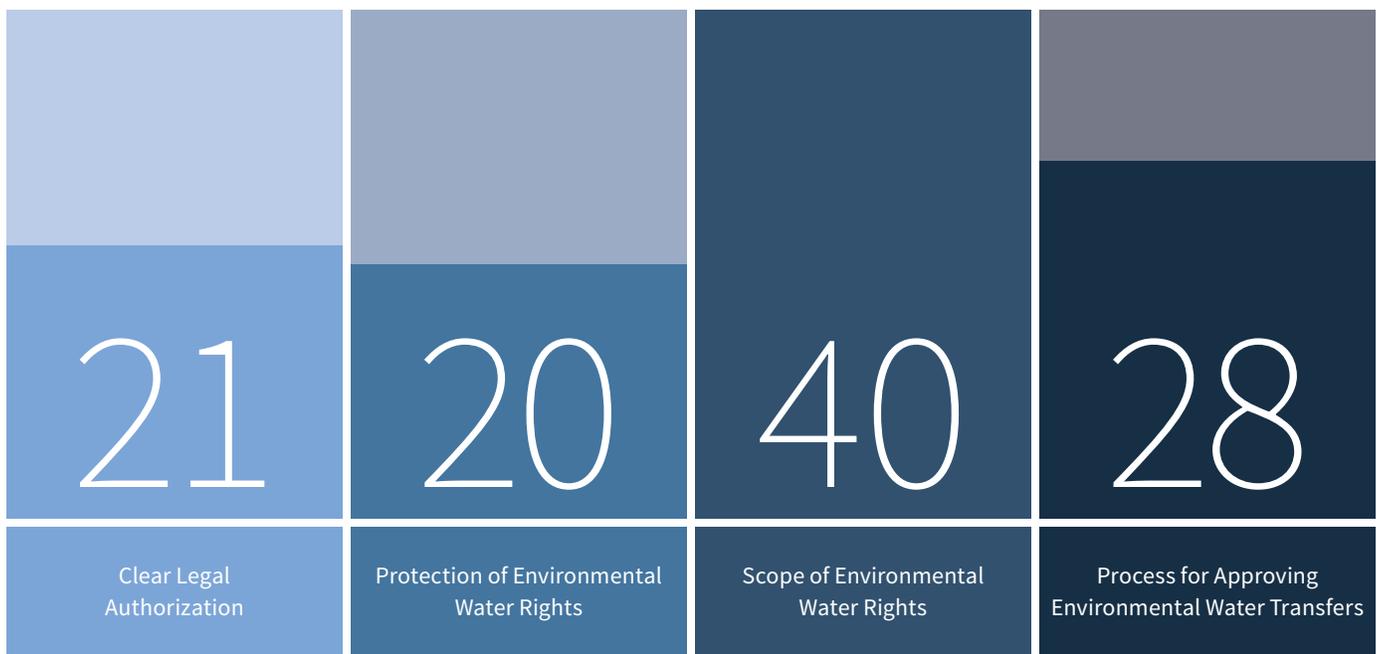
# CALIFORNIA

California recognizes a variety of environmental purposes as beneficial uses and has a well detailed set of statutes governing the transfer of existing rights to those purposes. Its score of 109 out of 160 is second only to the state of Colorado in the basin and reflects the overall well developed status of its laws regarding environmental water transfers. Environmental transfer activity in California has suffered in the past from both uncertainty about approval requirements and slow approval times, problems that the State Water Resources Control Board have been addressing. In addition, many basins in the state lack effective basin-scale data and mechanisms for enforcing water rights, including environmental water rights.

## SUMMARY OF LAWS AND POLICIES

California has a clear and detailed statutory regime for changes of water rights to environmental uses that provides a great degree of flexibility for water rights holders. Section 1707 of the California Water Code allows appropriative and riparian water rights holders to petition the State Water

Resources Control Board (SWRCB) to change the beneficial use or any other aspect of their right “for purposes of preserving or enhancing wetlands habitat, fish and wildlife resources, or recreation in, or on, the water.” Section 1707 provides that such transfers be processed under the statutory regime for all water



rights changes.<sup>9</sup> Environmental transfers are effectively treated the same as other water rights changes. The legal regime is therefore both clear and broad. In addition, the legal regime is quite flexible – it allows for a wide range of transaction types. Water rights holders can simply change all or a portion of their right to environmental purposes, with the option of petitioning to change the right back again in the future. They can also transfer their right to a conservation group or state agency. Section 1707 and related statutes also allow for permanent, long-term, temporary and emergency changes to water rights.

