



water lines

SUMMER 2019



Leading Together



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Cover Photo: Local dairy farmer Ron Hansen and his grandson. Photo by Camrin Dengel

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Friends of the Teton River

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Brian and Joselle Berry, owners and operators of Teton Valley Lodge.

Dear Fellow Friends of the Teton River,

I am one of the luckiest guys in the world. I was lucky enough to be born and raised on the banks of the Teton River. Lucky, because I have spent my life working on the river and still live, work, and raise my family on its banks today.

Challenges and changes have come to this beautiful valley, and it's not as quiet as it once was. The river is getting more and more crowded. And why wouldn't it? It's beautiful and magical. Without growth we wouldn't have as many challenges, but I dare say we wouldn't have opportunities before us either. The trick moving forward is going to be balancing the two.

When we look back, we often refer to the "good old days." And while I'm nostalgic in some ways, I wouldn't trade what we have now for anything. As my good friend Tom Fenger always says, "These are the good old days!"

There are so many things to be excited about right now in our valley and in our watershed. In my forty-one years of living on the Teton River, it has never been in as good of shape as it is today. And the health of the river is only improving. The current numbers of fish per mile absolutely blow my mind! It doesn't seem possible. Moose are more abundant than I can ever remember. Friends of the Teton River is a big part of this reality. Together, FTR and the partners working with them are showing us what's possible for the river and our community.

As we continue to grow—and grow up—more challenges will come. It's up to all of us to rise to the standard of the river. Can we measure up to that standard? Can we be worthy stewards for this incredible gift in our lives? I know we can. The only thing more incredible in this valley than the natural features are the people who live here. Whether rancher, outfitter, farmer, builder, life-long resident, or newcomer, we are all lucky—lucky to live here and to share this place with each other. Let's all take on the challenge of caring for the Teton River, and leading the way, to make sure we leave it better than when we found it.

Brian Berry

Teton Valley Lodge

Amy Verbeten
and daughter, Greta,
with the no-till drill.



Leading Together

At Friends of the Teton River, we envision a future in which all members of the Teton Valley community understand the importance of clean water and a healthy watershed, and voluntarily work together to take actions that protect and conserve the water resources we all share and rely upon.

We have come to recognize that, in order to enact this vision, it is critical that we walk beside the leaders within our community. On our way to achieving this vision, we know that it is our job to empower and engage a community of leaders who will actively cultivate and nurture a shared sense of stewardship for the Teton River watershed.

What does this actually look like on the ground? In this issue of *Water Lines*, we highlight work that is being done, through leadership and partnership, to protect and improve the Teton River, its resources, and the lives and livelihoods it supports. We have had the great fortune to walk beside community leaders as we craft conservation projects that are having a measurable effect on the ecological health of the Teton Watershed.

This includes stream habitat restoration projects along the Teton River that have been planned and completed with the voluntary participation of private landowners; implementation of agricultural best management practices by local producers, with the support of the Natural Resources Conservation Service, Teton Soil Conservation District, and Teton County Farm Bureau; fisheries research and improvement projects supported by irrigators, Idaho Fish and Game, Wyoming Game and Fish, the U.S. Fish and Wildlife Service; and many, many more.

We are seeing the results of this work, in terms of trout population recovery, water quality, and soil health improvements, and a level of stakeholder involvement that is only dreamed about in most watersheds. As our valley continues to see increasing use, demands, and development, we will continue to face challenges with clean water and healthy streams. It will be critical that we continue to walk together—developing community-driven solutions that ensure our river and our watershed are not “loved to death.”

It will take a diverse group of river stewards, working together, to actively educate the current and next generation of river users about responsible use. It will take a committed group of community leaders to guide development patterns and standards that protect water quality and ensure that residential and commercial development occurs in a water-conscious manner. And it will take a highly innovative and creative group of land and water stewards, who are willing to reach across fences and transcend boundaries, to determine how to ensure that well-managed family farms and ranches, which protect and steward water quality and quantity, can persist into the future despite the pressures of development.

Thank YOU for your willingness to walk beside us on this path. We are committed to working with you, long into the future, to ensure that Teton Valley is a model community for watershed stewardship.

