



Inside this issue:

Hoback River Trout Monitoring	2
New Faces	3
Fishing in the Wyoming Heat	4
South Flat Creek	5
Understanding the Impacts of Flow	6
Aquatic Invasive Species	7
Geology and Bones	8
Important Dates in 2022	9

Wyoming Game and Fish Department

Jackson Region Angler Newsletter

Volume 16

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Fish Management in the Jackson Region

Welcome to the 2022 Jackson Region Angler Newsletter! The past year has been one of change in the Jackson regional fisheries crew for the Wyoming Game and Fish Department. After 30 years with the Department, Rob Gipson, regional fisheries supervisor, hung up his waders and sailed into retirement. In addition, Anna Senecal, the aquatic habitat biologist, headed north to Alaska to pursue other adventures. Although we will miss their dedication, knowledge, and friendship, it has paved the way for new faces (including one that you might remember from not too long ago) and the future is looking bright. We hope you enjoy hearing about some of our work this past year through these pages, but, as always, don't hesitate to stop into the office or give us a call.



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Fisheries Supervisor



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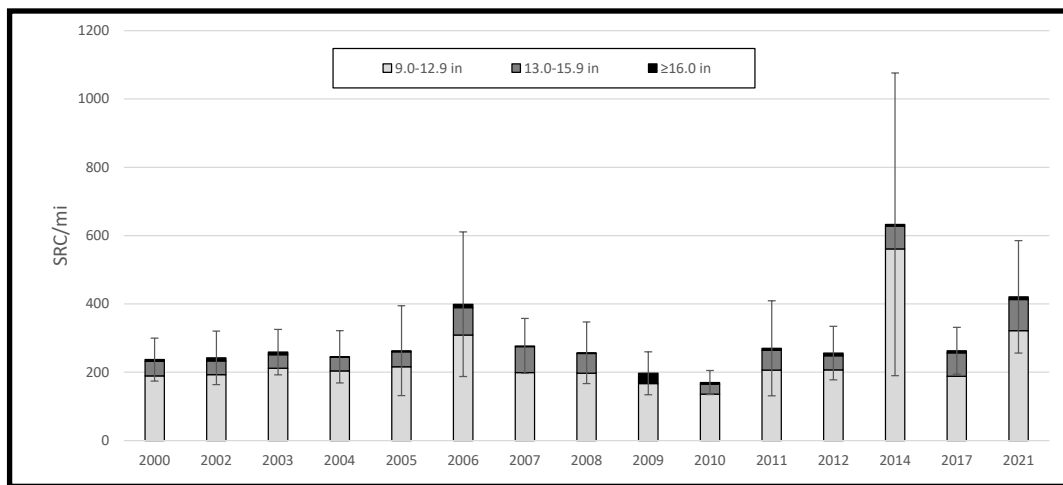


