

SWEET WATER

SFG – NEWS AND UPDATES

Sweetwater has been quite busy. From fish and insect stockings to aeration and stream enhancement, Sweetwater covered a lot of ground! Read on to see a little bit of what we've been up to and see how our products and services might apply to you:



Fishery Enhancement - Jackson County, Colorado

Grizzly Creek, Walden CO

Grizzly Creek in North Park is a low gradient stream thick with beaver dams and riparian cover. From Highway 14 one might think that is all there is but taking a closer look reveals that this 1.5 mile reach has not only the dams and cover but also good stretches of gradient and deep bends on just about every corner.

while preserving the existing beaver dams to maintain the all important refuge areas when flows get low in the late summer months. We also installed an OHV trail the length of the reach to ensure access to the entirety of what this reach now has to offer.

What it's missing is in-stream habitat to allow fish to occupy more than just the deep bends and occasional undercuts. Access is also a major limitation along Grizzly as the riparian is mostly an impenetrable thicket of willows.

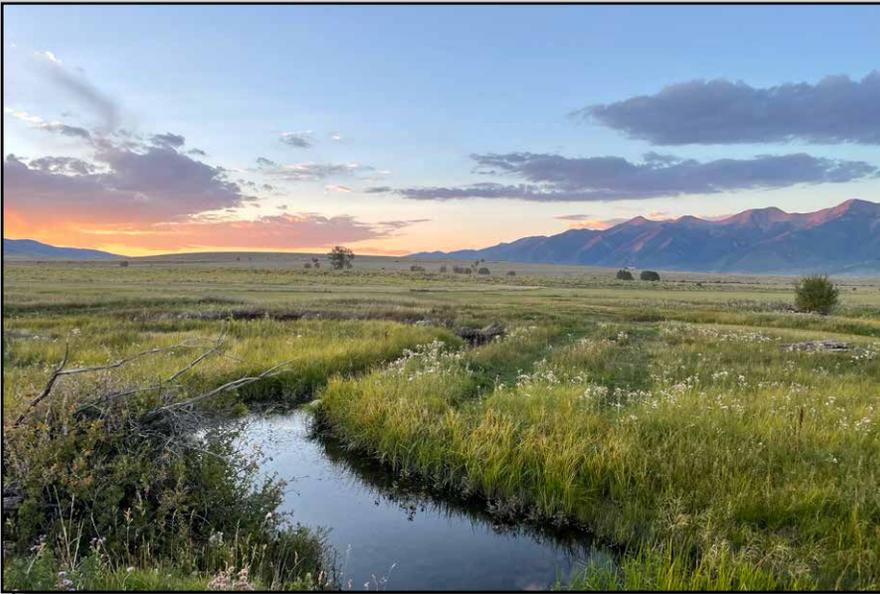
Fishery Enhancement -Routt County, Colorado

Sweetwater set about remedying both limitations by providing an abundance and variety of in-stream habitats

The Elk River is widely known to be one of the better large freestone rivers Colorado has to offer. Like much of the Elk River, at lower flows this 1.5 mile reach forced fish to concentrate in a few deep bends and at high flows gave them nowhere to rest and hold. A dense river bottom riparian zone also made access to the upper half of the reach a near impossibility.



Elk River, Steamboat Springs CO



Kerber Creek, Villa Grove CO

Elk River cont...

Sweetwater set about designing ideal habitat for flows ranging from over 4000cfs during peak runoff to under 50cfs in late summer, and designing an OHV trail to enable access to it all. A wealth of bed-form modifications and structures made sure that fish have more than enough to choose from regardless of season, as does the angler. Many of the riffles were also greatly enhanced to promote insect productivity and ultimately recruitment of more fish into the reach.

Fishery Enhancement -Saguache County, Colorado

Near the small town of Villa Grove, Kerber Creek flows like an oasis through a thirsty landscape. With a resident population of hardscrabble brook trout, this little creek suffered from a severe lack of habitat to protect against extreme flow swings.

A complex 2.4 mile project, Sweetwater had to both provide harbor from frequent flash flooding while at the same time providing refuge for the extreme low flows that typify this watershed.

