



Jackson Region Fisheries Newsletter

Fish Creek: “Live on it, work on it, recreate on it”

That’s what landowners had to say about their relationship with Fish Creek in a recent survey contracted by “Friends of Fish Creek,” (FOFC) a new not-for-profit organization developed to motivate land use change and improve water quality on Fish Creek. Fish Creek flows for about 15 miles from its headwaters in the Tetons to its confluence with the Snake River, passing through the town of Wilson along the way. While the stream is still classified as a Class I Outstanding Stream by the Department of Environmental Quality and a blue ribbon trout fishery by the Wyoming Game and Fish Department, landowners, anglers and agencies have noted changes to water clarity, plant and bug composition, and trout population.



Collecting algae samples. Photo credit: Teton Conservation District

Since the 1990’s, folks have been noticing increased algae and rooted aquatic plants along with a significant decline in aquatic insect hatches. Along with these changes, the Jackson WGFD fisheries crew has observed a steady decline in native cutthroat biomass with estimated pounds per mile declining by 27% between 2004 and 2010. Estimates of numbers of cutthroat trout spawning also suggest the population is declining.

During this same time frame, Wilson and Jackson residents have watched the valley grow up around them. Developments or land uses within the Fish Creek drainage include private residences and septic systems, golf courses, ski area, cattle grazing, horse corrals, landscaping and irrigation. The municipal water is supplied from ground water wells tapping the same aquifer to which black and grey water wastes are discharged after treatment either through septic systems and leach field or through injection wells. A Teton Conservation District and USGS study in the early 2000’s documented year-round connection between this aquifer and Fish Creek. The study also linked ecological changes like algal growth and shifting aquatic invertebrate communities to increased levels of nutrients found both in ground water and in Fish Creek, specifically nitrates. Nitrates are tied to sewage and septic effluent and manure.

Continued on page 8

Inside This Issue:

- AIS Update
- Meet Anna Senecal, new Aquatic Habitat Biologist
- 25th Annual Kids Fishing Day!
- Jackson Lake Food For Thought
- Electrofishing FAQ
- Snake River Float Fishing

AIS Update

Warm temperatures this winter have us looking ahead to the 2015 boating season here in the Jackson area! With this in mind we'd like to keep you updated on what has been happening with the Aquatic Invasive Species (AIS) program. Check stations remained near the state borders in 2014 with WGFD personnel inspecting boats at the US-26 Port of Entry in Alpine and at the US-89 rest area in Thayne. Jackson Lake boat inspections also continued on a rotating basis at the Signal Mountain, Colter Bay and Leeks Marina boat ramps. The Jackson area gained valuable feedback and a high level of boater satisfaction through responses received from the boater appreciation raffle surveys. We are looking forward to another successful season protecting Wyoming waters from the harmful threats of AIS. With this in mind we'd like to announce updates to the program we think will better serve the boating public.

2015 AIS updates:

- The Jackson area plans to add a peak summer watercraft inspection station to help with increased boat traffic. The station will run periodically at locations in the Snake River canyon and on HWY-22. Start and end dates for this location are anticipated to be from late June through the end of August. Further details to come.
- Training courses to become a Wyoming certified boat inspector will again be available free of charge to the public. Businesses and individuals that wish to become boat inspectors also have the option to be listed on the WGFD website as a certified inspection location. Private businesses and individuals may chose to charge whatever fee they deem appropriate for providing boat inspection services. The Jackson training course is scheduled for June 3, 2015. Interested persons can contact Jackson AIS specialist Chris Wight to sign up: chris.wight@wyo.gov or (307) 231-7851. Please leave name, mailing address, phone number and email.



Continued on page 3

AIS update, cont.

During 2014, over 43,000 watercraft inspections were conducted, of which 2,087 were considered high risk; requiring a more thorough inspection. This led to 880 boats being decontaminated with hot water to kill and remove all potential AIS. 27 of these were performed in the Jackson area thanks to the diligent work of our AIS inspectors.

Another major component of the AIS Program is sampling waters for the presence of AIS. Plankton tow sampling for larval mussels (veligers) at Jackson Lake, Palisades Reservoir, Jenny Lake, String Lake and Lower Slide Lake were conducted in July and October of 2014. All samples from these waters were negative indicating no mussels present.

