Statement of Sarah Parmar, Director of Conservation
Colorado Open Lands

Hearing on the High Plains: Combating Drought with Innovation
Hearing of Subcommittee on Conservation, Climate, Forestry, and Natural Resources United States Senate

June 26, 2024

Chairman Bennet, Ranking Member Marshall, members of the subcommittee, thank you for the opportunity to speak with you today about the nexus between your work and mine.

My name is Sarah Parmar and I am the Director of Conservation for Colorado Open Lands, a nonprofit organization which has worked for over 40 years to conserve land and water for people and wildlife. Colorado Open Lands holds over 700 conservation easements on more than 680,000 acres and 720 water rights across the state, the majority of which are working lands stewarded by dedicated agricultural landowners or land managers. As many of you may know, a conservation easement is a voluntary, legal agreement that permanently limits uses of the land in order to protect the conservation values, or public benefits that flow from the land. Colorado Open Lands has worked to protect agricultural lands and water rights because we understand that continued irrigation in rural communities is the cornerstone of the ecology, economy, scenic views and heritage that we all value.

As a conservation community, and particularly within the land trust community, we have been largely focused on land use changes. Conservation easements have become a trusted proven tool for maintaining land use that supports wildlife habitat, food production, and viewsheds, and preventing incompatible land use that threatens those values. While conservation easements have been a powerful tool to protect Colorado's land, there are challenges to their effectiveness to address these growing pressures on water rights. Historically in Colorado, conservation easements have included water rights, requiring that the water stay with the land and that the landowner continue to use their water for irrigation. This traditional approach fails to address threats to water supply and may limit innovative approaches to water conservation and water sharing that could meet multiple needs. As we face a future of increased pressure on our water resources, I believe that the decisions we make about water will have a greater impact on our Western landscapes than land use decisions. Therefore, it is imperative that we understand water issues and adapt and innovate our conservation tools to support communities as they work to build resilience in the face of a changing climate and growing population.

We are fortunate in Colorado that when Senator Hickenlooper was Governor of Colorado, he commissioned a state water plan which identified gaps in Colorado's projected demands for water with its supply. The plan identified two significant drivers of loss of irrigated land in Colorado: conversion of agricultural water rights to municipal water rights and the decline of groundwater aquifers. I believe that conservation easements can be employed as a tool in the toolbox we will need to find creative, flexible solutions to these water challenges.

Take, for example, the South Platte River Basin, Colorado's bread basket, where farms are facing ever-increasing pressure from cities seeking out agricultural properties with water rights for conversion to municipal and industrial uses. This practice of "buying and drying" farms has consumed thousands of acres of farmland in the last 30 years, leaving some land barren and unproductive, with far reaching consequences such as soil erosion, lack of water recharge into aquifers, fragmented and damaged wildlife habitat, impacts on local agricultural economies, and issues related to food security. Colorado's South Platte River basin currently supports 850,000 acres of irrigated farmland and fuels nearly 75% of

Colorado's agricultural economy. However, the Colorado Water Plan projects that the basin could lose up to 50% of its irrigated lands by 2050 if current "buy and dry" practices continue.[1]. The Basin has already borne much of the state's recent rapid population growth. The trend is expected to continue, with the Basin absorbing between 42% - 70% of the state's new population growth by 2050.[2] This development may grow directly onto former farmland, as we so often see closer to the Front Range, but can also take the form of municipal interests purchasing water rights more than a hundred miles away, deep into rural communities, where the removal of that water will forever alter the ecology and remove the community's economic building blocks. The most significant challenge for this basin will be how to address the increasing needs of thirsty, rapidly expanding cities, while balancing the intertwined agricultural and environmental values of our state, which are supported by water use.

Rather than competing with cities and forcing farmers to choose between selling water for a premium or continuing to farm, Colorado Open Lands is offering a third path. We have developed more flexible conservation easement language that ensures that water rights can never be permanently stripped from the land, but that allows for collaborative water sharing. By placing farms and their water rights into conservation easements that prevent the separate sale or wholesale change of water, yet allow for leasing, we can encourage cities to lease water in times of shortage and for drought recovery, and provide farmers stability, ongoing ownership, and the opportunity to diversify their income with lease payments in dry years.