State agencies have recently emphasized the importance of environmental water transfers as a tool to better manage water, prepare for drought and restore endangered and threatened species.<sup>10</sup> These are not mere policy statements – the state has backed them up with funding. Proposition 1, the water related bond passed by the legislature and voters in 2014, includes substantial funding for improving environmental flows, including dedicating \$200 million specifically targeted for stream flow enhancements.

California received a lower score than Colorado and Oregon in part due to issues generally applicable to water management in the state. Surface water rights (including for instream use) are vulnerable to groundwater withdrawals due to the separate regulation of groundwater and surface water in California. In addition, in terms of the data framework and staff availability, the state's process for enforcing surface water rights is not as evolved as in Colorado.

## AREAS FOR FURTHER POLICY DEVELOPMENT

Despite a sound statutory structure, many conservation groups perceive Section 1707 as being cumbersome. Indeed, compared to Oregon and Washington, environmental transfers have been sparsely used in California – with fewer than 40 transfers since Section 1707 passed in 1991.<sup>11</sup> This understates the extent of environmental transfers in California, because many water transfers in California involve shifts in water allocation within the State Water Project and the

Central Valley Project, and therefore do not trigger Section 1707 or any change of water right under state law.<sup>12</sup> However, some conservation groups have identified uncertainties in a variety of application requirements, including uncertainty about California Environmental Quality Act procedures and requirements for proving consumptive use as a source of delay and cost, but have praised the SWRCB for recent clarifications of these requirements.<sup>13</sup> The SWRCB should be proactive in ensuring that application requirements are clear and that change approval processing times are improving.

There is one relatively small quirk in the statute that may be having a disproportionate effect on transaction activity. Although California Water Code section 1725 includes a streamlined process for “temporary” changes in water rights, section 1728 defines temporary as “a period of one year or less.” All other water rights changes, including water leases for environmental purposes, undergo the same procedure, whether their duration is a handful of years or in perpetuity. A streamlined procedure for short-term leases of a maximum duration of between three and five years could open the door to more environmental water transfers in California.

Finally, unlike some western states, California has relatively little experience with restrictions on use of water rights due to scarcity (curtailment orders). The SWRCB has only had to implement large numbers of curtailment orders in the context of severe drought. The lack of infrastructure, data, personnel and other tools needed to effectively administer water rights has been the subject of considerable commentary and criticism during the recent drought.<sup>14 15</sup> The overall administration of water rights in California is an issue that goes far beyond environmental water rights, but could limit the effectiveness of environmental water transfers over time. Any improvements in administration of the water rights system in California could also have the potential to benefit environmental rights.

9 California Water Code § 1725-1732

10 Small Watershed Instream Flow Transfers Working Group (SWIFT). 2016. A Practitioner's Guide to Instream Flow Transactions in California. [www.calinstreamguide.org](http://www.calinstreamguide.org)

11 Szeptycki, L., et al. “Environmental Water Transfers: A Review of State Laws.” (2015).

12 For a detailed breakdown of California water transfers see Hanak, Ellen, and Elizabeth Stryjewski. “California's water market, by the numbers: update 2012.” *Public Policy Institute of California* (2012).

13 Ibid.

14 Grantham, T. E., & Viers, J. H. 100 years of California's water rights system: patterns, trends and uncertainty. *Environmental Research Letters*, 9(8) (2014): 084012.

15 Escrivá-Bou, Alvar, et al. “Accounting for California's Water.” *California Journal of Politics and Policy* 8.3 (2016): 0\_1.

OVERALL SCORE	BASIN RANK
90	3

# NEW MEXICO

New Mexico’s strengths include its creation and funding of several programs with the explicit purpose of promoting protection of streamflows. New Mexico’s score lags behind some of the other states in the Colorado River Basin primarily because its authorization for instream flow transfers and rights rests on comparatively tenuous legal ground (a state Attorney General opinion) and because of its lack of successful deals.