Amy Verbeten

Amy Verbeten
FTR Executive Director

*“To lead people, walk beside them.
...As for the best leaders, the people
do not notice their existence.
When the best leader’s work is done
the people say,
We did it ourselves!”*

Lao Tzu

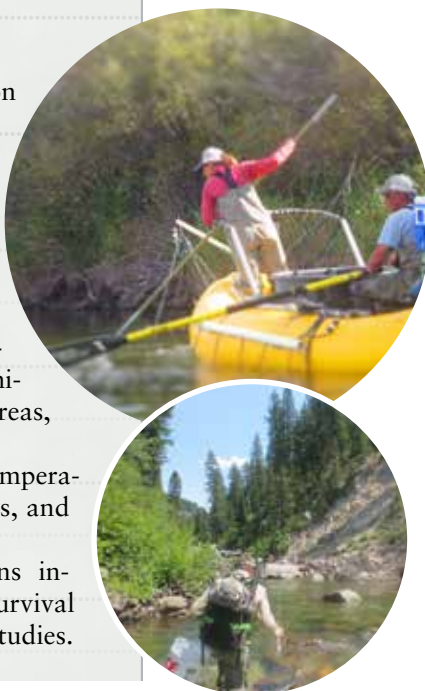
Leading the Field in

FTR's Contributions to Fisheries Science

In 2001, with deep concerns for dwindling trout populations and perceived declines in water quality, a group of ranchers, fishermen, and scientists formed Friends of the Teton River. FTR was designed to be a science-based, watershed-centric NGO with a mandate to recover fish populations by improving the health of the Teton River Watershed. At the time, very little data had been collected specifically about native cutthroat, their habitat, and watershed conditions impacting the fishery.

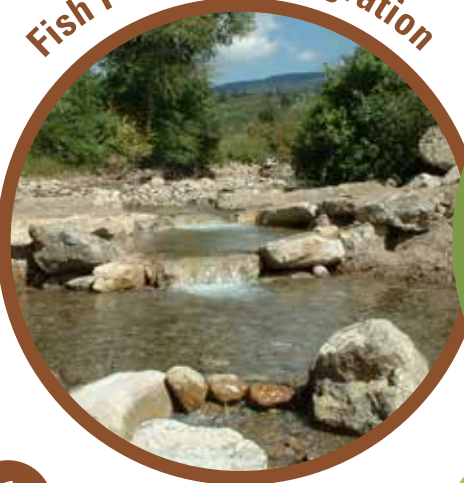
Today, FTR leads the field in western native trout science and research. Aided by agency partners, and some of the brightest fisheries scientists in the region, FTR has collected some of the most comprehensive data for inland trout species anywhere.

- Spearheading the first Teton watershed-wide trout population study, electro-fishing 123 sites on eighteen tributary streams to establish baseline data and trends every five years since 2005.
- Tagging and tracking more than 4,500 trout in the watershed to determine timing of migration, important spawning areas, and life history.
- Monitoring a network of temperature loggers, water quality sites, and stream flows.
- Current fisheries investigations include genetic testing, winter survival of juvenile trout, and habitat studies.



Data Driven Restoration

Fish Passage + Migration



Our research has shown that the Teton River's Cutthroat depend on migrating up tributary streams to spawn. For tributaries that have productive populations of native trout, restoring connected migration routes free of obstacles impediments, or entrapment, is how we improve their chances for reproductive success.

Habitat Improvements



Many sections of the Teton River and its tributaries have been impacted by uses and development that have led to poor water quality, erosion, and a lack of healthy habitat for fish and wildlife. We approach stream restoration as a collaborative process, using innovative bioengineering techniques to stabilize river banks and channels.