We would like to remind boaters in the Jackson region that zebra and quagga mussels are not the only AIS of concern to our waters. New Zealand mudsnails were again sampled in Polecat Creek and the Snake River at the Flagg Ranch boat ramp. Always remember to Drain, Clean & Dry watercraft and equipment to prevent the spread of these harmful organisms. If you see any suspicious plants or animal on your equipment or notice something while you are enjoying Wyoming's outdoors that you think may be invasive please let us know. You can report a sighting at 1-877-WGFD-AIS or ReportAIS@wyo.gov.



We Are Pleased To Welcome....

Hi everyone, my name's Anna, and I am the new Aquatic Habitat Biologist for the Jackson Region. I am a California native, and spent my youth in coastal towns in Southern California, Scandinavia and the Middle East. In 2006, I made the move to eastern Wyoming, called myself a mountain girl and never looked back! After earning a graduate degree with the University of Wyoming, I worked several stints as a contract biologist throughout the state, eventually finding permanent employment as a fisheries biologist in Green River where my family and I lived for the past four years.

We are very happy to have made the move north and call this beautiful valley "home." And I am excited about my new post as Habitat Biologist. This first field season I will be focused on continuing the Flat Creek stream improvement project on the National Elk Refuge, and conducting stream and fish passage surveys throughout the region. Some fine Jackson day, you might find me running rivers with my husband, Sam and his daughter, Sadie, or roaming the hillsides on bike, ski and foot with our two mangy mutts.



25th Annual Kids Fishing Day!

The 25th annual Jackson Kids Fishing Day will be held Saturday, June 6th at the Jackson National Fish Hatchery located four miles north of Jackson. Registration begins at 10:30 followed by an hour of learning stations from 11:00-noon. A free hot dog lunch will be provided at noon and kids can fish Sleeping Indian Pond from noon-3:00. Topics covered in the learning stations will include bugs, Aquatic Invasive Species, fish anatomy, fish identification, and stream habitat. Also in the afternoon, fly casting instruction, knot tying, fly tying, lure making, casting practice, bear safety, and other activities will be available. All kids, age 13 and under, are invited to participate and parents can listen in for a great learning experience. Jackson Kids Fishing Day is sponsored by Jackson Hole Trout Unlimited, Wyoming Game and Fish Dept, U.S. Fish and Wildlife Service, Bridger/Teton National Forest, U.S.G.S. Jackson Field Station, Teton Conservation District, Teton County Jackson Parks and Recreation Dept, Teton County Weed and Pest, Jackson Hole Lions Club, Snake River Fund, and Grand Teton National Park.

Afton Kids Fishing Day will be held at the Afton Golf Course Pond Saturday, June 6th, from 8:00 to noon. More details to come.



Jackson Lake Food for Thought

Anglers often walk into the Wyoming Game and Fish office to share their fishing stories with the fisheries biologists. One of the things that they often report is the stomach contents of the fish they kept for dinner. We are all fascinated by what the animals around us are eating, not just because we want to know what we are consuming, but because we understand the importance of abundant food sources for the survival of the critters we care about. The anglers in Jackson Lake are no exception to this. When conducting creel surveys or enforcement checks, biologists and wardens are often updated on what the Jackson Lake lake trout are munching on. In order to get a better understanding of lake trout diets on Jackson Lake, the Wyoming Game and Fish Department conducted a diet study during the summer of 2014.



Lake trout were captured from early June to mid October by a variety of methods. If fish were killed by sampling or by anglers for a weekend meal, whole stomachs were removed from the fish and stomach contents were included in the study. However, many fish were captured alive and their stomachs were pumped using a process call gastric lavage. This is the same procedure that may be used on humans if poison is ingested or if the stomach needs to be emptied for some reason. During gastric lavage, a tube is inserted through the fish's mouth and into the stomach. Water is gently pumped through the tube and the stomach contents are flushed out the fish's mouth. Once the stomach is emptied, the fish can be released back to the lake.