## SUMMARY OF LAWS AND POLICIES

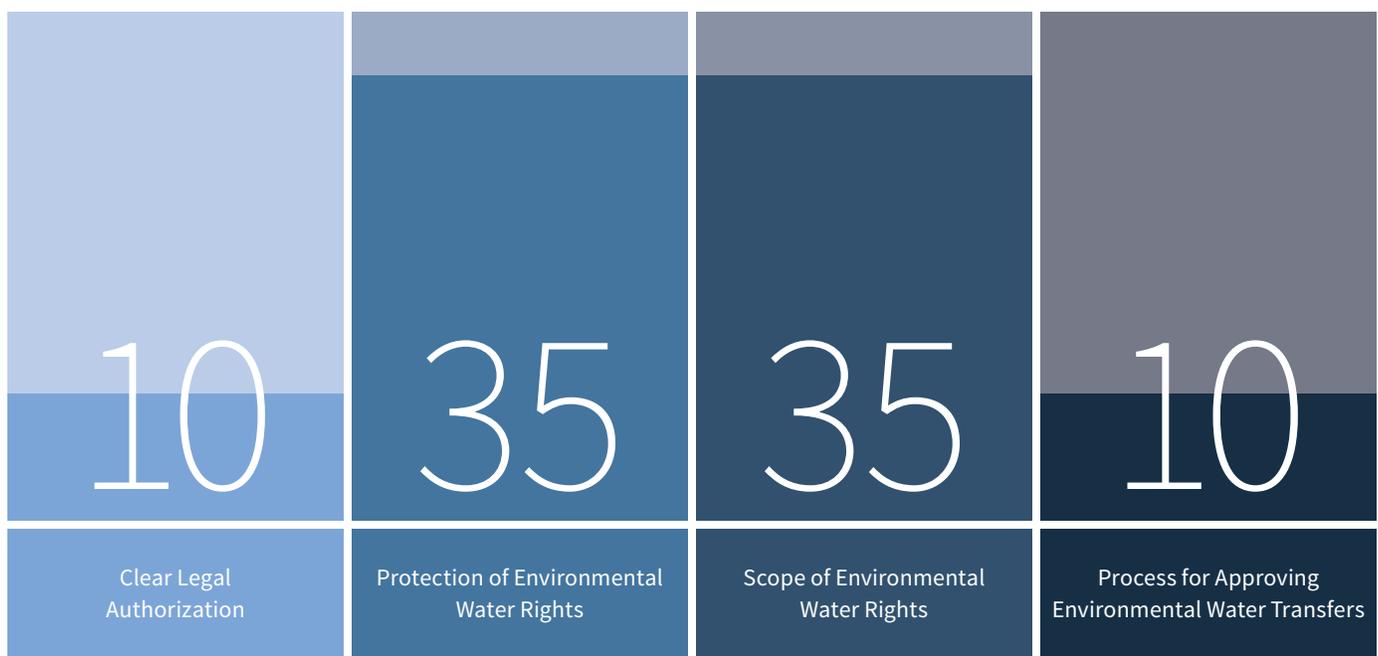
New Mexico statutes do not recognize instream flow rights or transfers. However, opinions issued by the state Attorney General and the State Engineer in the late 1990s indicated that nothing in New Mexico law prohibits recognition of environmental water rights, and that transfers of water rights to environmental purposes should be authorized.<sup>16</sup> In addition, the Interstate Stream Commission, an administrative body tasked with improving river flows for the environment as well as delivering water to neighboring states under compacts (among other responsibilities), manages a Strategic Water Reserve, a mechanism for holding and managing water and

water rights to assist the state in complying with compacts and decrees and to benefit threatened and endangered species. Finally, New Mexico provides dedicated staffing and funding for acquiring water and water rights for the Strategic Water Reserve as well as funding more broadly for river restoration actions.

## AREAS FOR FURTHER POLICY DEVELOPMENT

The lack of explicit legislation and administrative regulations for changing existing water rights to environmental water rights creates significant uncertainty in New Mexico. For

16 98-01 Op. N.M. Att’y. Gen. (1998); Memorandum from Legal Services Div. of Office of the State Eng’r to Tom Turney, State Eng’r (January 8, 1998).



example, the state has not yet developed an application form for environmental changes of use, leaving practitioners without a clear pathway to apply for these changes. Additionally, it remains unclear what specific requirements will be applied to environmental water rights to ensure that they can be regulated according to their priority dates. The New Mexico legislature and the State Engineer should work to lay out clear legal and administrative procedures for accomplishing changes of use of existing water rights to environmental uses.

In addition to the lack of clear legislation and regulation, the State Engineer and Attorney General opinions also suggested that applications to change to instream use would be required to show physical control over water instream. Neither opinion is clear on what exactly this would require, but it would likely require real-time flow gauges to demonstrate that water is physically present. This requirement is a vestige of the prior appropriation doctrine's requirement that physical control of water is necessary to effectuate a legal water right diversion. However, no other states that allow for instream water rights require demonstrating control over instream flows. Gauging is an important requirement for regulating instream flows, especially in rivers with many water rights of different priorities that are strictly administered by priority. However,

without further guidance from the State Engineer or Attorney General, New Mexico's blanket requirement to demonstrate control of instream flows would likely be applied even on a stream with few or no other water rights. The expense and technical hurdles this requirement imposes on practitioners in New Mexico has a chilling effect on transactions. Clarifying this requirement on instream transfers would provide greater certainty and predictability for practitioners while still ensuring that all water rights, including environmental water rights, can be administered.