Function + Flow



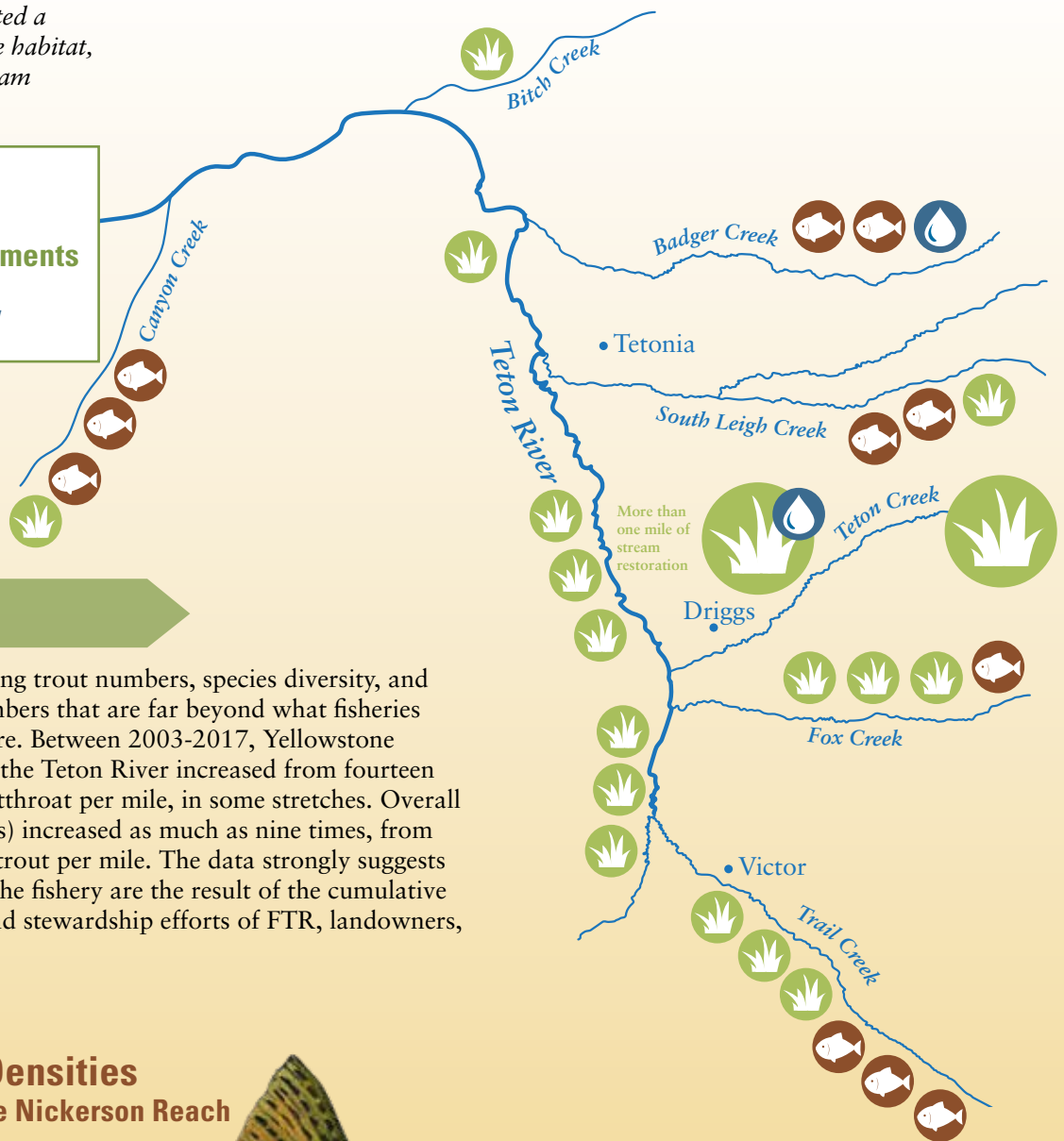
FTR has a number of programs and projects aimed at improving stream flows and water management, protecting floodplains, and ensuring the overall health of stream corridors. We work with stakeholders using cooperative solutions, and market-based incentives, to improve the natural function of our riparian ecosystems.

Fisheries Conservation

Completed Projects

Since 2001, FTR has completed a variety of projects to improve habitat, connectivity, and natural stream processes.

