



# water lines

WINTER 2018/2019



Sharing Success



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Tour participants climb aboard to visit local farming and ranching operations.

# Thanks for Getting on Board



## Dear Friends,

This summer, FTR was honored by an invitation to participate in the Teton Valley Farm and Ranch Tour, hosted by the Teton Valley chapter of the Idaho Farm Bureau. More than one hundred participants spent a beautiful August afternoon learning about collaborative efforts that are taking place on local conventional family farms and ranches to support agricultural practices with conservation funding.

In Idaho, both agriculture and outdoor recreation—including fishing and other river recreation—are multi-billion dollar industries, and both industries contribute to a strong and diverse economy in our state and our valley. Numerous studies also show a strong tie between outdoor recreation and conservation spending. However, it seems to be a commonly held belief that commercial agriculture, recreation, and conservation are competitive industries—many of us perceive that if one is strong, the others have to suffer. This belief seems to be at the root of much of the pervasive conflict between conservation, recreation, and agriculture interests in the American West.

Perhaps what is most unique about the work happening in Teton Valley is that agriculture, conservation, and recreation partners are working together to find ways to make these industries complementary. Through these collaborative efforts, we are discovering that we share far more in common than we ever imagined, and that our industries can be very complementary when we are willing to work together.

As we saw on the farm tour, well managed farms can have great benefits for water and aquatic ecosystems, and recreational users and conservationists can support changes that family farmers and ranchers want to make, as well as the persistence of these farms even when development threatens their economic viability.

*Amy Verbeten*

Amy Verbeten  
FTR Executive Director



Morgan Piquet explains the benefits of planting cover crops for their cattle to graze.



The youngest tour participants get up close with tour demonstrations.

# Faces of the Farm Tour



**ZAK MILLER**  
Director of Commodities & Marketing  
Idaho Farm Bureau Federation

*Why did the Idaho Farm Bureau co-sponsor the Teton Valley Farm and Ranch Tour?*

Working with the Teton Water Users Association really provided me with greater clarity that the agricultural community and FTR have many shared goals. Agricultural and conservation communities spend the majority of their time working to the same ends, but the terminology they use is so different that it can be challenging to realize this is taking place. As a result of our growing relationship, we felt it was a logical next step to share with the public what farmers and ranchers in Teton County do—what helps them, helps the entire valley.



**JAMES DEWEY**  
Crowfoot J Ranch & Meats  
Grass-fed & finished beef

*What was your biggest Farm Tour take away?*

We need open communication with all entities/parties that have an interest in learning about our [cattle] operation. You know, the thing is that [not everyone] will agree on certain aspects but we can learn to respectfully disagree and try to understand different people's views. I have learned that there are a lot of good people in the community ... that can share in the beauty of this valley. I hope that [this tour] can be an annual event. I think that something in the winter would be good and provide information on what's happened since the tour—what crops have been harvested, when we are weaning, calving, and pregnancy checking.



**WYATT PENFOLD**  
Penfold Farms  
Quinoa, Barley, Potatoes, & Buckwheat

*Why did you choose to participate in the tour and share the methods of precision agriculture?*

The main reasons I participated in the Farm Tour were to share all of the different types of stewardship that farming provides to the community and to dispel myths that farmers are harming the environment. The soil is our livelihood and needs to be used in a good way so that it will be here for the next generations. I wanted to show how precision agriculture gives you the ability to monitor, apply, and see results down to the per-acre level. We are able to track everything we put in and monitor what comes out so that we can make the farm money and not hurt any of the natural resources that we are trying to protect.



**HEIDI BLISCHKE**  
Teton Valley Resident & FTR Member

*Why did you choose to attend and what was the value of this tour?*

I am a retired hydrogeologist and interested in the health of the Teton River watershed. I wanted to learn how the farm and ranching community work together with FTR to be creative in taking measures to preserve soil and manage water use and chemicals, which help their businesses and protect the river. I am impressed at how well everyone works together, placing equal weight on figuring out ways to protect the river and preserve farming and ranching—such as moving back toward flood irrigation strategies to put water into the aquifer—which is good for farmers, ranchers, and fish. It is great to see people working toward common goals, and the field trip showcased this.

# Picturing Recharge in Teton Valley

## What is Recharge?

Aquifer recharge or “recharge” occurs when surface water is absorbed into the ground and becomes groundwater. In Teton Valley there is a great deal of interaction between surface and groundwater, water is recharged into the aquifer via precipitation, sprinkler irrigation, and water seepage in streams, ditches, and irrigation canals. Water that enters the aquifer moves through the ground more slowly than the surface water running downstream, and is delayed in its return to the Teton River.

