



RIO GRANDE BASIN

ROUNDTABLE



Photo Credit: Kevin Terry

WELCOME!

The RGBRT fosters cooperation in Colorado's Rio Grande basin through support of multi-purpose projects that help us manage, protect, and sustain water use for today and into the future. The Roundtable exists to make stuff happen! Check out our website: <http://rgbrt.org/>

Table of Contents

Page 1

- Upcoming Events

Page 2

- The Water Puzzle

Page 3

- Irrigation in the Rio Grande Basin

Page 4

- The Water Puzzle (Continued)
- Call for Colorado Water Trust Board Members!
- Roundtable Member Highlight: Dale Pizel

Upcoming Events:

• May RGBRT Meetings

The May RGBRT meeting will be held on 5/10 at the Rio Grande Water Conservation District Office, located at 8805 Independence Way in Alamosa, from 2- 4PM, with an Executive session starting at 1PM. The Education Committee will meet at 11 AM at the San Luis Valley Water Conservancy District Office, located at 623 4th St. in Alamosa. Visit the [RGBRT website](http://rgbrt.org/) for Zoom links to attend virtually!

• Gunnison Basin Project Tour

The RGBRT is organizing a trip to the Gunnison River Basin to visit some project sites on May 18! Lunch and transportation will be provided. Carpooling will leave Alamosa at 8 AM, and will return at 5 PM. RSVP [here](#) by May 11.

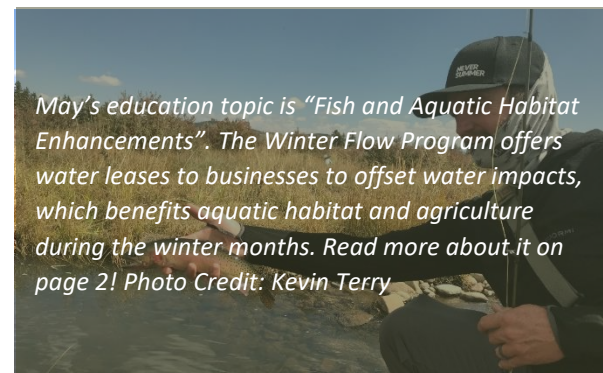
• Rescheduled River Clean-Up

Join us alongside the City of Alamosa, the SLVWCD, and the RGHRP for our rescheduled Earth Day River Cleanup at Cole Park on May 27! Clean up runs from 4-5:30PM! Gloves, snacks and water will be provided.

• Rio Trio Adventure Triathlon

Registration for the second annual Rio Trio Triathlon is open! The race, set for June 11, includes an 8-mile bike, a 3-mile paddle on the Rio Grande, and a 5k run! Folks can complete each segment individually, or team up for a 3-person relay! For more information, visit the [race website](#).

The Roundtable and Education Committee meet on the second Tuesday of each month. Visit rgbrt.org for meeting times and virtual attendance options.



May's education topic is "Fish and Aquatic Habitat Enhancements". The Winter Flow Program offers water leases to businesses to offset water impacts, which benefits aquatic habitat and agriculture during the winter months. Read more about it on page 2! Photo Credit: Kevin Terry



In my family, the holiday season usually involves a healthy dose of puzzle time. Mom rummages through the garage and breaks out the ancient folding card table that still smells like Grandma's basement and sets it up close to the fireplace and football games. From Turkey Day to X-Mas and sometimes even into the new year, it stays there, the tabletop shared between cardboard puzzle pieces and festive food and drink. This tradition is inclusive, with the little ones and visiting friends making random contributions, and everyone bringing their own strategy and experience. In the end, one or two of us find ourselves at the table long after others have moved on, but almost always the jigsaw is completed.

I've come to think of the efforts to restore stream flows below working reservoirs in the Upper Rio Grande Basin of Colorado as puzzle time, with an extended family of water partners filling in the pieces. The Winter Flow Program was established on the Conejos River in 2014, and since then has grown to include 5 reservoirs and a diversity of water partners. It's now an [award-winning](#) program that has restored flows and habitat over hundreds of stream miles.