Gastric lavage being performed on a lake trout

[Continued on page 5](#)

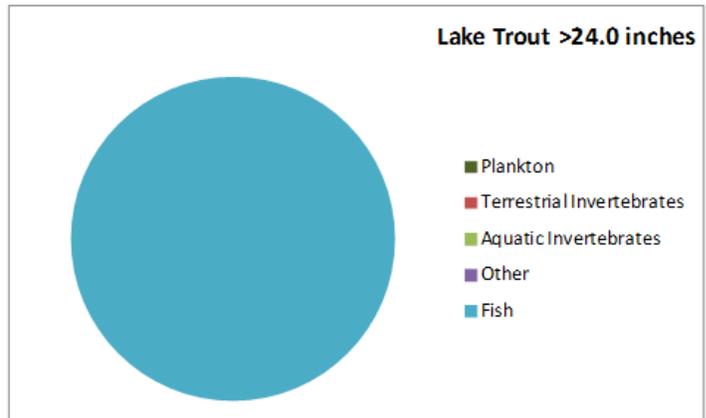
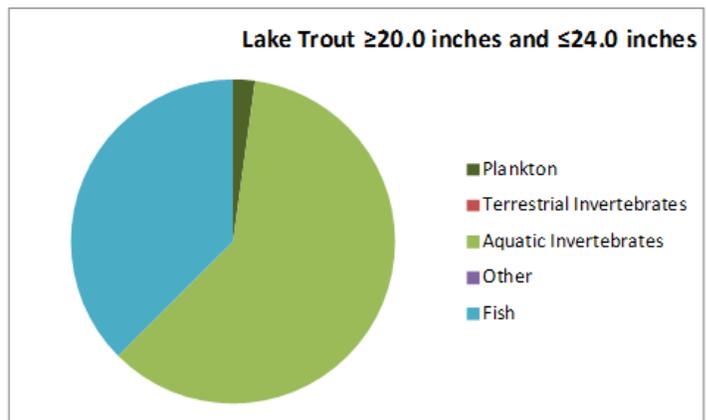
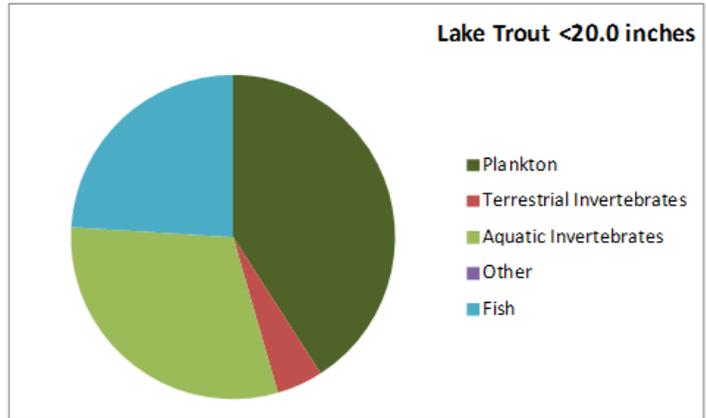
Jackson Lake Food For Thought, cont.

A total of 131 lake trout diets were collected, placed in ziplock bags, and frozen. In December, January, and February, these diets were analyzed. Diet items were separated into 5 categories; plankton (small, almost microscopic, suspended algae and bugs), terrestrial invertebrates (land bugs), aquatic invertebrates (water bugs), fish, and miscellaneous items. Stomach contents were weighed for each individual fish.

Overall, the most common items in the diets of lake trout were fish, aquatic invertebrates, and plankton. Plankton decreased in diets as the lake trout got larger while fish increased in diets as lake trout got larger. Lake trout bigger than 24 inches ate only fish. Aquatic invertebrates were the most commonly found diet item in lake trout with almost half of the lake trout captured having consumed aquatic invertebrates, however, since these bugs are small, they made up only 7% of all diets by weight. Fish were found in 21% of lake trout stomachs but they made up half of all diets by weight. Although all fish found in stomachs could not be identified because they were too digested, a wide variety of species were prey including mountain whitefish, Utah suckers, and sculpin.