Finally, New Mexico's Water Allowance statute explicitly allows a water user to change the point of diversion, place or purpose of use of conserved water resulting from changes in agricultural practice that decrease the consumptive use of water on-farm.<sup>17</sup> Extending the same right to change the point of diversion, place of use or purpose of use for conserved water resulting from reductions in diversions in addition to reductions in consumptive use would expand the available tools for landowners and water transaction practitioners in New Mexico. Where such changes can be made without injuring other water rights, either by providing replacement or mitigation water, or by other means, these changes could benefit both the environment and irrigators.

---

<sup>17</sup> NMSA (1978) § 72-5-18



OVERALL SCORE	BASIN RANK
75	4

# NEVADA

Nevada received a score of 75 out of 160 points. Environmental transfers are authorized by court decision and not statute in Nevada. Most of the environmental transfers authorized in the state have been in the context of the Truckee/Carson Basin adjudication.

## SUMMARY OF LAWS AND POLICIES

Nevada lacks an explicit statute allowing for changes of existing water rights to instream flow. However, under a Nevada Supreme Court case, *State v. Morros*<sup>18</sup>, generally read as recognizing instream flow as a beneficial use, changes of water rights to instream flow can be accomplished under the state’s general water right change authority. It is important to note that Nevada shares a number of water sources with neighboring California and that these sources are managed by federal court decrees. The Carson-Truckee adjudication includes provision for, and has seen a number of, transfers of water rights to benefit Endangered Species Act listed fish and tribal water rights in the Truckee River and Pyramid Lake. However, the analysis in this report is focused only on Nevada state water law and not on the different federal court decrees that guide management of the state’s interstate water sources.

Nevada’s framework for changing existing water rights is relatively straightforward and treats instream flow changes like all other changes to water rights. Any party, including individuals, can apply to change an existing water right to instream flow either permanently or for a limited time. The State Engineer reviews and decides on changes through an administrative process, although in basins covered by federal court adjudication (which encompasses a great deal of the state) the federal district court must approve transfers as well. Most of the transfers in the state have taken place pursuant to the Truckee/Carson settlement, and outside of that context, many of the applicable criteria and procedures remain unclear. Additionally, Nevada water law does not impose forfeiture on surface water rights that are not used. This feature provides useful flexibility for water rights holders to undertake actions

<sup>18</sup> *State v. Morros*, 766 P.2d 263 (Nev. 1988).

20	20	15	20
Clear Legal Authorization	Protection of Environmental Water Rights	Scope of Environmental Water Rights	Process for Approving Environmental Water Transfers

other than explicit water right changes (like temporary fallowing) that can benefit instream flows.

Nevada currently has the opportunity to build more experience with environmental transfers through the Walker Basin Restoration Program. This program, which is administered by the National Fish and Wildlife Foundation, was created by Congress in 2009 to restore and maintain Walker Lake with approximately \$300 million in funding. Voluntary water acquisitions play an important role in this program. One major water transfer has been approved by the State Engineer and is currently under appeal in federal court. This program should give the State Engineer, the irrigation community and conservation groups experience with environmental transactions outside the Truckee/Carson system, experience that could lay the foundation for improved procedures in the future.

#### AREAS FOR FURTHER POLICY DEVELOPMENT

While Nevada's process for changing existing water rights to instream flows is straightforward, the state lacks explicit statutory support for such changes. Nevada also lacks dedicated funding for instream flow changes and agency support in the form of dedicated staff. None of these issues are fatal flaws. However, expanded and explicit statutory support and funding for both transactions and agency staff would help expand the impact of these tools in Nevada. In addition, the procedures for transfers

outside the Carson/Truckee system remain cumbersome, but those procedures may improve as the State Engineer, the Federal District Court and the irrigation community gain more experience, particularly in the Walker Basin. Developing more experience and modifying procedures based on lessons learned should be the highest priority for the state.

Instream flow rights could be compromised by groundwater pumping. Nevada does not uniformly manage ground and surface water conjunctively. One result is that new groundwater wells in some areas of the state might be developed that could divert surface water and undermine any existing, protected instream flows. Lack of effective conjunctive management can create a significant problem for all surface water rights, not simply for instream flow water rights, and Nevada should work to address this critical missing piece in a uniform way across the state.

Finally, Nevada does not allow changing the use of saved water conserved through increased diversion, transmission and application efficiencies. While the state's lack of a forfeiture provision for non-use of surface waters may help to encourage water use efficiency, a specific process to dedicate saved water resulting from more efficient diversion could greatly expand efficient water use practices and provide an additional tool for water users and the public to dedicate water to instream flows.