An extensive mix of grade control, deep pools, sediment transport structures and transition areas were constructed. Because this is also a working ranch,

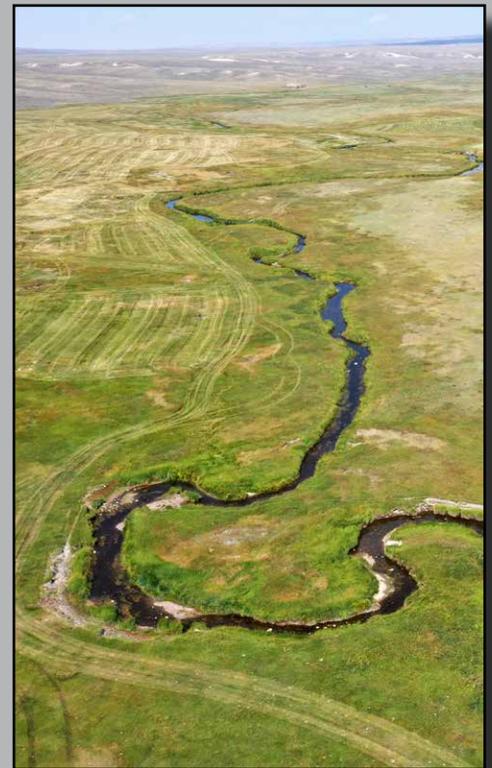
several large culvert structures were installed to allow ranch personnel and machinery to enjoy formal crossings, eliminating many of the difficulties of ranch navigation.

Fishery Restoration -Albany County, Wyoming

Gaining momentum before it's run through the Laramie Range, the North Laramie River first crosses through a number of working ranches in it's upper basin. For nearly two miles on this reach, the river had long served as primarily a support resource for extensive hay and cattle operations.

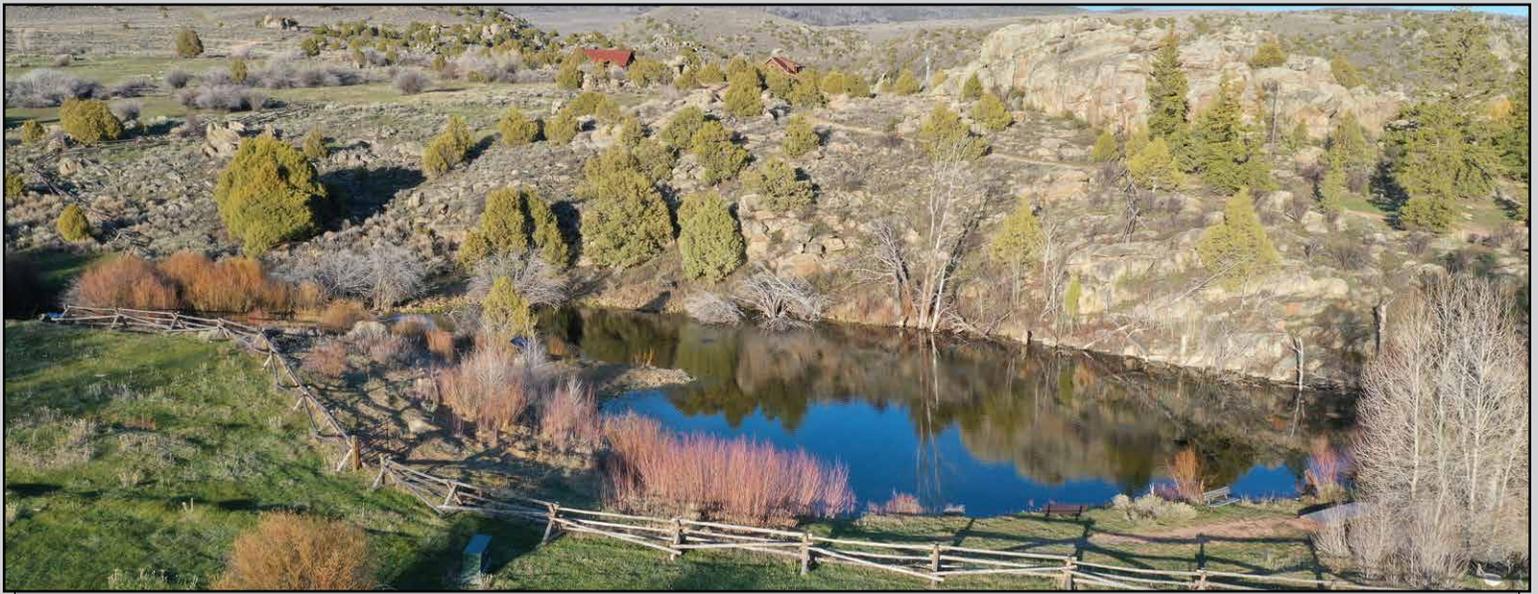
New ownership reached out to Sweetwater to see if a quality fishery could coexist with current operations to make a fully developed resource.