Not all lake trout had been eating healthy meals however, other miscellaneous items that were found in lake trout stomachs were sticks, rocks, and lures and 28% of the lake trout stomachs were empty. Most of these empty stomachs were collected during September and October when lake trout were preparing to spawn or during spawning. Fasting is a common phenomenon in fish during the spawning season.

Next time you are out enjoying the lake or river and decide to bring home a meal, take a look and see what your dinner had for dinner, then stop by and let us know!



Electrofishing FAQ

If you spend a lot of time on local creeks and rivers, you have probably come across the regional fisheries management crew conducting electrofishing surveys. Biologists often use electrofishing gear to collect information on local fisheries and onlookers are usually curious about this technique. These are some of the questions that are often asked:

What does an electrofishing boat do?

An electrofishing boat applies electric current to the water to collect fish.

How does an electrofishing boat work?

An electrofishing raft uses a generator to produce the electricity. The generator is connected to a Variable Voltage Pulsator (VVP) which monitors the input and output voltage and regulates the output current. This allows biologists to use settings that are not harmful to the fish. From the VVP, the output is then split into the positive (anode) and negative (cathode). The cathode is set up as electrodes off both sides of the boat. The anode is set up as two booms or long poles extended off the front of the boat with electrodes into the water. As the electricity travels through the electrodes, the electric field temporarily stuns fish that swim within about a six foot radius of the booms, allowing biologists to net the fish and place them in a live well in the boat.

Does electrofishing hurt the fish?

Electrofishing has minimal effects on fish when properly done. Fish are stunned within a few seconds of entering the electric field and remain stunned for a few seconds to several minutes. Electrofishing is much less harmful than methods that entangle fish, such as gill netting.

What do you do with the fish?

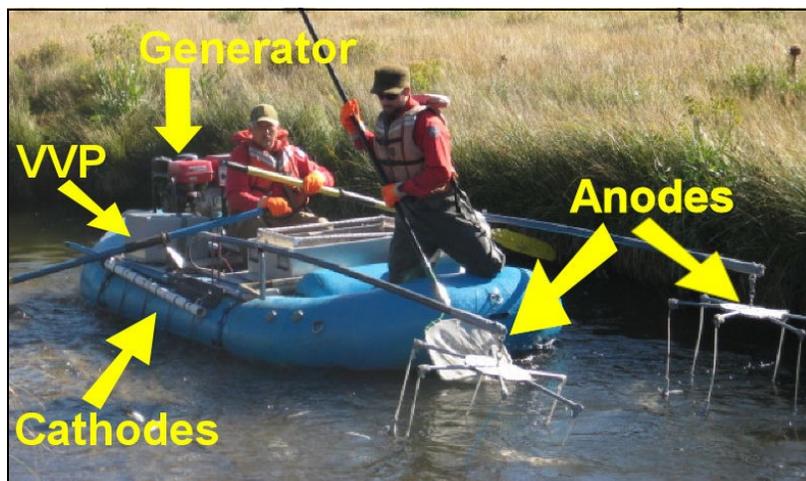
Fish are held in a live well in the boat until they are measured and weighed. After measuring the fish, they are returned to the water. Often, only certain species of fish are collected and only a small percentage of a fish population is captured. From this sample, biologists are able to determine different characteristics of the fish community, including number of fish per mile, pounds of fish per mile, and average length and weight. Depending on the objective of sampling, additional data may also be taken.

What happens if someone falls in the water during electrofishing?

The biologist operating the boat controls the input, output, and a foot pedal which turns the system on and off. If someone were to fall in, the biologist would take their foot off the pedal and the output is shut off. Life jackets, waders, and gloves are also worn at all times for safety.

What should I do when I see an electrofishing raft?

Biologists do their best to avoid disturbing areas anglers are fishing. If you are wading and able to exit the water easily, it's best to do so. When stopped with the generator off, it's safe to approach to see the fish that have been collected and talk to the crew.