This flexible water language is now a staple of our conservation easement templates in the South Platte Basin and we are taking the next step of trying to scale up the pace and impact of this work through a modified "buy, protect, sell" model. Developers and water providers have a competitive advantage with access to capital that the next generation of agricultural producers do not have. The value of water rights has skyrocketed in the last decade, such that even very successful established producers cannot afford to purchase farmland because of its astronomical water value, making it that more unattainable for a new generation to access agricultural land and the water needed to make it productive. The removal of the speculative value of the water rights through a conservation easement also creates a farm or ranch which has a value closer to its agricultural production value, making it more affordable and accessible for agricultural producers. However, many farmers or ranchers may not have the time or capacity to work on a conservation easement and may simply want to sell; they may wish to have their land continue in agriculture, but need the market rate driven by water prices. We are beginning to work with interested ditch companies and communities to buy farmland as it comes on the market, put conservation easements and collaborative water sharing agreements into place to conserve the land while providing some needed water supply off farm, and then convey that farmland to a young farmer. Colorado Open Lands believes this presents an opportunity for collective purchasing to protect water rights in a way that may be difficult for any individual, while also expanding land access for beginning farmers and ranchers.

The other crisis impacting irrigated farms and ranches and rural communities, here in Colorado and throughout the west, is an invisible one: the shrinking aquifers beneath us. A little more than 1/3 of

[1] Colorado Water Conservation Board. "Colorado Water Plan 2023." Colorado Department of Natural Resources, January 2023. https://dnrweblink.state.co.us/CWCB/0/edoc/219188/Colorado_WaterPlan_2023_Digital.pdf.

[2] Colorado Water Conservation Board. "South Platte Basin Implementation Plan." Colorado Department of Natural Resources, January 2022. https://dnrweblink.state.co.us/cwcbsearch/0/edoc/216719/South_Platte-Metro_BIP_Volume1_2022.pdf.

America's drinking water comes from groundwater, with small and rural communities disproportionately relying on well systems.[3] Approximately 40% of American agriculture is dependent on groundwater.[4] Last year, the NY Times reported that of the 84,544 wells nationwide tracked since the 1920s, nearly half have declined significantly over the last 40 years, with this trend spanning the country, from California to Maryland.[5] While groundwater administration varies from state to state (and sometimes within states) there is a growing awareness that a failure to act on groundwater conservation will cause irreparable harm, particularly in rural communities who may lose both access to drinking water and the irrigation water critical for their economic agricultural base.

As the Rio Grande River journeys from its headwaters within the San Juan Mountains, it flows through Colorado's San Luis Valley, the largest alpine valley on earth and the highest valley capable of sustaining large scale crop production. While the San Luis Valley is unique in many ways, it shares a common resource challenge with many places around the United States – a declining groundwater aquifer. Groundwater pumping for irrigation beyond the recharge capacity of the basin is causing injurious depletion to senior surface water rights holders and may be impacting riparian ecosystems. A historic drought in 2002 revealed the unsustainable nature of the current level of groundwater withdrawals, leading the state of Colorado to impose a deadline for the community to come to a solution or face a shutdown of groundwater wells. If the state's mandate to replace injurious well pumping and to bring the aquifers back to sustainable production levels cannot be met, there is a serious risk that thousands of wells will be shutdown. Such an order was just announced in Idaho within the last month, when the state's water agency ordered the shutdown of wells which could impact half a million acres of agricultural land, in what is being described as the largest curtailment in the state's history. If a similar sudden shutdown of wells were to occur in the San Luis Valley, it will have catastrophic socioeconomic and environmental impacts.

In the San Luis Valley, irrigated agriculture is critical because it drives the majority of the region's economic activity and creates food sources and habitat for migrating birds and wildlife. A recent comprehensive wetland conservation survey found that 70% of wetland acres in the San Luis Valley are found on private lands fed by irrigation; this rich wetland network, supported by irrigation and impacted by groundwater levels, provides critical habitat for a variety of waterfowl and most prominently, for the thousands of Sandhill Cranes that stopover in fall and spring [6]. Irrigated agriculture contributes over $357

---

[3] US Geological Society "Depth of groundwater used for drinking-water supplies in the United States.**"** November 18, 2021. https://www.usgs.gov/publications/depth-groundwater-used-drinking-water-supplies-united-states.