OVERALL SCORE	BASIN RANK
73	5

# WYOMING

Wyoming received a score of 73 out of 160 in our framework. Although Wyoming agencies have been active in dedicating new water rights for instream flow, the state’s laws, policies and practices with respect to transferring existing appropriative rights to environmental uses lags behind many western states.

## SUMMARY OF LAWS AND POLICIES

Wyoming statute recognizes instream uses as beneficial uses, allows for the dedication of new water rights for instream flow purposes and allows for limited transfers of existing rights to environmental purposes. The state therefore has the basic framework required for environmental water transfers, although a number of key limitations have impeded transfers in the state.

Wyoming, however, has been active in identifying instream flow needs in the state, particularly for fisheries, and in dedicating new rights for streamflow. According to the most recent numbers, the Wyoming Water Development Commission and the Wyoming Game and Fish Department have worked together to file with the State Engineer for 130

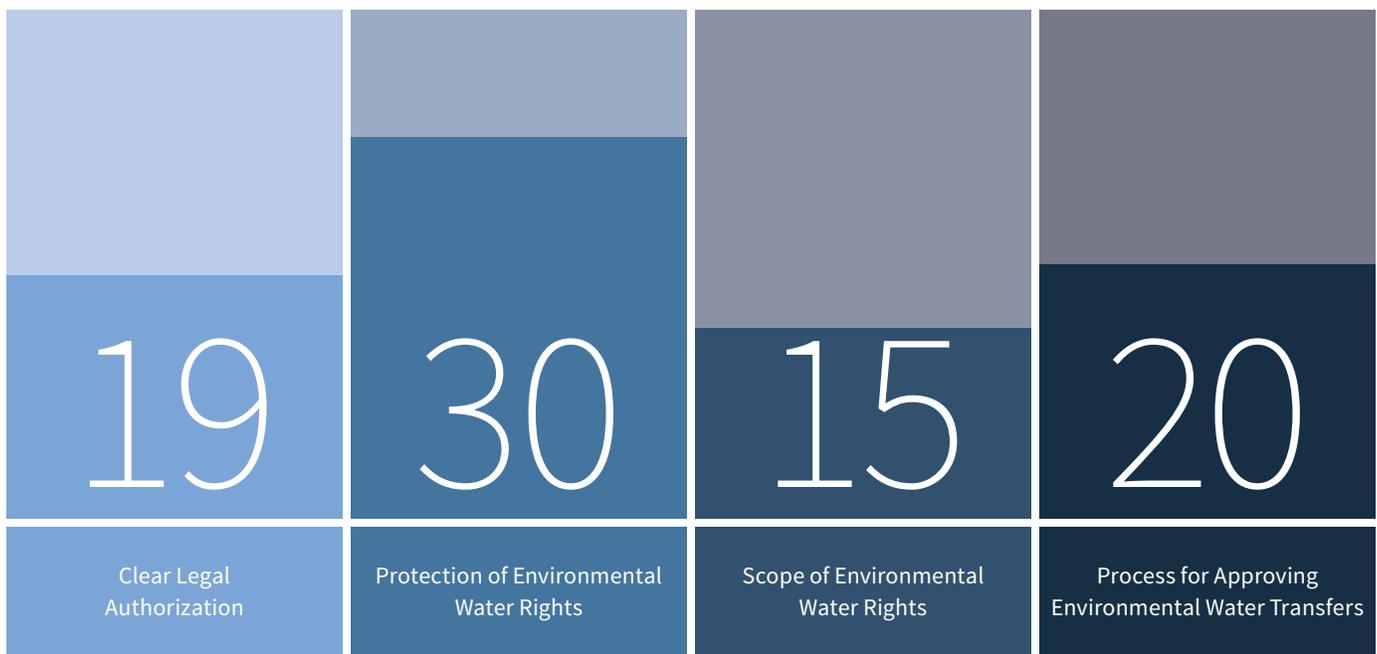
instream flow rights.<sup>19</sup> Recently, a number of irrigators in Wyoming have entered into agreements to forgo irrigation for part of the season (“split season” agreements) under the Colorado River System Conservation Pilot Program. This has been done with the active participation of the State Engineer.

## AREAS FOR FURTHER POLICY DEVELOPMENT

Wyoming has seen only one transfer of a consumptive use water right (a storage right) to environmental uses. In addition, the state has converted three of its own, nonconsumptive rights for fish hatcheries to instream flow purposes.<sup>20</sup> Wyoming law limits environmental transfers in a number of important

19 <https://wgfd.wyo.gov/Fishing-and-Boating/Instream-Flow-XStream-Angler.aspx>.