## Why is FTR interested in Recharge?

By strategically recharging groundwater resources—intentionally recharging water to the sub-surface in specific headwater locations when water is plentiful—we are able to keep water “stored” just a little longer in the natural reservoir under our feet; replenishing groundwater supplies for household wells, and delaying water contributions to streams and wetlands, so that the river has a cool and consistent release of water from the aquifer in late summer when fish and wildlife need it most.

## How can Recharge help our community?

On average, less water is available from snowmelt and leaving Teton Valley earlier in the year, which has also left farmers with less water for irrigating crops, less water in wells and city drinking water supplies, and less water with higher temperatures in the Teton River to support fish and wildlife. By working with willing water rights holders and irrigators to actively recharge snowmelt into the aquifer, we can increase a more stable groundwater supply for all.

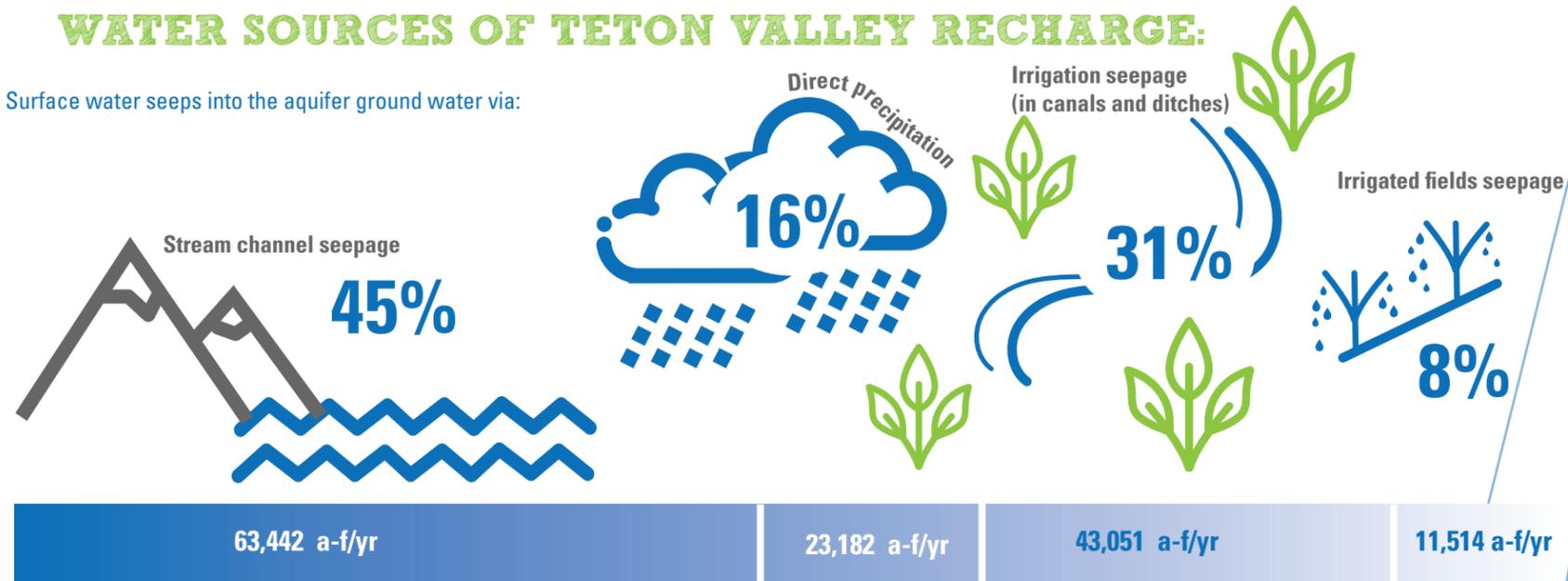
## Who are we working with?

A pilot recharge effort is being led and managed by the Teton Water Users Association—a group including FTR, agricultural producers, conservation groups, municipal and county leaders, and experts in hydrology and economics of the rural West; including the Teton Soil Conservation District, Farm Bureau, individual water rights holders, canal companies, FTR, the Henry’s Fork Foundation, and others—whose goal is to increase water levels in the aquifer and the Teton River. This will insulate farmers (and fish) against changes in water availability, while increasing water supply reliability, especially in times of drought.