Collectively, we developed this effort along with many other conservation and collaborative projects because we have long overused the resource, and the impacts of doing so have caught up to us. Like water supply and weather, this puzzle is dynamic, and the pieces look different every year. The goal is to get the most out of every drop, to diligently account for the various uses of water while optimizing benefit for both the human community uses *and* the ecosystems we all depend on.

The Context

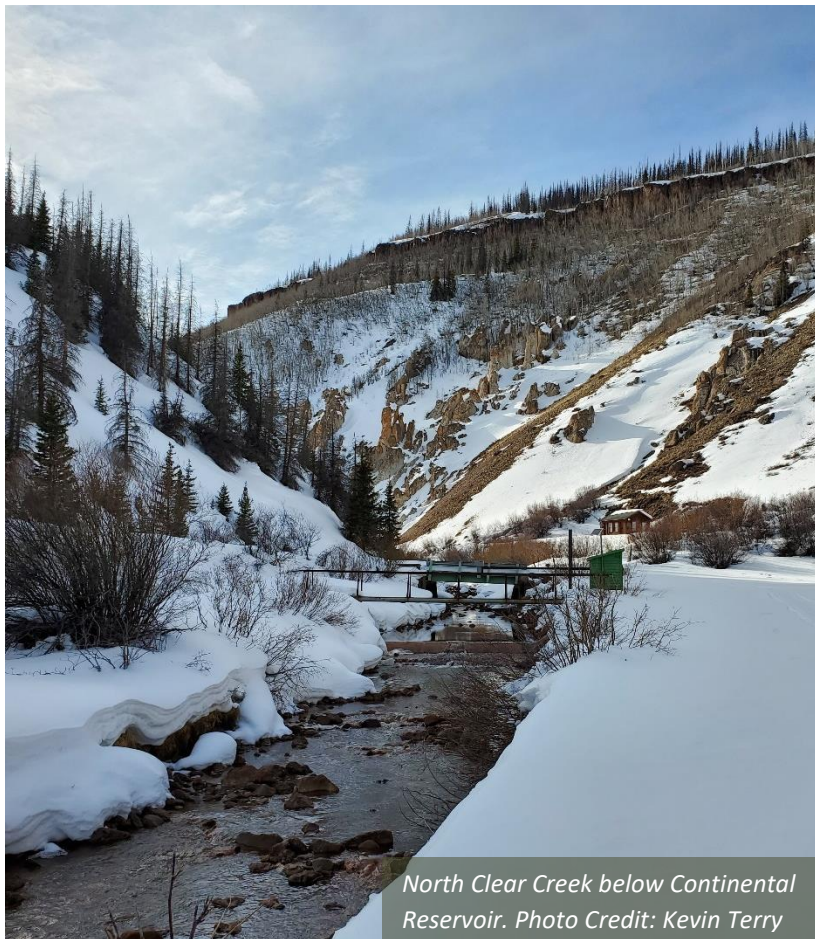
On Colorado's portion of the Upper Rio Grande and its tributaries, the immediately usable surface water (i.e. direct diversions from the river to farms) was completely appropriated by the year 1900, mostly for farming and ranching in the flat and very dry (<7 inches of rain) San Luis Valley. These early farms - with the old and most senior water rights - are mostly downstream of the legendary fisheries in the Rio Grande and Conejos Rivers that help drive our recreation economy today, and thus don't directly impact these fisheries.

The early 1900s marked the next phase of water development in the basin, which involved the capture of water supply during the winter for irrigation use the following year. This development happened quickly, and several high elevation reservoirs were built before 1920. The resulting storage of water that would otherwise have been in the streams for a 150-day period (Nov. 1 to March 31) set in motion a large-scale degradation of trout habitat. Not only were the streams depleted for 40% of the calendar year, but arguably the harshest 40%. The impacts on the fish habitat could not have been more significant.

More recently, the overuse of groundwater has become an immense problem in the San Luis Valley, challenging the administration of a shared resource and creating yet another challenging hurdle for achieving sustainable water use in our community.

