FRIENDS OF THE TETON RIVER

FARMS & FISH PROGRAM

Producer Incentives & Resources

Farming in the Tetons

The Teton River Watershed is located in eastern Idaho and is one of the three watersheds that make up the Henry's Fork Watershed. The Teton River drains just over 1,000 square miles in Idaho and Wyoming with the headwaters originating in the Teton Mountain Range, The Snake River Mountains, and the Big Hole Mountains. The Teton River Watershed is characterized by a short growing season, approximately 49-65 frost-free days each summer, with average total annual precipitation between 12.5 inches in the lower watershed and 18 inches in the upper watershed. Cropland and pasture is on private land (both irrigated and non-irrigated lands) and makes up just under 70 percent of the land use in the upper Teton watershed. Primary crops grown include barley, hay (forage), potatoes, wheat and more recently quinoa and buckwheat. Livestock, primarily beef cattle and a few niche livestock operations, also play an important role in the agricultural economy.

Farms & Fish Program

The Farms and Fish Program is focused on improving the health and productivity of agricultural lands in the Teton River Watershed to improve local water resources, increase the viability of family farms and ranches, and preserve Teton Valley's cultural heritage. Measurable improvements in soil health and farm profitability have been quantified on demonstration plots and adapted to the unique climate and conditions of Teton County, Idaho. In addition to having significant benefits on farms and ranches, improving soil health on agricultural lands in the Teton River Watershed will have a significant positive impact on water quality and quantity.

On The Ground
The Farms and Fish Program builds upon a highly successful effort that continues to demonstrate, evaluate, and verify that agricultural best management practices (BMPs) including experimentation with perennial crops, cover crop application, conservation tillage, crop rotation, and innovative grazing management can be effectively used in Teton County, Idaho.

Producer Led
Through the Farms and Fish Program, FTR has worked with over 15 producers to implement regenerative practices on 4800 acres in the Teton River Watershed. Participating producers monitored soil health and saw improvements in organic matter, water holding capacity, and improved yields.

Peer to Peer Collaboration
Knowledge shared through producer-led workshops and field visits to demonstration farms leads to increased adoption of BMPs in Teton County and in other high desert areas of Idaho and the Intermountain West.

Healthy soils can reduce soil erosion and more efficiently cycle nutrients, reducing both sediment and nutrient runoff into local streams and waterways.

Healthy soils can also hold more water, making crops more resilient in drought conditions, a valuable asset to farming and ranching in a semi-arid environment.

Visit FTR's website tetonwater.org for upcoming education events and producer resources.

Soil Health Principles

Soil health is defined as "the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans." A holistic view of soil health considers chemical, physical, and biological properties of soil and can be broken down into five guiding principles.

1. Keep the soil covered
Keeping the soil covered year-round with crop residue or living plants can help reduce wind or water erosion, reduce evaporation rates, moderate soil temperatures, and reduce weed pressure.

2. Minimize soil disturbance
Minimizing chemical disturbance (over application of fertilizer, herbicide, fungicide, insecticide, etc.), biological disturbance (long fallow periods), or physical disturbance (tillage) improves overall soil health and structure. Physical soil disturbance, or tillage, leads to soil that is more susceptible to wind and water erosion, reduced water infiltration, and increased soil compaction.

"Soil is not an inert growing medium - it is a living and life-giving natural resource. It is teaming with billions of bacteria, fungi, and other microbes that are the foundation of an elegant symbiotic ecosystem."

Learn more through the USDA/ NRCS soil health webpage

3. Increase plant diversity
Increasing plant diversity mimics natural systems and in turn reduces disease and pest pressure, improves nutrient cycling, increases water infiltration rates, and can reduce the need for inputs such as fertilizers, insecticides, herbicides, and fungicides.

4. Maintain continuous living plants/roots
The roots of living plants release sugars that feed the soil food web, improving the biological health of the soil and, as a result, improving nutrient cycling.

5. Integrate livestock
Livestock can play an important role in building soil health and function. Properly managed livestock in a perennial grazing system or the proper integration of livestock in an annual cropping system can improve soil health, biological activity, moisture efficiency, and nutrient retention and cycling.

These five principles can be applied to any production system to maximize the soil building impact and improve overall soil health. However, the specific tools used to implement each principle will differ for each operation. In the Teton River Watershed, improving soil health on farms and ranches can lead to improved farm productivity, improved water quality, increased water holding capacity, and increased drought resilience.

Soil Health Monitoring

Essential Information to Optimize Productivity
Soil health monitoring is essential for farmers looking to optimize their crop yields and ensure the long-term productivity of their land.

There are several methods available for assessing soil health, here are some of our favorites:

1. The Haney test provides insights into the biological health of your soil by measuring parameters like organic matter content, microbial activity, and nutrient availability. Soil organic matter directly impacts soil fertility and structure. Monitoring will reveal how well your soil retains water and nutrients, supports microbial life, and resists erosion.