*Coming from Amy interactions quote goes hers volut ad magnatur, odis et omnis as consed ut evelit et, intore magnimus porem simporer.*

## WATER SOURCES OF TETON VALLEY RECHARGE:

Surface water seeps into the aquifer ground water via:



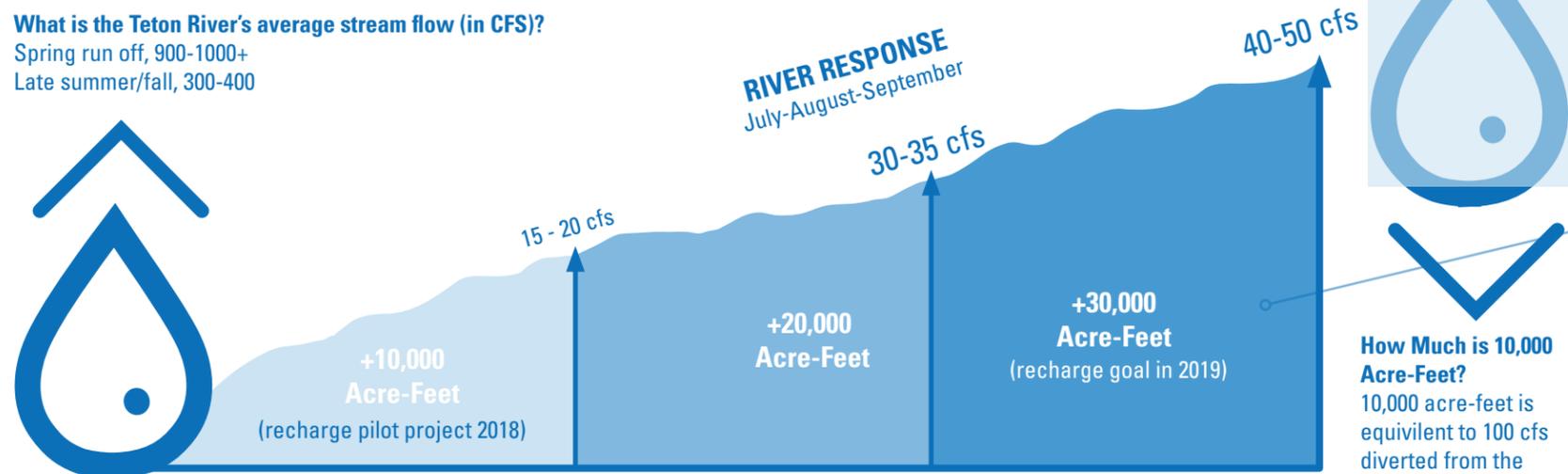
**TOTAL TETON VALLEY RECHARGE = 141,189 ACRE-FEET PER YEAR**

39% Contribution of agriculture to recharging the aquifer

## MANAGED RECHARGE PILOT PROJECT

### What is the Teton River’s average stream flow (in CFS)?

Spring run off, 900-1000+  
Late summer/fall, 300-400



**RECHARGE EFFORT** Additional water recharged in April-May-June. Amount in acre-feet.

**How Much is 10,000 Acre-Feet?**  
10,000 acre-feet is equivalent to 100 cfs diverted from the Teton River for 50 days.

## Did you know?

Irrigation canals and irrigated fields contribute significantly to recharging the aquifer. Of the water diverted into canals, 40 percent seeps into the ground as recharge, and only 25 percent of the water applied to fields is used by crops. So, about half of the water used for agriculture annually in Teton Valley (45,000 acre-feet) ends up back in the Teton River.

## What is an acre-foot?

Water managers and farmers talk about water in acre-feet. One acre-foot is the amount of water it would take to cover one acre (about the size of a football field) with water one foot deep. One acre-foot is 326,000 gallons. The average size Olympic swimming pool takes 2 acre-feet of water to fill.

## What is our plan?

FTR is working with irrigators to strategically use spring flows (April-June) to recharge the aquifer through strategic flood irrigation by running water through canals in the early-season, while conserving water later in the season (July-September) when stream flows decline. FTR has secured grant funding to test recharge strategies—irrigators and irrigation companies receive financial incentives to increase recharge in the spring using existing water rights. FTR is closely monitoring the recharge response by measuring groundwater inputs and stream flows in the Teton River. In 2018, we recharged an additional 10,000 acre-feet to the aquifer. Our goal in 2019 is to recharge 30,000 acre-feet to groundwater for a slow release to the Teton River.

**THE GOAL OF THE MANAGED RECHARGE PILOT IS TO CONVERT SURFACE WATER to groundwater in early spring (April-June) and CONSERVE water in summer (July-September).**

# Sharing the Load:

## Working together to reduce Teton Creek flood risk

*FTR continues to work with the community to stabilize and reconstruct a critically damaged stream channel and flood plain on Teton Creek. Although millions of dollars have been expended, and risk of loss has decreased, a great deal of additional work remains to be done. Success will only come as a result of numerous stakeholders working together to solve this challenging issue.*

In 2006, FTR was approached by landowners along Teton Creek who were concerned that the creek's banks had become highly unstable due to illegal dredging and channelization. This posed a significant risk to adjacent properties and the City of Driggs. FTR responded by forming the Teton Creek Stakeholders, made up of Teton Creek home and landowners, irrigators, and city, county, state, and federal partners.