[4] National Agricultural Statistics Service. "2018 Irrigation and Water Management Survey." US Department of Agriculture. https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/Farm_and_Ranch_Irrigation_Survey/index.php.

[5] America Is Using Up Its Groundwater Like There's No Tomorrow. Mira Rojanasakul, Christopher Flavelle, Blacki Migliozzi and Eli Murray. Aug. 28, 2023. https://www.nytimes.com/interactive/2023/08/28/climate/groundwater-drying-climate-change.html.

[6] Wetland Dynamics, LLC. "San Luis Valley Wetland and Wildlife Conservation Assessment, Second Edition." May 8, 2019. https://wetlanddynamics.com/wp-content/uploads/2020/04/SLVWetlandWildlifeConservationAssessment_Final_Edition2.pdf

million in production and accounts for one-third of the region's base economy.[7] With a forced well shutdown looming from the state engineer's office, producers face the prospect of receiving no payment to retire wells. A forced shutdown from the state could be devastating to the interconnected web of producers, local businesses and households. One study estimated a 24,500 (AF) reduction equally split between irrigators without landowner compensation could reduce the economic output of the region by approximately $30 million – a devastating blow in a region with limited alternative economic opportunities.[8] While a regulatory shutdown could solve the singular issue of unsustainable groundwater pumping, it would create other issues, impacting wetlands, and inequitably harming farm families, especially those on the margins.

Producers in the San Luis Valley have not had their heads in the sand, but instead have been working for decades to avoid direct state intervention in the form of well shutdowns. Irrigators from six groundwater subdistricts of the Rio Grande Water Conservation District and one subdistrict of the Trinchera Water Conservancy District are participating in voluntary programs to reduce groundwater pumping. To achieve pumping reductions, the subdistricts currently utilize the Conservation Reserve Enhancement Program (CREP) and short-term fallow programs and drought contracts. However, in the context of ongoing droughts and given the necessary volume of recharge, the scale of these efforts is insufficient to achieve basin sustainability as quickly as needed.

In 2018, Colorado Open Lands and the Rio Grande Headwaters Land Trust, two Colorado non-profit land conservation organizations focused on land and water conservation in the San Luis Valley, began conversations with the Rio Grande Water Conservation District, San Luis Valley Water Conservancy District, and Conejos Water Conservancy District to explore whether and how traditional land conservation tools, especially conservation easements, might be modified to focus on groundwater depletion.

As partners, we began by hosting listening sessions in each of the seven groundwater subdistricts to understand what kind of a program would be of interest to irrigators to support their voluntary reduction of groundwater. The feedback from producers was that many of them are not interested in a program that requires full fallow of their land. They want to be part of the solution, but many want to remain in agriculture, so are interested in compensation for reduction, but with the ability to use less water, and especially the flexibility to shift water across their farm fields. What we heard from water managers was that permanence of water savings in the aquifer would be critical to avoid a yo-yo effect in storage. All agreed that certainty is valuable for planning and investment and that investment could not come from the community alone, when already, the median household income in the San Luis Valley is much lower than that of the average household in Colorado (60% lower in 2010).[9]

---

[7] San Luis Valley Development Resource Group and Council of Governments. "2022 Annual Comprehensive Economic Development Strategy (CEDS) and Progress Report." December 31, 2022. https://www.slvdrg.org/wp-content/uploads/2023/06/2022-SLVDRG-EDA-Annual-Report.pdf.

[8] Rebecca Hill James Pritchett. "Economic Impact Analysis and Regional Activity Tool for Alternative Irrigated Cropping in the San Luis Valley." Colorado State University. August 2016. https://watercenter.colostate.edu/wp-content/uploads/sites/33/2020/03/SR28.pdf

[9] Early Childhood Council of the San Luis Valley. "Community Assessment of the San Luis Valley." 2016. https://www.slvdrg.org/wp-content/uploads/2017/05/Economic-Impact-Analysis-and-Regional-Activity-Tool-for-Alternative-Irrigated-Cropping-in-the-San-Luis-Valley.pdf.

