

FINAL REPORT

Prepared for

The Colorado Water Conservation Board

Water Plan Grant: POGG1 PDAA 2019-2496

Notice to Proceed Date: 29 November 2018

North Park Irrigated Meadows Project



Submitted By

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REPORT Summary

DUCKS UNLIMITED, INC. PROVIDES THIS FINAL REPORT TO THE COLORADO WATER CONSERVATION BOARD FOR GRANT # POGG1 PDAA 2019-2496 - NORTH PARK IRRIGATED MEADOWS. WE ARE PLEASED TO REPORT THAT ALL TASKS HAVE BEEN COMPLETED AND PROJECTS HAVE BEEN DELIVERED.

THE CONTRACT WAS EXECUTED ON NOVEMBER 29, 2018. THIS PO PROVIDES \$75,000 AND COVERS 3 TASKS TO BE ACCOMPLISHED BEFORE DECEMBER 31, 2020. TASK 1 -AQUA FRIA RESERVOIR SYSTEMS RESTORATION, TASK 2 – RUSSELL RANCH ENHANCEMENTS, AND TASK 3 – SHERMAN CREEK RANCH RESTORATION WERE ALL COMPLETED THIS SUMMER AND FALL. IN THE PAST 12+ MONTHS, WE HAVE COMPLETED ALL PROGRAM ACTIVITIES, ADMINISTERED REQUISITE PARTNER AND LANDOWNER CONTRACTS, INCLUDING CONSTRUCTION OF ALL 3 PROJECTS ASSOCIATED WITH THESE TASKS. THIS IS NOTEWORTHY GIVEN THE COVID-19 PANDEMIC AS WELL AS THE COMPLICATIONS ASSOCIATED WITH MULLEN AND CAMERON PEAK FIRES DURING THE SUMMER OF 2020, WHICH IMPACTED OUR ABILITY TO ACCESS NORTH PARK AND CREATED ADDITIONAL DELAYS DURING THE PROJECT PERIOD.

WE LOOK FORWARD TO PARTNERING ON ADDITIONAL PROJECTS WITH THE COLORADO WATER CONSERVATION BOARD IN THE FUTURE IN ORDER TO HELP MEET THE OBJECTIVES OF THE COLORADO WATER PLAN. PLEASE LET US KNOW IF YOU HAVE ANY QUESTIONS, COMMENTS OR CONCERNS.

BACKGROUND

The goal of this multi-purpose water project is to rehabilitate irrigation infrastructure (diversion, delivery, and storage) tied to critical wildlife habitat acres and productive ranchlands in North Park Colorado. One of the largest threats in this landscape is the loss of irrigated hay meadows on private lands. Ducks Unlimited (DU) agreed perform hard irrigation infrastructure improvements and enter into long-term site-specific agreements in order to project agricultural operations, rural community, and wildlife including waterfowl. Three Tasks were identified related to work on three separate tracts: (1) Aqua Fria Reservoir System Restoration; Russell Ranch Enhancement; and, (3) Sherman Creek Irrigated Meadows.

Table 1. Financial summary of expended grant funds by task number.

POGG1 2019-2496 Final Report		Water Plan BUDGET	TASK 1 Aqua Fria Reservoir System Restoration BUDGET \$	TASK 2 Russell Ranch Enhancement BUDGET \$	TASK 3 Sherman Creek Irrigated Meadows BUDGET \$
No.	Date	75,000	28,070	19,890	27,040
1	June 2020	30,329		3,279	27,050
2	December 2020	44,671	28,070	16,601	
Total Water Plan Expended		75,000	28,070	19,880	27,050
Total Water Plan Remaining		0	-	-	-

Table 2. Summary of matching expended by task number.