20 Szeptycki, et al., pp. 54-55.



respects, all of which certainly contribute to the relative lack of transfers:

- Instream rights may only be held by the State of Wyoming.
- The State may not purchase existing appropriative rights for conversion to streamflow, but may only accept such rights through donations and gifts.
- The existing procedure for formal temporary transfers of water rights is not available for transfers to instream flow uses.
- Environmental water rights are limited to the maintenance and improvement of existing fisheries.

All of these restrictions variably affect the utility and ease of environmental water transfers. Limiting Wyoming's program to acquiring water rights only through donation or gift, however, stands out as unique among both Colorado Basin states and the West generally. This restriction eliminates formal environmental transfers as a potential supplemental

source of income for farmers and ranchers. The lack of a formal mechanism for temporary instream flow transfers is also a constraint on environmental transfers in Wyoming.

If Wyoming wishes to implement a policy that better favors instream flow transfers, it will need to take steps to ease these two restrictions. Expanding the ability of private landowners to undertake transfers without donating or giving their rights to the state (i.e. by selling or leasing the rights to a conservation group) could broaden the appeal of such transfers. Likewise, enacting a clear pathway for temporary instream flow transfers could help broaden participation in environmental transfers generally. Neither step needs to be taken all at once. Rather, the state could work to incrementally shift to a more open approach to environmental transfers as has been done in other states such as Utah (by initially allowing "fish groups" to participate). The state's experience under the System Conservation Pilot Program could provide a foundation for some of these changes and for solidifying the types of deals feasible under current law.



# UTAH

OVERALL SCORE	BASIN RANK
71	6

Utah received a score of 71 out of 160 under our scoring framework. Utah law and policy with respect to environmental water transfers has been very conservative, and the state has approved only a handful of such deals. In recent years, the legislature has amended the relevant statutes in an effort to facilitate more environmental water transactions, with a particular focus on restoring native trout. Those laws have not yet been fully tested by practitioners.