2. Water infiltration tests are valuable for understanding how quickly water penetrates your soil. Higher infiltration rates are linked to root growth and reduced runoff and erosion. Similarly, soil compaction tests help you assess soil resistance, which affects root development, water movement, and air exchange. Compacted soil can hinder plant growth and cause drainage problems.

3. Nutrient Management Planning is crucial for optimizing nutrient use efficiency and minimizing environmental impacts. Plant sap analysis can be used to gain real-time data on nutrient uptake that guides fertilization strategies.

By incorporating soil health monitoring into your farming practices, you can make informed decisions that improve yields, reduce input costs, and enhance the resilience of your agricultural system. Even if you're new to soil health monitoring, these methods provide valuable insights for sustainable and productive farming.

A Partnership for Soil Health and Precision Management

The Farms and Fish Program partners with Living Soil Management and Simplot's SmartFarm program to offer producers a range of benefits, from improved productivity and profitability to enhanced sustainability and resilience in tough conditions. To date, producers have used advanced technologies like soil sampling, sap analysis, moisture monitoring, and satellite imagery to effectively enable precision and regenerative agriculture practices on their individual fields or on their whole farms

Living Soil Management's Soil Health Protocol is a comprehensive system designed to help farmers assess and improve soil health through biology. It starts with soil sampling and analysis, capturing data on key indicators like organic matter, nutrient levels and biology, with a focus on key indicators, like weeds, that tell the story of what is out of balance. Based on this analysis, personalized recommendations are provided and added to the compost extract and applied. Continuous monitoring allows farmers to track progress and adjust strategies as needed using sap analysis in season. This partnership also offers education and support to ensure successful implementation. Overall, the protocol empowers farmers to optimize soil health, enhance crop productivity, and promote sustainability in agriculture.

Meet
Shilo Bingham

Shilo is a local farmer/consultant that works full time for Living Soil Management as a Regenerative Consultant. Shilo has been implementing regenerative practices on his ground for over 7 years and is committed to regenerating our lands, communities, and human health.

Shilo's commitment to restoring health to the land, people, and communities led him to develop a Soil Health Consulting program with Simplot and now with Living Soil Management.

Meet

Harley Hill

TETON VALLEY FARMER

Harley Hill is part of a long-standing farming tradition in Teton Valley and worked with Friends of the Teton River to implement agricultural BMPs on his farm. Through service on the Teton Soil Conservation District Board and participation in workshops and farm tours, Harley has been instrumental in fostering a culture of conservation among farmers in the watershed, empowering them to implement BMPs that enhance water quality, protect soil health, and promote the long-term sustainability of agricultural operations.

Soil Health Practice
Through Farms and Fish funding, Harley incorporated a perennial alfalfa rotation that offered numerous benefits, notably in terms of reduced tillage and planting costs. Alfalfa's deep root system improves soil structure and fertility, minimizing the need for extensive tillage while enhancing soil moisture retention and nutrient cycling. Its perennial nature means less frequent replanting compared to annual crops, reducing overall planting costs and labor inputs. Additionally, alfalfa fixes atmospheric nitrogen, reducing the need for synthetic fertilizers and improving soil health over time. The dense alfalfa canopy suppresses weed growth, further decreasing the reliance on herbicides. Moreover, alfalfa provides high-quality forage for livestock, contributing to sustainable feed production and potentially diversifying farm income streams through hay sales. Overall, integrating perennial alfalfa into crop rotations has offered farmers in Teton Valley multiple advantages, including farm sustainability, cost savings, and improved farm productivity.

"It's a good thing to promote perennials because it helps with soil erosion and water retention. On my farm longer alfalfa rotations help cut down on chemical use which eases the transition to organic farming."

-Harley Hill

Meet

Robert Piquet

TETON VALLEY RANCHER

Along with his wife and two children, Robert Piquet manages many acres of ranch land in Teton Valley. The Piquets raise cattle and poultry, pursuing their passion to be good stewards of the land and livestock under their management. They see innovation to create a sustainable business and environment as imperative to meeting their goal for generational ranching in the Teton Valley. Robert worked with FTR through the Farms and Fish program to improve his managed grazing operation along the Teton River.

Soil Health Practice
Farms and Fish funding supported watering infrastructure improvements and streambank restoration for Robert's management intensive grazing practice along the Teton River. Management intensive grazing is a method of livestock management where animals are rotated frequently through small paddocks or sections of pasture. This approach aims to mimic natural grazing patterns, allowing forage to recover while optimizing the utilization of pasture resources. Livestock are moved to fresh grazing areas regularly, often daily or every few days, to prevent overgrazing and promote healthier pastures. This system enhances soil health, increases forage productivity, and can lead to higher animal performance and farm profitability. Over time, the Piquets developed partnerships to achieve their goals; like working with the Natural Resources Conservation Service to develop grazing systems and the Teton Soil Conservation District to gain access to producer education.

"If you pass by the land we operate on the west side of the Teton River you might notice that our methods are not the same as you see on other ranches. We use livestock as a tool to regenerate land. Simply put, we replace purchased fertility (fertilizers and soil amendments) with animals. By controlling the time, acreage, and number of animals on a section of ground, we are able to restore fertility and productivity to the land."

