

# Upper Blackfoot Diversions and Off-Stream Watering Project

DEQ NPS Sub-grant S634

Final Report

November 2021



Pipe being ripped in during installation of one of the Stockwater systems for Chesterfield Land and Livestock, UBR Photos.

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&

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In Cooperation With:

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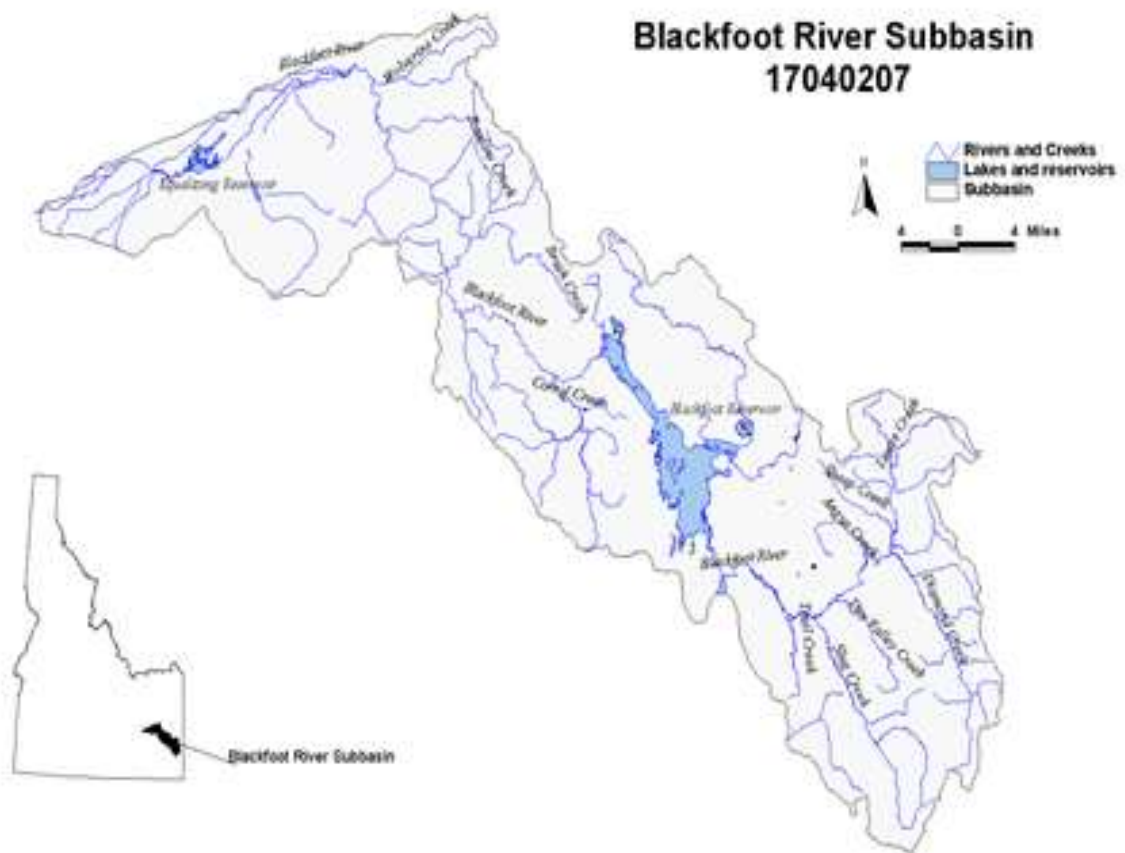
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## **Abbreviations**

Bear River Watershed Coalition - BRWC  
Beneficial Use Reconnaissance Program - BURP  
Best Management Practices - BMP's  
Bureau of Land Management - BLM  
Caribou Soil Conservation District - CSCD  
Environmental Protection Agency - EPA  
Forest Service - FS  
Hydrologic Unit Code - HUC  
Idaho Department of Environmental Quality - IDEQ  
Idaho Department of Lands - IDL  
Idaho Soil and Water Conservation Commission - ISWCC  
Idaho State Department of Agriculture - ISDA  
Total Maximum Daily Load - TMDL  
USDA Natural Resources Conservation Service - NRCS  
Total Maximum Daily Load - TMDL