Snake River Float Fishing

The Upper Snake River in Wyoming is a designated Wild and Scenic River and offers some of the most scenic float trips in the country. Each river section includes a variety of fishing opportunities for the angler once water flows decrease, generally in late July. Best fishing and most hatches occur July through October when water levels are lower and the water is clearer. Anglers can find excellent insect hatches typical of most western rivers, exceptional streamer and nymph fishing as well. Rafts or drift boats are the most common methods to float the river, but canoes, kayaks, and pontoons are also welcome as long as they have a current Wyoming AIS decal, and a Grand Teton boating permit for floats within park boundaries. Floatable sections of the Snake River that anglers target begin within Grand Teton National Park below Jackson Lake dam, and continue past the Teton Range, through Snake River Canyon, and end above the whitewater section at West Table Boat Ramp. Different fishing regulations pertain to different sections so consult a Wyoming Game and Fish Fishing Regulations brochure before wetting a line.

Float fishing begins below Jackson Lake Dam and continues through the Oxbow section where the river channel is very slow and meandering. The first launch/takeout site after the dam is at Pacific Creek (4.5 miles from dam), where most fishing trips begin.

The float from Pacific to Deadman's Bar (11 miles) is very scenic and the fishing is excellent. The river follows its natural course here with a lot of woody debris, high overhanging banks, and great trout habitat.

Deadman's Bar is another popular launch site for fishing and scenic float trips. The Deadman's Bar to Moose (10 miles) section is very channelized and the main channel can change from year to year. Large, woody debris collects in this section providing optimal trout habitat and a lot of channels to stop and explore while floating. Advanced boating skills and caution should be used when floating this section and visiting a local fly shop or rafting shop can give boaters up-to-date conditions about the river.



Fly fishing on the Snake River



Von Gontards boat ramp

The following takeout site is at Moose, WY near the entrance station to Grand Teton National Park. The Moose to Wilson Bridge float (14 miles) offers more rocked banks and fewer side channels. This section begins a slightly more constrained river due to the levee system, but still provides excellent trout habitat and superb fishing.

Levees with riprap and fewer channels continue from Wilson Bridge to South Park (13 miles), however this float and others downstream from here are entirely out of Grand Teton National Park so a park boating permit is not required; only a WY AIS decal is required.

After South Park, the river begins flowing into Snake River Canyon, which is characterized by a single channel, deeper holes, and less large, woody debris.

Astoria Hot Springs follows 9 miles later for boaters to take out or launch, then the last takeout before the whitewater section is about 8 miles downstream at the West Table Boat Ramp.

This last section is flatter water, however some channels and logjams are present.

No matter what section of river you choose to float, they all present their own challenges and opportunities for catching beautiful Snake River cutthroat trout. Enjoy your trip, and remember, stay safe out there!

Fish Creek: “Live on it, work on it, recreate on it,” cont.

Enter Friends of Fish Creek (FOFC), an organization formed to engage the community of landowners, town and county representatives, businesses and resource managers in a process to identify the problem (nitrate sources), provide education and move stakeholders towards mutually-beneficial and agreed-upon solutions, or Best Management Practices. FOFC is currently contracting a scientific study of nutrient contributions with buy in from the stake holder group.

And just what is so interesting about this stakeholder process? The fact that it is pre-emptive. The Wyoming DEQ issues a Stream Health Report every two years under the federal Clean Water Act. Were this report to be issued today, Fish Creek would officially be knocked off its Class I Outstanding pedestal and fall on a list of 303(d) “Impaired” streams. This would trigger federal mandates and oversight, not to mention continued stress on an already struggling ecosystems and detrimental effects to a resource-driven economy. The fact that we all care so deeply about the rivers we live and work and play on shows the lengths we are willing to go through to protect and improve our waterways and fisheries.



For more information on Fish Creek, FOFC, or USGS studies, visit:
<http://www.tetonconservation.org/programs/water-resources.php>

Or check out some innovative septic system overhauls here:
https://www.youtube.com/watch?v=IsZ7J_FfzeQ

Thanks to this years newsletter contributors: Anna Senecal, Rob Gipson, John Heckel, Chris Wight, Diana Miller, and Tracy Stephens.

WYOMING GAME AND FISH DEPARTMENT



“Conserving Wildlife, Serving People”



Fish Division Mission Statement

As stewards of Wyoming's wildlife, we are committed to providing diverse, high quality angling opportunities for our customers and conserving all aquatic wildlife, reptiles, amphibians and their habitats for future generations.

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