A working group consisting of the partners, together with staff of the Colorado Division of Water Resources, water attorneys, a conservation easement attorney, and appraiser with expertise in both water rights and conservation easements, embarked on a feasibility study to adapt a traditional conservation easement as a tool to address aquifer decline. We believe that we have created a tool with the following qualities: a conservation easement can be permanent and legally enforceable in perpetuity, it can qualify for tax incentives and/or funding incentives, including Farm Bill programs, it can be tailored to a specific region and a specific property, and it can support water reduction with agricultural production, specifying a permanent amount of pumping reduction, while allowing the landowner to manage how they achieve water savings.[10]

Colorado Open Lands completed the first groundwater conservation easement on a farm in the northern part of the San Luis Valley which will save 1,700 acre-feet per year (enough to support approximately 3,500 households). The water savings from this farm allows the other farms in that groundwater district to continue irrigation. The farm is hydrologically connected to San Luis Creek, supporting wetlands and key habitat. The groundwater pumping reductions on the farm will help in the recovery of the confined aquifer and, in turn, help support resilient habitat communities on significant wildlife lands to the south, including the Baca National Wildlife Refuge. Compensation for this conservation easement was determined through an appraisal, which considered comparable sales of fully irrigated farms to sales of farms which were water-short, to determine the value of the foregone groundwater pumping. This landowner utilized Colorado's state income tax credit for conservation easements, claimed a federal tax deduction, and was partially compensated by a state grant to Colorado Open Lands, as well as funding from a private foundation.

Colorado Open Lands explored funding for groundwater conservation easements under the Agricultural Conservation Easement Program (ACEP); however, because the purpose of that program has been to maintain agricultural viability, national staff had concerns that reducing irrigation or changing the type of agricultural production that is feasible through a groundwater conservation easement could be incompatible. Colorado Open Lands was encouraged to pursue a Regional Conservation Partnership Program (RCPP) grant as an alternative and was awarded funds to partially purchase voluntary groundwater conservation easements that will restrict pumping to allow for aquifer recovery with continued agricultural use and to pay for land management expenses to transition agricultural operations under different scenarios that will protect soil health and wildlife habitat.

I am incredibly grateful for the exceptional staff we have working for the Natural Resources Conservation Service in Colorado, including Ron Riggenbach, District Conservationist in the San Luis Valley, Laura Trimboli, Colorado Easement Program Manager, and especially for the leadership of our State Conservationist, Clint Evans. They all care deeply about the issues facing Colorado and constantly work to find creative solutions to stumbling blocks. Since 2000, Colorado Open Lands has partnered with NRCS to conserve nearly 50 farms and ranches across Colorado, and we are now a Certified Entity for purposes of the Agricultural Conservation Easement Program.

It was under the leadership of Mr. Evans that the agency approved our flexible water rights language to support alternatives to buy and dry. He has supported our work to break down barriers to conservation of small farms irrigated by Historically Underserved Producers in the San Luis Valley whose title to land is complicated by the integration of the Mexican Land Grants into the United States Public Land Survey

[10] Colorado Open Lands. "Water Conservation" 2024. https://coloradoopenlands.org/water-conservation/.

System. However, despite our phenomenal partners here in Colorado and our organizational experience successfully implementing Farm Bill Programs, we have found the Regional Conservation Partnership Program to be exceptionally challenging to utilize for conservation easements, and an impediment to achieving the impacts we hoped to see with regard to aquifer recovery in the San Luis Valley.