## Upper Blackfoot River Diversions &amp; Off-stream Watering Project

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## Upper Blackfoot River Off-stream Watering Project Map

## Project Overview

The Upper Blackfoot River Diversions and Off-Stream Watering Project began in the fall of 2019. This project focused on the water quality improvements in the Upper Blackfoot River Watershed by focusing on a few of its tributaries. Participating landowners included Eastern Idaho Grazing, Idaho Citizens Grazing Association, Chesterfield Land and Livestock, Hamilton Family Ranch, Todd Stoddard Ranch, and Banks Brothers Ranch. These landowners approached Conservation Basics and the Caribou Soil Conservation District about the possibility of working on a couple small diversion structures and installing off-stream watering facilities to reduce livestock impacts on Grizzly Creek, Lower Corral Creek, and the Blackfoot River, as well as a riparian fencing project on 80 acres adjacent to Grizzly Creek.

The Upper Blackfoot Diversions and Off-stream Watering Project reduced livestock impacts impairing water quality installed seven (7) different off-stream watering facilities and excluded 80 acres along Grizzly Creek.

The Upper Blackfoot River Diversions project has been coordinated with IDEQs Pocatello Regional Office, Caribou County, Idaho Department of Lands, and the Idaho Soil and Water Conservation Commission. BMPs installed include the following: sump well, fence, heavy use protection, solar pumping plant, prescribed grazing, pipeline, riparian access control, spring development, use exclusion, watering facility, and water well. These BMPs are expected to last a minimum of 20 years. All BMP designs are in accordance with Soil Conservation District Law (I.C. 22-2716).

**The goals of the Upper Blackfoot River Diversions & Off-stream Watering Project were to reduce livestock impacts, sediment, and nutrient loads in tributaries to the Upper Blackfoot River by:**

- Working with landowners to reduce livestock impacts on tributaries of the Blackfoot River.
- Improve grazing management with riparian fencing and off-stream watering facilities.
- Allow riparian areas to recover for 3 years with no grazing and instituting a grazing management plan for the producers to follow after the exclusion and rest. This will allow the producers to utilize the riparian areas for either two weeks in the spring or two weeks in the fall to prevent the riparian areas from turning into a weed source for downstream producers.
- Improve range riparian sites by installing solar powered pumping systems to spread water across grazing ground to improve riparian and livestock health. Also to improve sage grouse habitat by providing alternative watering sources and spreading out grazing livestock.

The Upper Blackfoot River has “high” priority ranking for phosphorous, and nutrients. However, the Upper Blackfoot River is ranked “low” priority for sediment. These are in the Tier 1 category for treatment units in the Blackfoot River TMDL Agricultural Implementation Plan (ISCC, 2005).

## Background

In 2015 the Caribou Soil Conservation District made a goal to work with willing landowners in the Upper Blackfoot River Watershed to implement conservation practices, working toward improving water quality and improving Yellowstone Cutthroat Trout (YCT) habitat.

The district charged Conservation Basics LLC., with finding willing landowners within the target area of the Upper Blackfoot River Watershed to participate in conservation projects, then to seek funding sources to off-set the cost. Conservation Basics visited with three cattle associations whose properties were in the target area about their interest in participating. After explaining the proposed project and the benefits that such a project could have not only on the environment but on their individual properties as well, Banks reported to the Caribou SCD that he had the foundation for another great project.

In July of 2018 the Caribou SCD submitted a 319-grant application to IDEQ which was approved in 2019. In the fall of 2019 contracts were drawn up between the Caribou SCD and the grazing associations and those other individual landowners participating in the project.

One thing the Caribou Soil Conservation District tries to do is find willing partners to participate in their grants to help alleviate the amount of money participating landowners have to come up with out of their own pockets. The goal of the Caribou SCD is and has always been to work with willing landowners on a voluntary basis to protect and enhance our natural resources to be able to ensure that what we enjoy today will be available for generations to come.



Bill Lillibridge, ISWCC Engineer, walks back to his base station upon completing a survey for a stockwater system, UBR Photos.