- Fish Passage**
- Habitat Improvements**
- Function + Flow**



Seeing Results

The Teton River has increasing trout numbers, species diversity, and rebounding native trout numbers that are far beyond what fisheries biologists have seen elsewhere. Between 2003-2017, Yellowstone Cutthroat Trout densities in the Teton River increased from fourteen cutthroat per mile to 936 cutthroat per mile, in some stretches. Overall trout densities (for all species) increased as much as nine times, from 420 trout per mile to 3,867 trout per mile. The data strongly suggests that these improvements in the fishery are the result of the cumulative restoration, conservation, and stewardship efforts of FTR, landowners, and our project partners.

Teton River Trout Densities Between 2003-2017 in the Nickerson Reach



420 Trout/mile

936 YCT/mi

3,867 Trout/mile

For All Trout (YCT, Rainbows, Brook Trout)

Recharge Program Basics:



LEFT Max Ludington and Greg Bagley discuss recharge efforts on the Bagley family's farm in Victor, Idaho.

RIGHT Excess water is spread out in the spring to recharge the aquifer.

Agriculture in Teton Valley and areas further downstream depend on snowpack to serve as a natural water storage system.

A changing climate is causing snow to melt earlier, making it harder and more expensive for farmers to obtain water for their crops in late summer. The earlier run-off is also having negative impacts on river health during the hottest times when plants, fish, and wildlife need it most.

Agricultural interests hold and manage the vast majority of water rights in Teton Valley. Farmers have the means and legal right to manage water in ways that can lead to more late season water availability.

By incentivizing Teton Valley's farmers to flood irrigate their fields when water is abundant (April-June), the aquifer can be turned into a natural and cost-effective water storage mechanism (July-September).

Recharged water is then slowly released from the aquifer into the Teton River, benefitting the ecosystem and the fishery, as well as farmers.

More abundant late season water provides economic benefits to the entire valley, from family farms to fishermen.

"We're all in this together. If we are to devise durable solutions to water availability for the future, we must think about both agricultural and residential users, farmers and outdoor enthusiasts, natural ecosystems and the economics of water." – Max Ludington

Recharging Ahead

By Max Ludington



The Teton Water Users Association (TWUA) is a first-of-its-kind partnership combining science, economics, and the ingenuity of local farmers to address decreasing water availability. Partners include farmers, local irrigators, and a variety of local governments, state agencies, and local and regional nonprofits—including the Idaho Farm Bureau, Teton Soil Conservation District, FTR, and many more.

TWUA was created in response to Teton Valley's declining aquifer levels—on average twenty-five feet and up to fifty-five feet in some localized areas. The reasons for the change in water availability are varied, but three key factors seem to be driving it: First is the change in snowpack (less of it and earlier melting); second is the increased demand for water (there are more of us); and the third cause, (which is also a potential solution) is a change in agricultural water use.

To add efficiency to farming, most of Teton Valley's farmers have switched from flood irrigation to sprinkler systems. These systems offer a variety of benefits, including reduced water use, improved crop production, and decreased labor costs. The major unforeseen consequence of the shift is that the extra water used in flood irrigation no longer seeps into the ground. As a result, Teton Valley's aquifers have lost a recharging mechanism, which in turn reduces the amount of water emerging from those aquifers that eventually works its way into local waterways throughout the summer. Additionally, groundwater moves more slowly than surface water. As we've shifted to a surface dominated system, water is leaving the valley earlier in the year.

To address this question, TWUA has proposed a solution based on a simple economic concept: scarce summer water is worth more than abundant spring water. Building on

this idea, TWUA's goal is to convert spring water into summer water through farming practices that lead to additional aquifer recharge, creating value. In practice, local farmers combine early seasonal flood irrigation with mid-season sprinkler systems.

At its core, TWUA is trying to change the timing of water flowing out of Teton Valley. This is no small task, and success will require a coordinated effort from TWUA's members. To date, TWUA has succeeded in the critical first steps of developing not only the knowledge needed to pursue the project, but the mutual trust between the many parties necessary to carry it out. Should it succeed, this approach has real potential to be applied in agriculture-heavy headwater basins throughout the Greater Yellowstone Ecosystem, as well as broadly across the West.



Max is a project director for LegacyWorks Group. He devises collaborative approaches with economic drivers for community scale conservation problems around the region, including Teton Valley.

How do we know it's working?