On the other hand, the Agricultural Conservation Easement Program, or ACEP, is widely known and utilized and has program staff who understand real estate transactions. I believe that the creation of a Groundwater Conservation Easement Program under ACEP, as called for in the Voluntary Groundwater Conservation Act sponsored by Senator Bennet, would create the necessary purpose and provide an impetus for the agency to build expertise in water rights (or delegate authority to State Conservationists who can work with entities like COL to demonstrate compliance with state water law in order to enact and enforce groundwater conservation easements). The creation of even a pilot program in the upcoming Farm Bill reauthorization would enable NRCS and partners to undertake the necessary trial and error inherently involved in the development and successful implementation of a new tool under different water law and administrative regimes. State block grant funding could also allow for adoption of accurate and precise measurement of groundwater withdrawals.

I applaud this Subcommittee and the full Agriculture Committees of both the House and Senate for including much needed funding increases for conservation programs, together with increased cost-share to landowners for the Agricultural Conservation Easement Program and needed changes to easement administration as part of existing Farm Bill proposals. I ask that you consider conservation easements as a tool for land access and continue to advocate for a workable buy, protect, sell program, especially one that allows for local governments, as well as land trusts, to purchase farms when valuable water rights are involved and would otherwise put these farms out of reach for the next generation. By both highlighting the need to address water and integrating it into these existing Farm Bill programs in new ways, you give us partners the ability to innovate with producers.

Water law is complex and messy, but if we hope to solve the looming issues that threaten the viability of our nation's agricultural communities, we have to be prepared to wade into the messiness and uncertainty. We cannot allow fear of complexity to snuff out good ideas or bury new tools. In the last two years, I have spoken with dozens of water managers and land trusts across the majority of western states who are interested in groundwater conservation easements as a tool they might bring to their region or community. A groundwater conservation easement is not a silver bullet, but it is another arrow in what needs to be a growing quiver to address a critical natural resource issue.

Agriculture has always been an inherently risky occupation, as much or more about love of lifestyle than certainty of returns. However, as we look at climate projections - a future filled with more drought and more volatility as to when and where precipitation will fall or how quickly our rivers will peak, it is difficult not to be pessimistic. I was the 5th generation to grow up on my family's ranch in Southeastern Arizona and many of my childhood memories were wet – throwing rocks in the creek by our house or getting stuck on the dirt road that was 30 miles between our house and school. Now my father and I have difficult conversations about how the two out of the last three years are the driest that he has ever experienced in his nearly 50 years on the ranch. The well that supplies water to my childhood home – the same home I hope to move back to in order to take over management of the ranch - is dry. And yet, my father has not given up. At 72, he is looking for new strategies, new ways to bring his management into alignment with Mother Nature. He will not give up and neither can we.

It is a comfortable thing to focus on our own areas of knowledge or expertise, to work within the black and white that make it easy for us to say no. It is easier for me as Director of Conservation of a land trust

to focus only on land development, but doing so means that I may miss the most significant threat to farm and ranch land. It is easier for a water manager to focus only on taking wells out of production, but in doing so, they may miss the unintended consequences of erosion from newly dry and barren fields and the dust that blows from those fields onto the snow of the surrounding mountain ranges. It is easier for a federal funding program to focus exclusively on fallowing as the only proof of water savings, but in doing so, we may save an aquifer, but kill communities in the process. I am continually inspired by the sacrifices of San Luis Valley farmers and ranchers to preserve their community, wildlife and the way of life they love by working toward aquifer sustainability. I would argue that more tools, including groundwater conservation easements, are needed to support San Luis Valley farmers and others across the west who want to keep farming with less water. We need to facilitate reduction with production, to keep farm communities alive while we recover aquifers.

We have only to look to Mother Nature for examples of interconnectedness of systems and we would do well to mirror this in our search for solutions. We would do well to remember that Western water challenges are not simply agricultural challenges, but challenges to wetlands and streams, challenges to wildlife, challenges to rural towns whose wells are running dry, and challenges to families trying to steward the land and survive. To remember that Western water challenges are not simply Western challenges, but challenges that produce a ripple effect across the nation as consumer prices increase when crop production decreases. I applaud the hosts of this field hearing, Senator Michael Bennet and Senator Roger Marshall, for looking beyond partisan lines to get to the heart of these challenging water issues and for asking how the next Farm Bill can support innovation to make our interconnected agricultural, ecological, and human communities more resilient.