## Past Efforts:

IDFG currently manages the Blackfoot River, its tributaries, and the Blackfoot Reservoir as a Coldwater fishery with Rainbow trout, Mountain whitefish, Brook trout, and Yellowstone Cutthroat trout present (IDFG, 2001). From 1994 to 1997, IDEQ conducted BURP assessments on the Blackfoot River and several of its tributaries (IDEQ, 2001). From 1997 to 2000, 85 miles of river and creek reaches were assessed by BRWC, ISCC, IDEQ, IDL, BLM, IDFG, FS, and NRCS staff to determine proper functioning and erosion conditions in the sub basin (ISCC, 2000). In 2002, BLM finished their Blackfoot River Wild and Scenic Eligibility Study and Tentative Classification (BLM, 2002).

From 1997 to 2000, seventy reaches were assessed on approximately 85 miles of rivers and creeks in the Blackfoot River subbasin. BRWC, ISCC, IDEQ, IDL, BLM, IDFG, FS, and NRCS staff assessed where permission was granted by the landowners. The teams didn't assess where permission wasn't granted. They completed field sheets at each reach.

Caribou SCD Implemented the Upper Blackfoot River Off-Stream Watering Project Phase 1 which completed in 2017. The project saw the implementation of several Off-Stream Watering Projects, a 110 Acre Use exclusion on War Bonnet Creek. This project has proven to be extremely successful.

Trout Unlimited and IDFG are currently Installing a project on Idaho Fish and Games Wildlife Management Area near the Blackfoot Narrows.

## Organizational Structure

The Caribou SCD is comprised of seven locally elected board supervisors who serve on a voluntary basis. There is one full time district employee and 1 associate board member who are non-voting members but serve in an advisory capacity. Technical assistance for this grant was provided by Conservation Basics, LLC, and the Idaho Soil and Water Conservation Commission.

The Caribou Soil Conservation District set a goal to implement BMPs within the Blackfoot River and its tributaries as part of their five-year plan established in 2017. The district wanted to address animal feeding operations, overgrazed range and pasture issues, as well as nutrient and sediment inputs to the Blackfoot River Watershed. The Caribou SCD initiated this goal with an open-minded approach to work with willing landowners who came forward with projects that met the goals of the district.



This photo shows the pipe and pump being set in a well which was dug near Poison Creek, UBR Photos.

## Accomplishments

The cooperation of landowners and partners made the Upper Blackfoot River Diversions and Off-stream Watering Project successful. The ability to communicate with each other throughout the project was the leading factor of success. The Upper Blackfoot River Project saw the installation of 3,600 Feet of fence, 1 water well, 3 sump wells, 3 spring developments, 69 Loads of heavy use protection Gravel, ~15,000 feet of pipeline, 6 solar pumping plants, 23 watering facilities (troughs), and 80 acres Access Control.

## Cumulative Load Reductions

A Stream Erosion Control Inventory (SECI) was completed in the fall of 2021. Impacts were reduced from ~1,200 head of cattle to Grizzly Creek, Corral Creek, Grizzly Creek, and Five Springs. The 2021 inventory estimates showed the eight project sites treated in the grant will reduce nutrient loading in the Upper Blackfoot Watershed by approximately 15.89 tons/year.

Stream Name	Nitrogen Reduction (lbs./yr.)	Phosphorous Reduction (lbs./yr.)	Total Suspended Sediment (Tons/yr.)
Grizzly Creek	N/A	676	3.5
Corral Creek	N/A	1200	4.3
Poison Creek	N/A	875	3.99
Graves Creek	N/A	1,000	4.1
<b>Total Cumulative Savings</b>	<b>N/A</b>	<b>3,751</b>	<b>15.89</b>

*\* The calculations for the inorganic nitrogen and phosphorous were taken from the Nutrient Management Manure Calculation Sheet from the Department of Agriculture.*



## Monitoring

During installation the Project Coordinator and ISWCC technical staff, and ISWCC engineer certified to the Caribou SCD that BMPs were installed to meet NRCS standards and specifications. After implementation was complete, the installed BMP's have been monitored qualitatively by conducting BMP effectiveness monitoring. BMP Effectiveness monitoring involves on-site inspection of projects to verify that they are operating properly and are effectively improving water quality. Also, BMP effectiveness monitoring involves taking photos before, during, and after implementation to show visible results. Photo monitoring occurred and will continue to occur throughout the watershed to determine changes in water quality, riparian health, and resource condition due to BMP implementation. Long-term monitoring will be done by the Caribou SCD and ISWCC and will involve inspections to ensure installed BMPs are operating properly. Photos have been cataloged and are available for comparison of the project from beginning to post-implementation.

