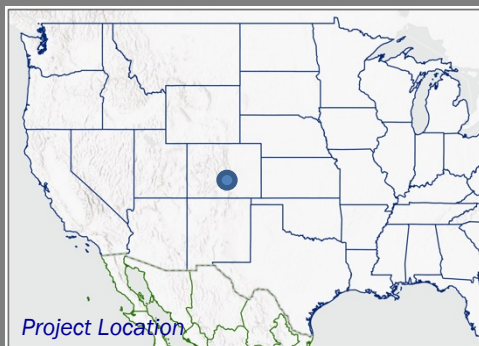


WATER CONSERVATION

Community-Driven Water Conservation on the Bessemer Ditch, Colorado



The Bessemer Ditch is an important irrigation canal located in south-central Colorado, primarily serving agricultural areas in Pueblo County. In 2009 and 2010, Pueblo Water acquired nearly one-third of the water rights to the Bessemer Ditch. This agricultural-to-municipal water transfer will eventually dry up 5,141 acres of the most productive farmland in Pueblo County. To address this, researchers proposed the "substitution of dry-up" provision, allowing less productive land to be dried up instead, preserving critical farmland. This approach balances the City of Pueblo's water needs with the preservation of agriculture and environmental benefits. The Palmer Land Conservancy (Palmer) actively collaborates with farmers and other conservation groups to implement this strategy, protecting the local agricultural economy.



Southwest Climate Hub
U.S. DEPARTMENT OF AGRICULTURE



Bessemer Ditch Flowing Out of Pueblo Reservoir/Ben Knight/Palmer

KEY ISSUES ADDRESSED

Pueblo County's long standing agricultural economy is threatened by urbanization and "buy-and-dry" practices, which divert water away from agricultural to municipal uses, potentially leading to an annual economic loss of \$8.4 to \$17 million. The Arkansas River Basin, already over-allocated, faces increased water scarcity due to drought, causing riparian degradation, biodiversity loss, and decreased ecosystem services to human communities. Despite the country's agricultural heritage and economic contributions, decision-makers rarely prioritize the sector, leaving the rural way of life vulnerable to pressures from expanding municipal development.

PROJECT GOALS

- Conserve the most productive farmland on the Bessemer Ditch for economic viability
- Strategically dry-up less productive farmland for ecological and riparian habitat gains
- Ensure that municipal development projects mitigate water resource impacts to agriculture
- Safeguard Pueblo County's agricultural heritage and support remaining producers

CREATING A CULTURE SHIFT

Palmer produced and regularly screens the short film *Mirasol*, showcasing Pueblo County's diverse farming community and rich agricultural heritage, harnessing the power of storytelling to connect people to their local food systems.



Squashes Grown on Bessemer-Irrigated Land/Russ Schnitzer/Palmer

PROJECT HIGHLIGHTS

Scenario-Based Economic Impact Analysis: In 2020, Palmer conducted an Economic Impact Analysis (EIA) to evaluate the effects of drying-up different amounts of irrigated farmland in Pueblo County. Analyses revealed that Bessemer-irrigated lands generate \$29.1 million annually and support 530 full-time equivalent jobs. The EIA explores strategies to maintain economic output while allowing Pueblo Water to meet its municipal needs.

Win-Win Solutions for Water and Agriculture: Strategic dry-up scenarios can maintain or even enhance economic outputs on fewer irrigated acres. By substituting 1,500 acres, Bessemer production could increase by \$2 million annually, securing farmland, fulfilling municipal water needs, and promoting sustainable land uses.

Biodiverse Corridors Among Farmland: Strategically drying-up farms near riparian corridors can enhance habitats for species like the Arkansas darter (*Etheostoma cragini*) and provide vegetative buffers that limit sedimentation, improving downstream water quality.

Sustaining Agricultural Heritage: Palmer is ensuring the availability of fertile land for the next generation of farmers by protecting the most productive farms on the Bessemer Ditch from dry-up.

Collaborators

- Palmer Land Conservancy
- The Freshwater Trust
- Collaborative Design Resources (CDR) Associates
- Lyon Gaddis Law Firm

CART Author: Erin Connolly, Drought Learning Network (DLN), November 2024.

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Visit CART:



LESSONS LEARNED

Community-driven projects yield sustainable outcomes. Palmer's long-term commitment and strong community presence have been key to the success of their conservation efforts in Pueblo County. They continually re-engage with new county officials to maintain momentum, and their work is built on trust-based relationships, evidenced by agricultural partners inviting them to work on the Bessemer water transfer.

Having the right toolkit is crucial to effectively addressing a problem. This may require repurposing tools that have been used in the past or building entirely new ones, which can be challenging at a policy level. Palmer purpose-built their decision support tool, now used across Colorado and the western U.S., and is raising money for an acquisition fund so that when opportunities arise, Palmer can quickly purchase and protect irrigated farmland. Palmer's success is visible through milestones like the dry-up provision in the Pueblo Water decree, completing the EIA, and developing the decision support tool, demonstrating that incremental achievements are vital for long-term success.

NEXT STEPS

- Complete a pilot substitution with an agricultural partner as proof of concept for the decision-support tool to gain community support
- Once proof of concept is in place, scale-up substitution of dry-up provision as part of a balanced water conservation strategy benefitting both municipal and agricultural interests across the Bessemer Ditch

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A Highly Productive Farm in Vinefield, Colorado/Ben Knight/Palmer