Chris Wight
AIS Specialist

Hoback River Trout Monitoring

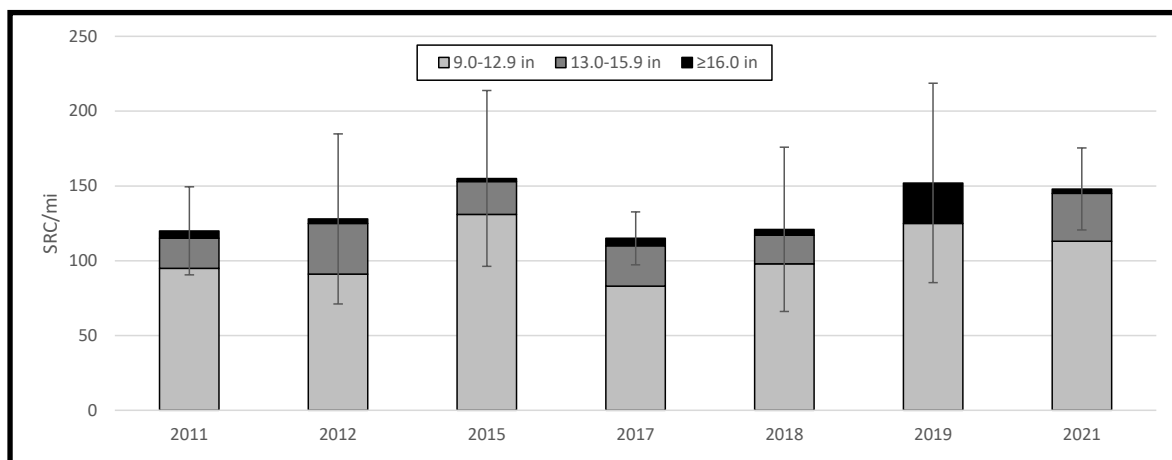
To keep our finger on the pulse of Cutthroat Trout fisheries in the Upper Snake River drainage, the Jackson fisheries management crew samples the major rivers in the drainage on a rotational schedule. In 2021, the Hoback River was on the docket. As many of you probably know, in order to sample large, flowing waters, we utilize raft electrofishing. Two electrofishing rafts worked together to sample two, 3-mile stretches of the Hoback River. We refer to the two stretches as the Lower Hoback site and the Upper Hoback site. The Lower site is located between Hoback Campground and Stinking Springs, while the Upper site is the 3 miles upstream of Kozy Campground.

In 2021, the number of Snake River Cutthroat Trout at the Lower site was similar to previous years, with an estimate of 968 per mile (bigger than 5.0 inches). However, the average size of cutthroat was larger than has been seen in recent years and the number of fish greater than 9.0 inches was the second highest recorded since 2000.



Cutthroat Trout per mile in the Lower Hoback. The bars represent the variation (95% confidence) in the estimate.

Monitoring at the Upper Hoback site began much more recently with the first estimate taking place in 2011. During that time, estimates of fish larger than 9.0 inches have remained very stable, ranging from 120-150 cutthroat per mile. This stability lends itself to the conclusion that the fish in this section of river are likely at capacity.



Cutthroat Trout per mile in the Upper Hoback. The bars represent the variation (95% confidence) in the estimate.

A New Face on the Jackson Fisheries Team

My name is Holden Reinert and I am the new Aquatic Habitat Biologist for the Jackson region. Originally from Pennsylvania, I moved west at 18 to ski and attend the University of Utah. My career in conservation started with internships with Swaner Nature Preserve wrangling goats for noxious weed control and collecting Columbia Spotted Frogs for the Utah Department of Natural Resources. I moved to southwest Montana for a job with the Nature Conservancy in the High Divide Headwaters region conducting hydrology and stream restoration work before accepting a graduate position at Montana State University where I studied biological responses to stream restoration techniques. For the past two years I worked full time for Montana Fish, Wildlife, and Parks as the Riparian and Fisheries Habitat technician managing water and fish habitat for the production of cattle and the conservation of Arctic Grayling. I have always been driven by inter-agency, multiple stakeholder, and interdisciplinary work to achieve mutually beneficial conservation goals, and look forward to being a part of and continuing the reputable work Wyoming Game and Fish has done in the Jackson area. In my spare time I enjoy fishing, hunting, backcountry skiing, and backpacking in the numerous wilderness areas in the region.



HOW TO FISH IN THE WYOMING HEAT

In Wyoming, when it's hot and dry, the state's streams and rivers flow with less water and high air temperatures cause water temperatures to rise. The higher water temperatures and loss of deep pool habitats can prove lethal to trout. In lower elevation reservoirs, lakes and ponds, trout and salmon may also become stressed; particularly when hooked and pulled up into the warm surface waters. The Wyoming Game and Fish Department urges anglers to adjust fishing practices during the state's hottest stretch of summer to help fish beat the heat.



WHAT YOU CAN DO

Anglers who adjust their practices can help more fish survive the heat.



Fish early in the morning while the water temperature is cooler.



Reel in and land fish as rapidly as possible to reduce exhaustion stress.



Keep the fish in the water as much as possible.



Do not squeeze the fish or place fingers in the gills.



Carry a pocket thermometer to monitor the water temperature.