A New Puzzle Piece: The Winter Flow Program

With these challenges facing us, Trout Unlimited developed the Winter Flow Program as a way to restore stream flows by re-timing water and identifying multiple uses for every drop. The program is funded by establishing a restoration-based marketplace for businesses seeking to offset their water impacts. For example, the Cheyenne Mountain Zoo in Colorado Springs uses approximately 16 million gallons of water every year. In addition to on-zoo water conservation efforts, they want to acknowledge and off-set their water use by benefiting wildlife elsewhere. They donate to the Winter Flow Program by sponsoring a water lease of 16 million gallons every year. This program of reciprocity gives Trout Unlimited the capacity and funding to be a day-to-day contributor within the San Luis Valley water community. It provides us the financial ability to cost-share with our water partners in order to re-time water for multiple uses, including restoring stream flows and aquatic habitat during the harsh winter months. *Continued on Page 4.*



North Clear Creek below Continental Reservoir. Photo Credit: Kevin Terry



Irrigation in the Rio Grande Basin

By Peyton Valentine



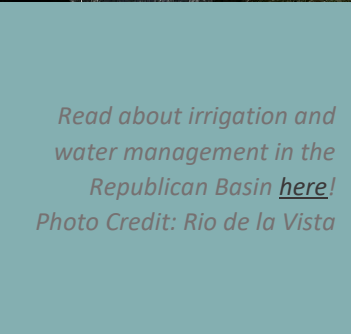
*Flood irrigation.
Photo Credit: Heather Dutton*



*Sprinkler Irrigation.
Photo Credit: Rio de la Vista*



*Did you know that agriculture accounts for 29% of the Valley's base economy? Read more about agriculture and irrigation in our [101 factsheet!](#)
Photo Credit: Rio de la Vista*



*Read about irrigation and water management in the Republican Basin [here!](#)
Photo Credit: Rio de la Vista*



The Rio Grande Basin, which encompasses the San Luis Valley, is a massive area constituting roughly 8,000 square miles, with a culture and economy primarily centered around agriculture. Since its early settlement, the inhabitants of the Valley have used water supplies from various sources available to develop agriculture. With generally dry conditions, irrigation is a critical component of agriculture in the area, with around 523,000 irrigated acres. Irrigation practices have changed and developed drastically over time, yet some aspects have remained the same since its early use.

Today, irrigation in the basin is done mainly in one of two ways: flood irrigation or sprinkler irrigation. There are various ways of flood irrigating, as well as different types of sprinkler irrigation. For much of the Valley's early history, flood irrigation was the main method. Flood irrigation can be done in a few different ways, but overall the concept is the same. Water from a river or well is diverted from a ditch and flooded across land, either in open meadows or across fields with dikes to direct the water down the land. Some irrigators divert the water by damming it and digging a "check" into the ditch bank, which is a small opening where the dammed water can flood out. Other farmers use siphon tubes that are positioned along the ditch bank that draw the water out to irrigate the land. Flood irrigation is around 40 to 55 percent efficient.

Sprinkler irrigation in the basin is done mainly with center pivot systems, as well as some wheel line sprinkler systems. With center pivot irrigation (sometimes called circle irrigation), the irrigation equipment rotates in a large circular shape, with sprinkler nozzles that irrigate crops. Center pivot irrigation is very efficient and uses less water to produce a large number of crops. The other type of sprinkler used for irrigation in the basin is the wheel line, which is a long sprinkler system that is run by a central motor, with pipes with sprinkler spickets and wheels that extend outward on either side of the motor. Every so often these sprinklers are moved across the land as one section is irrigated. These are less common, however, and are often used on smaller plots of land. Sprinkler irrigation is roughly 65 to 85 percent efficient.

Irrigation uses different water sources. The two primary water sources are surface water and groundwater. Surface water is the water that comes from snowmelt runoff, and is the water found in the rivers and streams that feed into the basin. This water is appropriated through water rights and is delivered to water users based on their position in the priority system. The other water source is groundwater. This is water stored below ground in either the confined or unconfined aquifer. This water is pumped out of the ground and used for irrigation.

Groundwater use is administered with its own set of rules. Well owners are allowed to pump under these conditions: their wells are adjudicated for irrigation, the subdistrict to which they belong is meeting sustainability requirements, and if they pay river depletions. Sustainability requirements are determined by aquifer conditions. If the aquifer is too low, there can be pumping restrictions and, in some cases, pumping can be stopped altogether.