Alterations were made to Teton Creek in the 1990s in order to develop along the creek's banks. This caused severe erosion and sediment build-up that has radically increased the risks to surrounding infrastructure when the creek floods. Unlike some streams, which are carved into stable bedrock, Teton Creek's stream channel and banks are made of sand, gravels, and rounded rocks that were deposited by past floods. In this type of stream, the channel is held in place primarily by the roots of streamside trees, and can move side-to-side within its floodplain even during relatively small flood events every few years. If stabilizing vegetation is removed or toppled by erosion, the stream becomes even more susceptible to movement, placing nearby homes and infrastructure at great risk of damage or loss.



An example of Teton Creek's recent side-to-side movement can be seen near the bridge on Creekside Meadows Avenue. The channel upstream from the bridge experienced rapid movement during a relatively small flood in 2006, washing away large amounts of land and vegetation, and destroying an asphalt bike path that had recently been built.

FTR and the Teton Creek Stakeholders, along with the Teton Creek Flood Control District, have been working together to assess and reduce the risk that floods will damage homes and infrastructure. These groups agree that the best way to do this is to protect and restore as much of Teton Creek's floodplain as possible.

It will take a great deal of continued cooperation and community dialogue about the potential risks inherent in developing near streams. It will also mean making some challenging decisions about what land is best left undeveloped, in order to proactively reduce the long-term costs to our community of floodplain development. Success will only come as a result of numerous stakeholders working together to solve this challenging issue.

## Importance of Flood Plains

- While flooding itself cannot be prevented, permanently protected floodplains act like "shock absorbers," reducing the severity, frequency, and cost of damage that can be expected when streams naturally flood.
- Permanently protecting and restoring Teton Creek's floodplain is by far the most cost effective solution for landowners, taxpayers, and the community.
- To date, almost 2 miles of critically damaged stream and 30 acres of Teton Creek floodplain have been restored, at the cost of more than \$3 million. The risk to our community has decreased, but a great deal of additional work remains to be done. More than 250 buildings built within the Teton Creek floodplain, and hundreds of additional structures, including much of the City of Driggs, are still at increased risk of damage or loss when a flood does occur.



# Sharing Success With Our Community

As we approach the end of another calendar year and field season, it's important to us at Friends of the Teton River to share our successes with you. It is only with your support that we're able to keep working together for the clean water and healthy streams we all depend on. We have had tremendous success in eighteen years, implementing programs and projects that have made a big difference in a relatively short time. Our organization truly believes that this is just the beginning of what can be accomplished as we continue to work together. It is our goal to continue expanding efforts that protect and improve the quality and quantity of water that our entire community depends to keep our families, our businesses, and our native species healthy for generations to come. This is a long-term vision to create substantial, measurable, and lasting change—and one that we hope you will support.

More than 100 community members attended the Farms and Ranch Tour in August.



High school students helped test nitrates at a free well testing day.

## Success for Farms & Fish

In two short years, you have helped us raise nearly \$60,000 in matching funds for our Farms & Fish Initiative, making us eligible for more than \$700,000 in state, federal, and foundation grants that have allowed farmers to experiment with no-till and cover crop techniques on more than 500 acres in Teton Valley; supporting canal companies to participate in an aquifer recharge pilot project; and hiring a multi-year shared staff member with the Henry's Fork Foundation to expand and monitor these projects throughout the watershed.

## Sharing Resources

Our community shares in our success, whether it's through watershed education programs, events and celebrations, public access improvements, cleaner drinking water, restored stream corridors, or a great fishing experience. Homeowners and residents have shared in the benefits of services and programs such as our septic pumping incentive program, a free well-water testing day, and the first household hazardous waste collection day, hosted and co-sponsored by the Teton County transfer station.

Ribbon cutting in September at the new Bates Bridge boat ramp.



Artist Helen Seay beautified vault toilets at River Access points.

## Partnerships Leverage Success

FTR, nonprofit partners, agencies, and organizations share expertise and leverage funding to accomplish large-scale projects that we couldn't do alone. Through effective collaboration with diverse partners, such as the Teton Regional Land Trust, Farm Bureau, Teton County, state and federal management agencies, Henry's Fork Foundation, Teton Soil Conservation District, Legacy Works Group, and many more, we are able to leverage joint funding for projects like the new Bates Bridge Public Access/Buxton River Park, the Teton Creek Corridor Project, the Teton River Economic and Recreation Study, and cutting-edge fisheries research and watershed monitoring programs.

**Our continued success relies on the support of people like you!**



Help us continue to steward these efforts with a renewed gift or an additional contribution at year-end, using the enclosed envelope.



Or, visit our NEW website and the Donor Box giving platform online, [www.tetonwater.org](http://www.tetonwater.org).

## CONTACT US:

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PHOTO: CAMRIN DENGEL

# How Much Water Is Here?

## Picturing annual water supply in Teton Basin