POGG1 2019-2496 Final Report		Water Plan MATCH \$	TASK 1 Aqua Fria Reservoir System Restoration MATCH \$	TASK 2 Russell Ranch Enhancement MATCH \$	TASK 3 Sherman Creek Irrigated Meadows MATCH \$
No.	Date	245,945	112,355	19,890	113,700
1	December 2020	245,945	112,355	49,843	83,747
Total MATCH Expended		245,945	112,355	49,843	83,747
Total MATCH Remaining		-	-	(29,953)	29,953

TASK SUMMARY UPDATE

Aqua Fria Reservoir System: The goal of this project was to restore functionality of Aqua Fria Reservoir by replacing dilapidated water control infrastructure at the dam. While privately allocated and managed, the Aqua Fria Reservoir is located approximately 5 miles onto U.S. Forest Service property at an elevation of over 10,000 ft. As such, USFS access and ‘minimal-impact’ permits were required to begin work and significant improvements were needed for equipment to access the location. A permit was finally issued in June of 2019. The late winter/wet spring observed in North Park this year delayed access until August, with the road finally completed in September. This project focused on the needed repairs to Aqua Fria dam and outlet infrastructure to meet the operating and safety standards of the state engineer office. Without this work, the reservoir’s water supply would be lost thereby jeopardizing important wet meadow habitat that migratory birds depend on.



Figure 1. Dam face of Aqua Fria Reservoir and dilapidated headgates prior to completion of project. All debris has since been removed. The dam was hand-laid in ~1940 and the water irrigates over 500 acres of wet meadow habitat in hay production.

Initial work was focused on clearing the debris against the dam face, which was completed in fall of 2019. Telesto Solutions, Inc. has led all inspections, engineering, and design, with Rogue Construction and the landowner completing the construction. All major infrastructure was mobilized successfully to the site prior to snow conditions and winter temperatures forcing construction crews to vacate. In August of 2020, the new PVC pipe was inserted and secured in the dam, a new debris curtain was installed, and remaining repairs to the dam face were completed.



Figure 3. Installation of PVC inserts into dilapidated Corrugated Metal Pipe (CMP).



Figure 4. Newly installed headgates and debris curtain at the outlet of Aqua Fria Reservoir.

Russell Ranch Enhancements: The purpose of this project was to restore and enhance irrigation infrastructure so that historically irrigated acres would remain in production, and the wildlife that utilize them can continue to benefit. Specifically, a dilapidated head gate needed to be replaced to increase efficiency of water management and use out of the Nine Six Nine Ditch (969). Furthermore, conveyance piping and ditching needs to be installed and/or repaired to restore irrigation capacity to 48 historically irrigated acres. Surrounded by sand/sage and Grizzly Creek, these irrigated meadows will provide ideal habitat conditions for breeding waterfowl, in addition to securing the productivity of the agricultural operation and its water rights.

DU engineering team completed a topographic survey of the property and utilized the data to complete a design and construction plan set for construction. DU solicited competitive bids from multiple contractors and entered awarded the contract to Sessions & Sons Construction. An enhanced, properly sloped irrigation ditch was installed. A new custom headgate on the 969 Ditch and crossing pipe with support infrastructure was also installed. An Agri-Drain inline stop log water control structure was also installed in a low-lying area of the field to promote beneficial ponding for irrigation and wildlife. Finally, new turnouts were fabricated and installed.



Figure 7. New custom headgate with supporting infrastructure installed at Russell Ranch.

Sherman Creek Ranch: The Sherman Creek Ranch—owned by the Colorado State Land Board (SLB)—is operated as an agricultural operation, managed by a private leasee. The property is located northeast of Walden, CO; a high-elevation mountain valley. The ranch is used exclusively for hay production and livestock grazing, both of which are dependent upon ‘sheet-flow’ irrigation of decreed water rights stemming from two main creeks. The water is managed through a series of headgates, conveyance ditches, and turnouts to allocate water across over roughly 570 acres of irrigated land. Unfortunately, much of this irrigation infrastructure is in need of repair. In addition to sustaining the agricultural operations, these irrigated meadows provide ideal habitat for an array of wildlife, including migratory waterfowl. Substantial progress has also been made on the Russel Ranch Project. The DU engineering team completed a topographic survey of the property and utilized the data to complete a design and construction plan set. DU solicited competitive bids from multiple contractors and awarded the contract to Sessions & Sons Construction. Irrigation ditches have been dug, two new T-Boxes placed, and the construction of the embankment were completed.



Figure 8. Custom T-box being installed at Sherman Creek Ranch. The structure will allow irrigation



Figure 9. Custom T-box being installed with new ditching at Sherman Creek Ranch.



Figure 10. Installation of one of the Agri Drain inline stop log water control structures installed at Sherman Creek Ranch.