Irrigation in the basin has progressed over the years due in large part to the hydrological changes in the basin. With less snowpack and dryer conditions, a rising need to make water use more efficient has led to the shift from flood irrigation to the use of sprinklers. As technology has changed and expanded, farmers have been provided more options. There are pros and cons. Flood irrigation returns more water to the ground, which keeps subsurface water levels higher. Flood irrigation, however, is more labor intensive and much less efficient than sprinkler irrigation. By applying less water, a farmer can typically grow more and better crops with a center pivot. Sprinkler irrigation is much more efficient but does not return as much water to the ground. Additionally, setting up and running center pivot systems can be much more costly than flood irrigation.

There is a need for efficiency in water management with dry conditions and a limited water supply. Looking to the future, it is important that water users implement efficient and effective irrigation practices. This will benefit economies, production, and the water resource availability. Water administrators in the basin are making great efforts to ensure the water resources are being managed efficiently and properly, for irrigation, recreation, environment, and compact needs.



We recently completed another year of the Winter Flow Program, from November 1st, 2021 through March 31st of 2022. The 2021-2022 program had 13 different water leases enrolled, adding 1,855 acre-feet of water (~ 605 million gallons) of flow which was delivered out of four on-channel reservoirs in the Upper Rio Grande and Conejos Rivers. Water from nine out of the 13 leases traveled at least 114 miles, and three of them made it more than 175 miles. Each lease has more than one purpose, from delivering water to livestock to providing augmentation water for sub-districts and water conservancy districts.

The Winter Flow Program is one restoration strategy that puts water where it is needed, when it is needed, through a community of stakeholders working together and stretching the resource for as many benefits as possible. Our San Luis Valley family of puzzle solvers includes: the Conejos Water Conservancy District, the San Luis Valley Water Conservancy District, the Rio Grande Water Conservation District, the Colorado Division of Water Resources, Colorado Parks and Wildlife, various federal agency land and water managers, Groundwater Management Sub-Districts, water rights owners and too many local experts to name.

In every community throughout the west there are water puzzles to solve. We are fortunate to have active, forward-looking partners here in the San Luis Valley. Everyone can help and you are always welcome at the puzzle table!

WANTED: Colorado Water Trust Board Member

Colorado Water Trust, a 21 year old statewide nonprofit with a mission to work within Colorado's market-based water rights system to supplement flows for rivers in need, is looking for the right person or persons to join its volunteer, working board. If you are a water professional or water rights owner or manager, who preferably (but not required) either lives in or is familiar with water division 3 or 7, and has a passion for what we do, send us a note and let's talk. The Water Trust's board has diverse backgrounds, points of view, geographical location, and professional roles in their day jobs, and we are interested in expanding that diversity further. Respond to aschultheiss@coloradowatertrust.org.

Want to stay up to date? Subscribe to our newsletter at info.rgbrt@gmail.com and follow us on our [Facebook Page](#)!

We're also happy to share statewide initiatives, events, and other water-centric programs on our Facebook Page, website calendar, and in this newsletter! Email info.rgbrt@gmail.com with content you wish to share!

Roundtable Member Highlight:



Dale Pizel

Wildlife Member at Large
Dale Pizel has served on the Roundtable from its inception. He is the owner of Broken Arrow Ranch and Land Co. a guest ranch and Creede's oldest real estate company. Dale also manages the Rio Oxbow Ranch above Creede a fishing and cattle ranch on 6 miles of the Rio Grande where he was awarded the 2003 Colorado Riparian Associations 'Excellence in Riparian Management' award for his grazing practices. Dale served as Commissioner to the Colorado Parks and Wildlife. He was former Assistant Director of the Wolf Creek Ski Patrol, a founder of 1st National Bank of Creede and Lake City, and a former Director of the Rio Grande Water Conservation District. Dale love's big elk, big fish, a good powder day, team roping and moving cattle at 9,000 feet on a good horse, and his wife Anne and daughters Abbey and Emily.