If the water temperature is at or above 65 degrees, consider keeping what you catch within the regulations. As a general rule, do not attempt to release trout when water temperatures reach 70 degrees.



As water temperature increases, using the proper techniques to catch-and-release a fish become increasingly more important to help insure the fish has a chance to survive.



Remove the hook gently. If hooked deeply, cut the leader.



Barbless hooks allow easier hook removal.



Flies and lures are recommended whenever many fish are being caught and released.



Consider escaping the heat with a trip to a top notch, high country fishery where it's cooler or take advantage of one of the state's premier walleye, bass, catfish or panfish fisheries.



If a fish is exhausted and cannot hold itself upright, and if regulations allow, consider having it for supper because the fish has a poor chance of surviving.

South Flat Creek

Flat Creek is a tributary to the Snake River with headwaters in the Gros Ventre Wilderness. A highly visible and prized fishing stream, Flat Creek flows through Forest Service lands, the National Elk Refuge, the town of Jackson, ranchlands, housing developments, and WGFD lands before its confluence with the Snake River in South Park. Critical spawning and rearing habitat for Snake River Cutthroat Trout (SRC) is provided throughout the stream. SRC need gravels cleaned by flushing flows to provide suitable habitat in order to spawn successfully and productive backwaters to rear juveniles. While spring creeks often provide clean, cool water refugia for SRC, decreased snow-melt inputs can result in less than ideal spawning habitat. Flat Creek's freestone qualities historically provided ideal gravels that supported SRC spawning.

Historic land use along South Flat Creek has resulted in a straightened and over-widened stream channel with decreased spawning habitat. Loss of riparian vegetation means less shade and fewer insects to feed the trout. To restore instream habitat and improve fish passage in the stream, WGFD partnered with Lockhart Cattle Company and a myriad of government and non-profit entities. This collaborative, multi-stage restoration effort broke ground in the winter of 2021, and restored 0.6 miles of stream habitat resulting in a narrowed and deepened channel, regraded stream banks, and a reconnected floodplain. Increased connectivity and diversity of habitats will benefit all life stages of SRC.



Working with private landowners provides benefits to resources like increased stream flows and natural water storage, stabilized banks, and expanded riparian areas to create more resilient stream ecosystems through restoration efforts. These benefits extend far beyond the restoration site. For example, we expect fish spawned and reared on Flat Creek to be bending the rods of Snake River anglers. Fostering relationships with multiple stakeholders, private landowners in particular, proves to be mutually beneficial to all parties, and offers a community wide effort in conserving native fish and wildlife populations.



Understanding the Impacts of Flow Reductions on Fisheries

2021 was a strange year for flows in the Snake River. Due to water demand downstream and infrastructure maintenance needs, water released from Jackson Lake into the Snake River remained high throughout the summer and the flows during the fall were reduced from high late summer flows (approximately 2,940 cfs) to low winter flows (approximately 230 cfs) over a period of 6 days. This flow reduction schedule was contracted compared to recent years and there was concern from biologists and the local angling community that there would be negative impacts to the fishery as a result. Among those concerns were that fish could become stranded in isolated pools and side channels as water receded.

In order to document any stranding of fish in isolated pools, the Wyoming Game and Fish Department and the National Park Service surveyed 33 pools between the Pacific Creek Boat Ramp and just downstream from the Wilson Boat Ramp. Sixteen of the 33 surveyed pools were located between the Pacific Creek Boat Ramp and the Deadman's Boat Ramp, 4 were between Deadman's boat ramp and Moose, 9 were between Moose and the Wilson boat ramp, and 4 were just downstream from the Wilson boat ramp. Three of the identified pools were still connected to the mainstem of the river and no fish sampling was attempted. Isolated pools were electrofished and fish were counted, identified to species and returned to the river. The majority of the fish (68%) were sampled between the Moose boat ramp and Wilson Bridge. Snake River Cutthroat Trout comprised 15% of the sampled fish and Mountain Whitefish comprised 8% of the sampled fish. More than 92% of fish sampled were young-of-year (YOY) or juveniles. All adult Snake River Cutthroat and Mountain Whitefish were sampled from just two pools. Both of those pools were distinct, in that they were deep and had overhead cover.