Monitoring wells: Monitoring wells allow us to measure the direct aquifer response to recharge. Program manager Bryce Contor has worked with the Idaho Department of Environmental Quality to collect historic well data and to re-start monitoring of additional wells.

Modeling Teton River flows: Dr. Rob Van Kirk (Henry's Fork Foundation) has developed a sophisticated water model for the Teton Basin, based on nearly one hundred years of measured snowpack, temperature, and stream-flow data. This serves as our control for the program and lets us know what stream flows would be under normal irrigation practices.

Measuring Teton River flows: FTR and HFF are measuring the direct flows in the Teton River over the course of the year. We are able to compare observed flows with modeled flows in order to see how the recharge program is impacting timing and volume of water in the river.

Piloting the Program:

In 2018, we launched a pilot program with four canals. That first year proved the feasibility of employing this approach, but was too small in scale to generate significant results. Building on that successful launch, we are expanding the program. In 2019, there are fifteen canals participating from six different canal systems. We are hopeful that this level of participation will produce measurable improvements in the timing of water delivery across the valley.

Spread the word (and the water).

Want to know more about recharge? Email Bryce Contor brycec@henrysfork.org

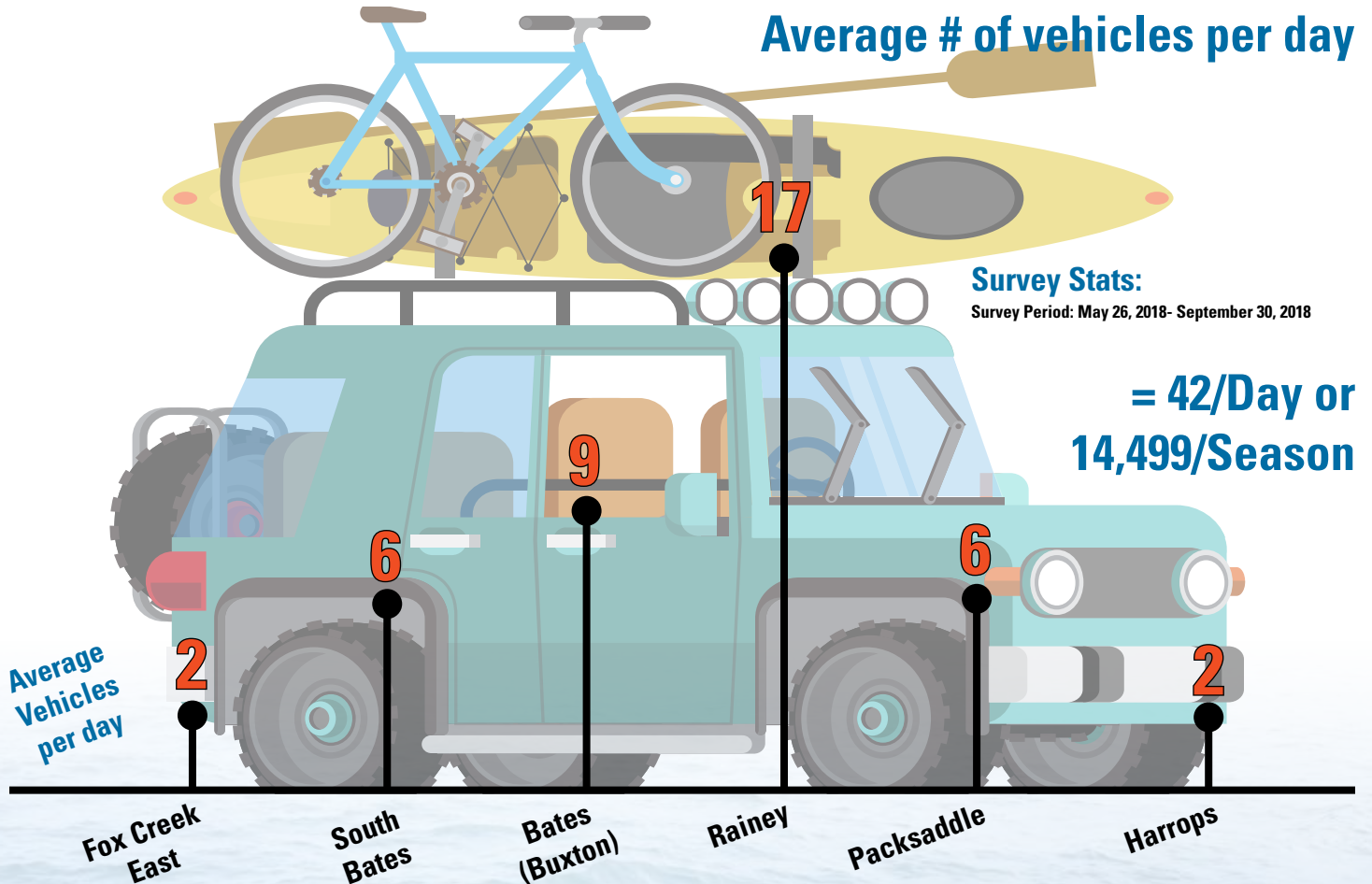
Thank you to Patagonia and 1% for the Teton for their support of this innovative program.