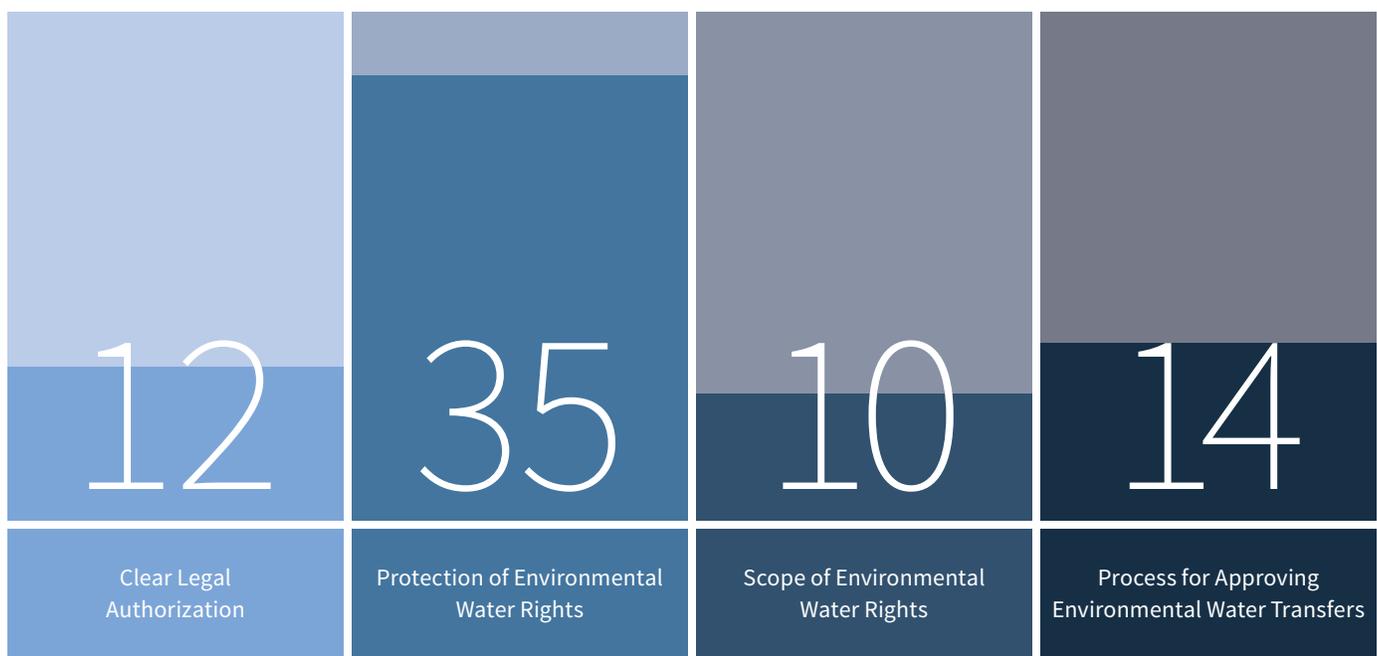
### SUMMARY OF LAWS AND POLICIES

State agencies may acquire or lease water rights for purposes of “the propagation of fish,” public recreation or “the preservation and enhancement of the natural stream environment.”<sup>21</sup> However, they can only do so by converting rights they already own, rights they acquire by lease, agreement, gift, exchange or contribution, or rights purchased using funds specifically appropriated by the legislature. Between 1986 and 2013, the Utah State Engineer had approved only eight transfers of water rights for environmental purposes under this statute.

In 2008, the Utah legislature amended the statute to allow any “fishing group” to temporarily change an existing water right

to instream flow if it is for purposes of protecting or restoring habitat for any of three native trout species. Originally, this law included a requirement that the fishing group obtain from the U.S. Fish and Wildlife Service a candidate conservation agreement under the Endangered Species Act to protect landowners in the event any species whose habitat is improved by the improved stream flow were to become listed under the Act. This requirement was amended in a subsequent legislative session to allow environmental transfers to go through if the fishing group agrees to indemnify the water rights holder for any liability under the Endangered Species Act.

<sup>21</sup> Utah Code § 73-3-30(2)(a)



### AREAS FOR FURTHER POLICY DEVELOPMENT

Utah's legal regime is clear but relatively narrow and includes restrictions on the ability of state agencies and fishing groups to transfer water rights to environmental purposes. In the near term, the key priority in the state will be developing and implementing deals under the new but as-yet unused statutes to assess how well they function, and in particular, how much the Endangered Species Act provisos and other limitations hamper deal making. The fishing group statute expires in 2018 and renewing it so as to allow more time to

develop deals is a critical priority.

In the longer term, there are a variety of incremental legal and policy changes that the state could take if it turns out that the current laws unduly restrict and hamper environmental transfers. Which changes might be appropriate will depend on experiences under current law. One option that has worked well in other states would be to create streamlined mechanisms for short-term (less than five years) transfers of water rights. Such changes may become more acceptable as the state gains more experience with environmental transfers.



OVERALL SCORE	BASIN RANK
62	7

# ARIZONA

Arizona received the lowest score in the Colorado Basin. Arizona law does allow for environmental water transfers. However, no existing appropriative water rights have been transferred to environmental uses in the state. Two factors impede implementation of such deals. First, the statutory framework is not well developed, creating legal and procedural uncertainty. Second, surface water rights in Arizona are not well-defined and quantified, making transfers more difficult.