### *Photo Points-*

Presentations about this project to photo points were established to show the progress of each BMP before, during, and after installation. These photo points will also be used to track the condition of the BMPs throughout the life span of each project. Photos will be used in this final report document, as well as, in showcasing to other landowners who might be interested in participating in future 319 projects. What type of projects can be done to not only improve the environment, but their individual operations as well. Photos of each of the respective sites participating in this project are located throughout this written report and at the end of the narrative.



Above: The above photo shows one of the newly installed Tire Troughs on the Lower Corral Creek System.

Due to the Covid-19 Pandemic, Caribou SCD was unable to hold a Public tour to showcase this project to the public. However, the Caribou SCD did you're the sites as a board in 2020. Caribou SCD is planning to showcase these installed BMPs on their 2022 Tour for landowners to see what has been installed and how those BMPs are working.



These photos above and below show one of the Solar Pumping Plants which was installed as part of the Corral Creek System. The lower photo shows one of the flow through troughs installed as part of the Grizzly Creek system (spring Development).

## Financial Summary

319 Funds Spent	Project Match Spent	Match Use Percentage
\$165,239.38	\$130,773.13	44.19%

Funding Source	Original Amount	Amount Spent	Current Balance
319 sub-grant S540	\$164,239	\$165,177.38	\$938.38
All Match	\$117,818	\$130,773.13	\$12,955.13
Totals	\$282,057	\$295,950.51	\$13,893.51



Above: This is a sump well and solar pumping plant on adjacent to Corral Creek. This system services both Corral Creek and two unnamed springs.

The Upper Blackfoot River Diversions Project proved to be successful. BMPs installed through this project were installed with pride and accuracy and last into the future. It is nothing short of amazing that projects such as the Upper Blackfoot River Diversions Project are as successful as they are, because of the many moving parts in the process. What begins as an idea is truly transformed into something not only the agency personnel can be proud of, but something the landowners can be proud of and show off to their neighbors as well.

The 319-grant program has proven itself repeatedly to be invaluable in the aspect of cooperation from landowners, other agencies, and data collected through Caribou SCD's BMP Effectiveness Monitoring. The enthusiasm of the participants in completing their projects on time, the hard work of the project coordinator, and the dedication of the engineer helped to make sure the projects were completed in a timely matter.



Although the 319-grant program has become very competitive throughout the past few years, the Caribou SCD is committed to continue using the program to assist other landowners in the Upper Blackfoot River Watershed.

## **Acknowledgements**

Current Caribou Soil Conservation District Board members, Wilder Hatch, Bret Torgenson, Jeanie Lloyd, John Lau, Sherman Toone, Robert Comish, Rulon Wistisen, and Pat Lozier (associate member) wish to thank the project participants, and cooperating agencies, cities and Caribou County for their assistance and hard work enabling the design, implementation and completion of these projects.

The willingness of the participants to undertake these projects allowed for a great deal of work to be accomplished in the watershed over the past two years. Thanks to Julia Archibal, Lynn Van Every, and Bonnie Ricord of IDEQ for their support and assistance.

The Caribou SCD thanks Chris Banks, project coordinator of Conservation Basics LLC, Bill Lillibridge, ISWCC Staff Engineer, George Hitz, ISWCC Technical Assistance, and Pauline Bassett, Office Administrator, for pulling all of this together. Caribou SCD thanks Steven Smith, IDEQ for his help in guiding the district through this grant. Also, thanks to Larry Mickelsen, NRCS District Conservationist, our invaluable partner.



This photo shows the well and solar pumping plant which were installed to alleviate livestock pressures to Poison Creek. This system pumps water to a 17,000 gallons storage tank and then it gravity feeds out to three troughs.

## Photo Documentation of the Upper Blackfoot River Diversions and Off-Stream Watering Project



Above: This is Livestock water system which reduces livestock pressure from Grizzly Creek and Thompson Creek. Two Frost Free Hydrants were installed in a corral system to reduce the need for cattle to need to go the creek for water. Below: This is a 17,000-gallon storage tank which holds the water pumped by the solar pumping plant, and then sends water through gravity flow to the troughs.