Teton River user numbers are in!

River-based recreation supports an important economic sector in Teton Valley. We've heard growing concern however, that increased use on the Teton River is impacting both the experience and the resource. To quantify this, FTR and the Henry's Fork Foundation (and a group of dedicated volunteers) conducted a survey between May 26 and September 30, 2018, to determine how many people are using the upper Teton River each summer, the type and duration of recreation, and the associated economic value of this use.

Average # of vehicles per day



How Many People are using the Teton River?



Total Individual Trips: 58,844*
Average number of users per day: 165



Average Party Size: 3.9
Total number of user days: 21,163*

**Trip= one trip to the river, from start to end (any length of time).*

***User day = over 12-hour time period (one person for 12 hours or three people for 4 hours each)*

What's Important to Teton River anglers:

1. Catching Cutthroat Trout
2. Adequate parking and facilities
3. Information available at the access point

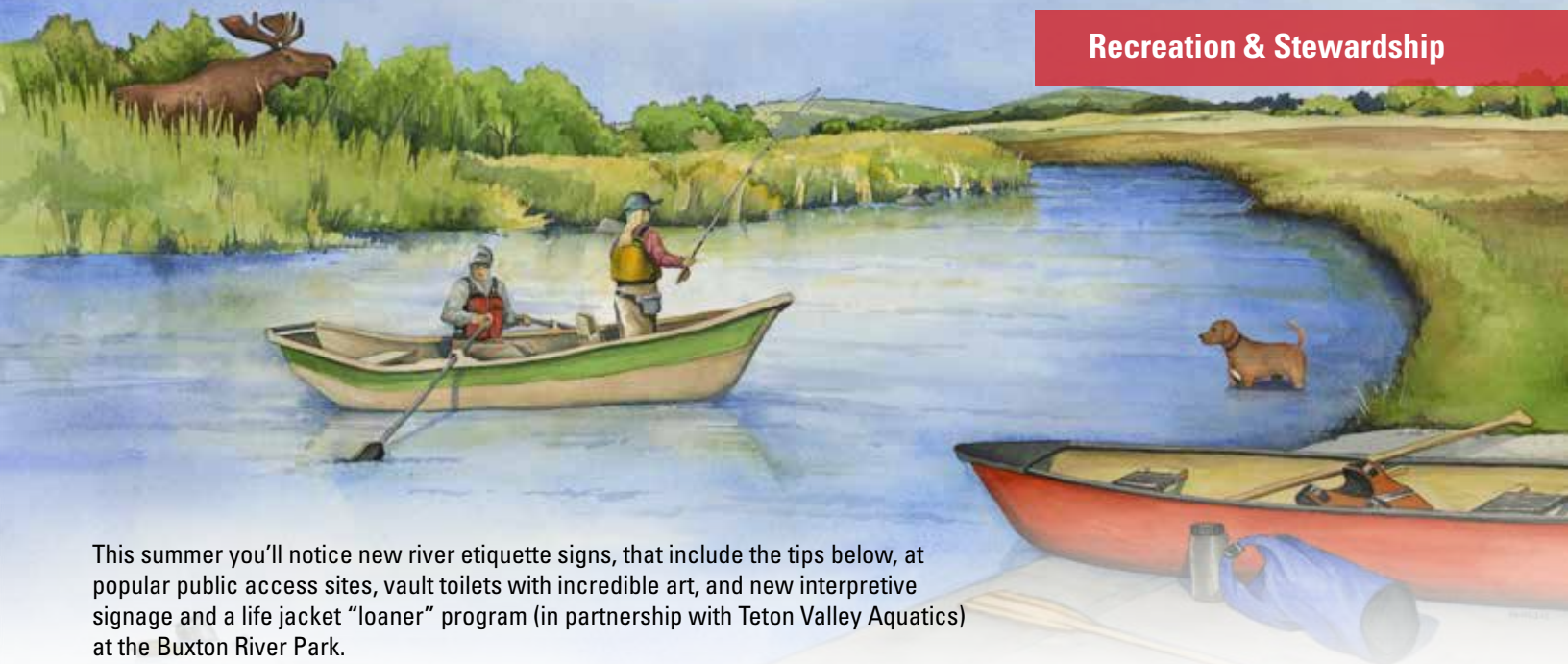
What's Important to recreational users:

1. Spending quality time with friends and family
2. Opportunities to watch wildlife
3. Solitude

Number of respondents: 587 (in-person) 175 (on paper)

Looking Downstream

In the coming months, we will have economic numbers to quantify the dollar amount coming into Teton Valley from river-based recreation. We are working with key stakeholders, outfitters and guides, and the community to determine the next steps to manage recreational use. Survey data and continued public input will help our community and agencies work together to ensure the Teton River remains a valuable resource long into the future.



This summer you'll notice new river etiquette signs, that include the tips below, at popular public access sites, vault toilets with incredible art, and new interpretive signage and a life jacket "loaner" program (in partnership with Teton Valley Aquatics) at the Buxton River Park.

Respect Private Property

Most of the land adjacent to the Teton River is privately owned. Stay below the high water mark and keep off private property. This pertains to dogs, too.

Wear Your PFD!

By Idaho law, each person riding on a personal water craft (including boats, tubes, and stand-up paddle boards) must have one personal flotation device (PFD) or life jacket on-board per person. Be a role model for other river users and wear your PFD at all times. Life jackets save lives!

Pack It In, Pack It Out

Take your garbage with you after your float. Please use existing restrooms at river access points, or pack out human waste and toilet paper with a portable toilet. Keep the river clean for all to enjoy.

Know Your Skill Level & Potential Hazards

The Upper Teton River may appear calm, but hazards do exist. Know your ability to navigate the river at high and low water, especially under bridges and close to willow-lined banks. Expect afternoon thunderstorms, and for conditions to change quickly.

Share the River

Give ample space to other boating parties, anglers, and wildlife when you encounter them on the river. Keep dogs under control at all times to respect private property, wildlife, and others. Be a courteous river user.

Be Ready at the Ramp

Organize gear and load boats before approaching the ramp to avoid congestion. Smaller crafts should stage gear to one side and leave space for boats and trailers. Clear the way for the next party.



Valley-Wide Vault Painting

In 2018, local artist Helen Seay worked with FTR and community partners to paint murals on the walls inside of the vault toilets at South Bates (pictured at left) and at Buxton River Park. This year, a generous grant from the Teton Springs Foundation has provided funding to paint six additional vault toilets at popular access points throughout Teton Valley including those on the Teton River at Rainey, Harrops Bridge, and Spring Hollow (a partnership of FTR, the Teton Arts Council, and Teton Regional Land Trust); and at the Teton and Horseshoe Canyon parking lots (Trails and Pathways and the Teton Basin Ranger District).

? H₂KNOW Your Well Water



Here in Teton Valley, we generally enjoy very high-quality drinking water. This is due in part to the low density rural population, our location high in the headwaters of the Teton Mountain Range, and the relatively low impact land uses that occur here. However, over the past few years our annual nitrate testing program has shown emerging trends in nitrate levels in drinking water in Teton Valley. Although the exact source is hard to identify, nitrate contamination can be caused by leaking or unmaintained septic systems, personal or commercial fertilizer use, or animal waste.