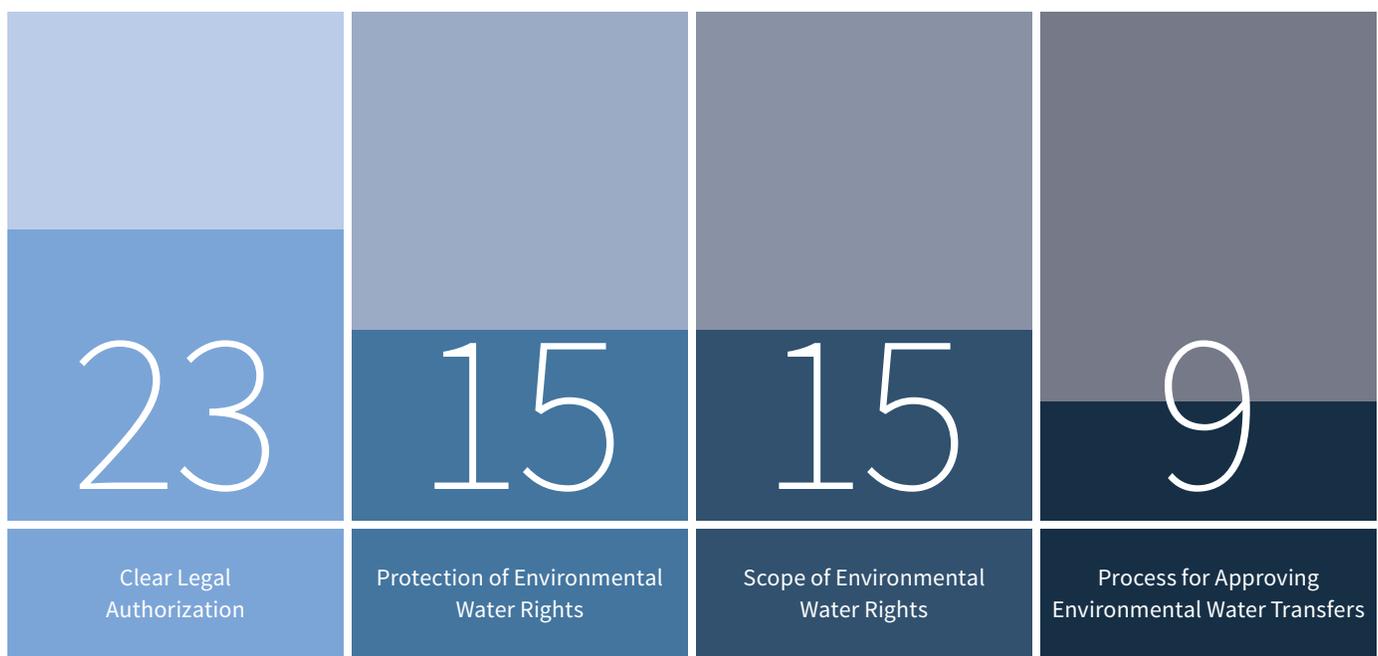
## SUMMARY OF LAWS AND POLICIES

Arizona statute recognizes “recreation [and] wildlife, including fish” as beneficial uses.<sup>22</sup> Arizona courts have confirmed that this language means that water rights can be used for instream flow, and the state now has a well-developed process for creating new appropriative rights with streamflow as the beneficial use. The state allows any party to apply for such a water right, including private entities as well as state and federal agencies, if certain well-defined criteria are met.

The law also recognizes transfers of rights but with very sparse statutory language. The statute authorizing transfers simply includes “recreation and wildlife purposes, including fish” among the beneficial uses to which rights can be transferred.<sup>23</sup> For a variety of reasons, this language has not been adequate to generate any transfers of existing rights to instream flow uses yet in Arizona. Some of those reasons potentially include:

<sup>22</sup> Ariz. Rev. Stat. § 45-151.

<sup>23</sup> Ariz. Rev. Stat. § 45-172(A).



- The statute makes clear that water rights transferred to environmental uses only maintain their priority date if transferred to a state agency or other political subdivision of the state.
- The state has (at least informally) enunciated a policy that any state agency may only acquire flow rights through stream reaches where that agency owns or manages land.
- The statute does not set out criteria or procedures for approving the transfer of existing water rights to environmental purposes, and state agencies have not established any regulations or guidance, leaving stakeholders uncertain as to the requirements for transfer approval.
- Two major river basins in the state are currently in the process of being adjudicated, and water rights in those basins are poorly quantified, making transfer more difficult.
- The state lacks a statute allowing for the transfer of water conserved through irrigation efficiency or other changes in agricultural practices to the environment or other uses, or clear and streamlined procedures for temporary transfers, two policies that have been effective outside the basin.

## AREAS FOR POLICY DEVELOPMENT

Although the state has yet to approve any formal water rights transfers to instream or other environmental uses, a variety of NGO and government agency activities in Arizona are seeking to promote streamflow protection, including applications for new streamflow rights, irrigation efficiency

projects and private agreements with irrigators that do not involve any formal water right change. One of the best examples of this is ongoing work on the Verde River to increase flows through voluntary diversion reduction agreements (<http://www.verderiverexchange.org/>). In the near term, the most important thing Arizona agencies can do is to build on these efforts in the state to create a clearer framework for the approval and enforcement of environmental transfers.

Currently, uncertainty about the process, substantive limitations and information needs for approval of environmental water transfers by the Arizona Department of Water Resources (ADWR) are significant problems in the state. ADWR could address this by establishing, through guidance or regulation, clear standards and procedures both for ADWR approval of environmental transfers and for other state agencies to pursue such transfers. This could be done in conjunction with lessons learned from actual efforts by water rights holders to transfer water to the environmental uses. As part of those standards, the state should make clear that state agency ownership of environmental water rights does not depend on ownership or control over adjacent land.

There are several other key improvements that would bring Arizona's laws more in line with those of states that have witnessed more environmental transfers, but many of these would require legislative changes. These include explicit authorization of short-term leases for environmental purposes and clear procedures for allocating water saved through conservation and efficiency projects to the environment or other uses.



**FOR MORE INFORMATION VISIT:**

Water in the West  
Stanford University  
Jerry Yang & Akiko Yamazaki Environment & Energy Building  
473 Via Ortega, MC 4205  
Stanford, CA 94305  
[waterinthewest@stanford.edu](mailto:waterinthewest@stanford.edu)  
[waterinthewest.stanford.edu](http://waterinthewest.stanford.edu)

# Stanford | Water in the West