While the reach had excellent potential, it was desperately lacking in pools, riffles, thalwegs, habitat diversity and in many areas a much too wide width to depth ratio.



North Laramie River, Garrett WY

Sweetwater began addressing and correcting these shortcomings along with initiating extensive dialogue with the agricultural managers to establish a fencing



helping these groups get their arms around these often complex considerations and bringing ideas and realizations that are often overlooked. This trend continued in 2019 with Sweetwater assisting numerous owners and buyers, often working in partnership with their land professionals to provide the information needed to make these big decisions.

SWEETWATER FISH AND FORAGE

Sweetwater's fish offerings have long been the industry standard for excellence and 2023 is no different. SFG has continued to stay ahead of the curve by making certain we have not only our 14+ pound trophies ready to go, but a full range of sizes to tackle any fish stocking need.

Complimenting our superb fish are the forage bases to match. Often an afterthought, forage is the single most important component next to habitat to ensure a sustainable, high quality fishery. To address this need, Sweetwater

offers fathead minnows along with an industry exclusive Freshwater Shrimp (*Gammarus lacustris*) rearing facility to bolster a lagging, mature fishery or accelerate a new amenity. As always, the SFG fish and forage is in high demand so contact us early for your fishery management needs.

LET'S TALK ABOUT POND MANAGEMENT

The importance of proactive pond management and aeration are difficult to understate. The benefits of quality aeration are very well established and should be a top priority for pond/lake owners and managers. Many clients each year take the leap and are overjoyed by the results. Their ponds are clearer, fish are healthier, insects are more abundant,





Sweetwater Solar Aeration Cabinet

winter kill is virtually eliminated and the need for chemicals reduced or removed.

We also get calls every Spring from owners who made a different decision and have suffered winterkill, have skinny fish with big heads, a noxious smell from their ponds and later in the season, overwhelming weeds and algae.

While the debate about aeration's effectiveness and the science within has been over for quite some time, a bit of technical information can make the picture more clear for those who may not be familiar with some of the pond cycle processes and how aeration aids in pond prosperity.

Lake-bottom aeration is the process of introducing diffused air to the pond bottom, oxygenating and circulating pond

water. Without proper aeration circulation, ponds and lakes can become stratified, trapping toxic gases (ammonium and nitrogen) as well as decomposing organic

matter to the pond bottom. Decomposing matter consumes oxygen through different biological processes, often depleting all available oxygen in this lower layer needed by fish and macroinvertebrates.

In addition to minimizing the effects of trapped toxic gasses, aeration de-stratifies the water column and raises dissolved oxygen. This allows fish and other aquatic inhabitants to occupy all areas of the water column as well as reduce the negative effects of pond turnover.

Aeration, along with Sweetwater's innovative fisheries management techniques, afford our clients a productive and sustainable aquatic ecosystem. *Contact us to learn how we can help you achieve your fishery goals!*



SWEETWATER

FISH HABITAT ENHANCEMENT GROUP

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A LOOK AT SFG SERVICES

River Restoration:

- Full-scale scientific data collection and CAD based stream design
- U.S. Army Corps and state and federal agency permitting
- Fish and macroinvertebrate habitat improvement
- Structural implementation and construction

Fisheries Science:

- Electrofishing population surveys and reporting
- Benthic Macroinvertebrate studies and forage base analysis
- Fishery management and consulting

Stream Corridor Analysis:

- Riparian plant species inventory
- Riparian identification & classification
- Riparian condition assessment
- Wetland delineation

Stillwater Development:

- Pond engineering and design
- Construction and lining (natural & synthetic)
- Aquatic habitat management
- Custom aeration design & installation

Fishery Stocking Services:

- Trophy Trout
 - Brown Trout
 - Brook Trout
 - Rainbow Trout (Multiple Species)
 - Cutthroat Trout
- Forage base stockings
 - Freshwater Shrimp (*Gammarus lacustris*)
 - Fathead Minnows (*Pimephales promelas*)



Sweetwater conducting a fish population survey



Detailed stream corridor analysis



Sweetwater's Freshwater Shrimp nursery