To help individuals find out more about their water quality, FTR is launching a water quality testing cost-share program to assist private well owners in Teton Valley in affordably and conveniently having their well water tested at a certified laboratory. Testing results will be shared with the well owner and FTR to continue monitoring these emerging trends. Well water test kits will be available at a cost-shared price to private well owners for \$40. FTR will coordinate the transportation of well water samples to a certified lab.

Convenient Well Water Testing at an Affordable Price

STEP 1



Pick up and pay for your well water test kit at the FTR office

STEP 2



Complete your Chain of Custody and Water Source Survey forms

STEP 3



Follow sampling instructions to fill sampling containers with your tap water

STEP 4



Return samples and completed paperwork to location specified at kit pickup

STEP 5



Receive results via mail or email in 6-10 business days

WHAT ARE WE TESTING FOR?

Bacteria Presence/Absence
Nitrate + Nitrite as N
Fluoride
Chloride
Sulfate

YOUR COST PER KIT

\$40

TOTAL RETAIL VALUE

\$90

ADDITIONAL TESTS AVAILABLE FOR PURCHASE

pH	\$12
Total Hardness	\$12
Lead	\$15
Arsenic	\$12

*By participating in this cost-share program, testing results will be shared with FTR and Idaho Department of Environmental Quality

Program funding was provided by the Community Foundation of Teton Valley and Silverstar Communications



Questions?
info@tetonwater.org
(208)354-3871

2019 Summer Calendar

May 31

Wild Rivers Film Tour

Wildwood Room in Victor, Idaho
Kick-off your boating and fishing season right, with films that celebrate our wild rivers. Doors open 5:30pm – \$12
Movies start at 7pm



June 8

Idaho Free Fishing Day

On the second Saturday each June, all anglers—residents and non-residents—can celebrate the day by fishing Idaho's waters without a license.

All Summer!

See you at the Driggs Farmers Market!

Fridays in the summer, 9am-noon, FTR will host a booth with info, merchandise, and more.
June 21, July 26, August 9



Pint Night 19

5-8pm—Join FTR, the Teton Regional Land Trust, Valley Advocates for Responsible Development, and Trails and Pathways for a night of food and beer at Grand Teton Brewing in Victor, Idaho. Learn about our progress on the Teton Creek project, take our survey, and support these partners by buying a pint.



July 10

Meat & Greet

5pm—Meet local ranching families, taste locally-raised livestock and learn about how Friends of the Teton River and Teton Valley stockmen and women are working together to use conservation and best management practices at this informal and informational gathering.



20 Tin Cup Challenge



Celebrate 12 years of nonprofit philanthropy with a fun run and family activities in the Driggs City Park. Support FTR with your donation to the Tin Cup through the Community Foundation of Teton Valley. Your contribution to FTR will bring our Tin Cup total to more than \$800,000 raised to-date. Donations are accepted June 1–July 26. cftetonvalley.org

25

Come see our booth at Music on Main in Victor!

Help us decorate a banner for the upcoming Fins & Fiddles celebration.



Fins & Fiddles

A celebration of music and fly fishing returns.



8 Farm & Ranch Tour

(Take 2!), 1-5pm Hop on the bus and take a tour of Teton Valley farming and ranching operations that highlight how cultivation, grazing, and conservation can work together. If you joined us last year, this is all new! Free to the public. To sign up in-advance and get details, email tetonscd@silverstar.com. Park at the fairgrounds and stay for the Teton County Fair after the tour!

Details on Back Cover

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www.tetonwater.org

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Fins & Fiddles



A not-to-be missed summer jam!

4-8pm at the Knotty Pine in Victor, \$10 Donation at the door

Join **Friends of the Teton River** and the **Targhee Music Foundation** for a family-friendly evening featuring pay-per-plate Knotty Pine BBQ, raffle, kids activities, the dancing cutthroat, and more!

Presenting Live On-Stage:

Eli West, Eric Thorin, & Mike Witcher

Folk Songs for Children with Thomas Sneed

The Balsamroots | Masontown

For more info:
208-354-3871
or tetonwater.org

Ride the Grand Targhee Shuttle to/from the event.
New or renewing members get a free gift.