-Robert Piquet

Meet

Daniel Wilcox

FARMS AND FISH
PROGRAM MANAGER

Daniel Wilcox was born and raised on a farm and ranch just southwest of Rexburg, ID. Since 2017, the farm has been experimenting with regenerative agriculture practices such as interseeding, cover cropping, intensive rotational grazing, and composting. Daniel earned a Bachelor's Degree in Agricultural Systems Technology from Utah State University in 2014. He then spent five years as a precision agriculture sales consultant at the local John Deere dealership before joining the Henry's Fork Foundation in 2020 as the Farms and Fish Program manager for the Upper Snake Collaborative.

Daniel's commitment to sustainable agriculture and preserving family farms drives his work to actively facilitate connections between agricultural producers and alternative funding sources. His collaboration with producers ensures that farmers and ranchers receive funding to implement practices that benefit soil health on local farms, improve water quantity and quality in our streams and rivers, and keep agriculture operations working for many years to come. While transitioning to regenerative practices may require upfront investment and adjustments in management, the long-term benefits can enhance farm profitability. Improved soil health can lead to higher yields, reduced input costs, and resilience to extreme weather events, ultimately contributing to the economic sustainability of farms.

To succeed, implementing regenerative agriculture requires tailored approaches considering a farm's specific climatic conditions, soil types, and farming systems. Additionally, market incentives for sustainable products can further encourage the transition to regenerative agriculture in the Upper Snake Basin.

"For me there's a deep-seated responsibility to honor the legacy and traditions of farms and ranches while navigating the complexities of modern day challenges. Many agriculture-producing partners understand this balance and see the value in conservation efforts. It's about preserving what's important from the past while innovating for the future, ensuring that agriculture remains sustainable and resilient in the face of change."

-Daniel Wilcox

Incentives for Soil Health Practices

Work with us
Individual agricultural producers in Teton Valley and FTR have a shared interest in developing agricultural BMPs that improve soil health, reduce soil erosion, improve agricultural business returns, and improve water quality. The Farms and Fish Program supports producers who may be interested in development and implementation of BMPs such as conservation crop rotations, reduced tillage management, cover crop nutrient management, grazing and pasture management, and upland wildlife habitat enhancement.

How it works
Organizations like Friends of the Teton River play a crucial role in incentivizing farms to adopt regenerative practices by offering customized agreements, tailored to the specific needs and circumstances of producers. In this process FTR incentivizes the producer for their knowledge and skills, as well as access to the land, water, labor, and equipment resources necessary to conduct and evaluate experimental agricultural practices intended to meet the objectives of the program.

Types of Incentives
Creating agreements with farmers to implement agricultural BMPs involves a nuanced approach that considers the unique characteristics of each farming operation including variations in acreage, timing, monitoring, and compensation for the practices implemented. These agreements take into account various factors such as soil classification, irrigation availability, livestock management, weather conditions, recreation value, and farm profitability. Incentives may include financial support, technical assistance, access to resources and expertise, and participation in collaborative research or marketing initiatives.

The Farms & Fish Program builds upon the relationships cultivated with our farming community and over 20 years of watershed science and research. These partners are developing locally-based solutions for maintaining the viability and health of our working lands, open spaces, and stream corridors, while improving surface and ground water resources for the benefit of people, fish, and wildlife.

Partners & Resources

Partnerships foster a collaborative relationship between conservation groups and farmers, promoting mutual understanding and cooperation towards achieving shared environmental and agricultural goals.

Friends of the Teton River

Friends of the Teton River leverages local, state, and federal funds to provide technical expertise and financial assistance to farmers and ranchers who adopt regenerative and sustainable agricultural practices, helping to enhance soil health and water quality in the Teton River Watershed.

Daniel Wilcox | (208) 520-2137 | daniel@tetonwater.org

Henry's Fork Foundation

The Henry's Fork Foundation supports agricultural producers in the Henry's Fork Watershed, outside Teton Valley, interested in adopting practices that benefit both local agricultural producers and local water resources. Technical and financial support available.

Daniel Wilcox | (208) 520-2137 | daniel@henrysfork.org

Natural Resources Conservation Service

The Natural Resources Conservation Service offers voluntary programs to eligible landowners and agricultural producers to provide financial and technical assistance to help manage natural resources in a sustainable manner.

Jacob Owens | (208) 354-2680 | jacob.owens@usda.gov

Teton Soil Conservation District

The Teton Soil Conservation District provides educational opportunities for producers within Teton County, Idaho, such as educational workshops, organized farm tours, incentives to attend soil health workshops, and rents a 15' no-till seed drill to any Teton County producer.

(208) 354-2680 ext. 4 | tetonscd@silverstar.com

The Nature Conservancy

The Nature Conservancy can provide technical and financial assistance to producers implementing eligible regenerative practices. Support can range from contractual agreements that will help producers by minimizing financial loss associated with implementing regenerative practices or technical support for any producer interested in adopting regenerative practices.

Brad Johnson | (208) 521-8058 | bradley.johnson@tnc.org