The information collected following the 2021 ramp down in flows is just a starting point. We plan to continue sampling after flow reductions each fall for the next couple of years in order to better understand what annual fish stranding might look like regardless of the speed of the ramp down.

In March of 2021, a public meeting, hosted by the Bureau of Reclamation, Trout Unlimited, and Teton Conservation District, was held to provide information regarding water management in 2021 and the community response to the fall flow reductions. If you would like to see the recording from that meeting, please visit: <https://jacksonhole.tu.org/blog-posts/ramp-down-public-meeting-recording-available>



Aquatic Invasive Species

The aquatic invasive species (AIS) program will begin watercraft inspection station operations at the beginning of May for the 2022 boating season. Per WGFD regulation, all watercraft entering the state by land from March 1st through November 30th are required to undergo an AIS inspection before launching on Wyoming waters. The check station at the Alpine Port of Entry on US-26 will open on Saturday April 30th and remain open until early October, seven days a week. Additional check stations on US-89 at Salt River Pass and Fremont Lake in Pinedale will open Saturday May 21st. Boaters can also receive an AIS inspection at the Game & Fish Regional Office at 420 North Cache St. Office hours are Monday through Friday 8am to 5pm, closed holidays. Boaters are strongly encouraged to schedule an appointment in advance to ensure a certified inspector is present.

In addition to Game & Fish locations, Grand Teton National Park also offers AIS inspections at both the Moose and Moran entrances throughout the summer. Park check stations operate seven days a week from 7:30am to 4:30pm.

Additionally, all watercraft are required to have a valid 2022 AIS decal to legally launch on Wyoming waters. Decals for Wyoming residents cost \$5 for non-motorized and \$10 for motorized watercraft. Non-residents decal fees run \$15 for non-motorized watercraft and \$30 for motorized boats. Decals can be purchased at any Game & Fish office, online through the Department website (wgfd.wyo.gov), or at any vendor location that sells hunting and fishing licenses.



Field sampling from the 2021 season revealed no new populations of AIS in the region. Jackson Lake and Palisades Reservoir underwent two rounds of sampling while Jenny, Lower Slide and String lakes underwent single sampling events. Twelve sites on the Snake River were surveyed as well as seven sites on the Salt River and two on the Gros Ventre River. While no new populations of AIS were discovered, the Department reminds boaters and anglers that New Zealand mudsnails are present at several locations throughout the region. An exotic species that competes with macroinvertebrates for habitat, mudsnails are present in the Salt River at the Diversion, McCoy and Bateman's/Swimming Pool accesses as well as the upper Snake River at Flagg Ranch. Cleaning all boating and angling gear along with draining and drying any standing water are best practices to protect our fisheries against the harmful impacts of AIS.

Tracking Suckers Using Geology and Bones

Bluehead Suckers are a species native to the Snake River Basin, and are of special concern and conservation need throughout their native range. The spawning and early life history of these fish is not well known within the basin. Only large adults have been regularly sampled, and the habitat use of juvenile fish is still relatively unknown in the region.

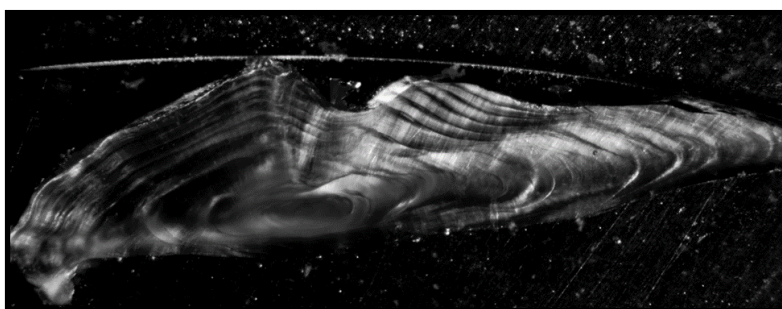
This year we started a project to use water geochemistry from the Snake River and its tributaries to hopefully track adult Bluehead Sucker movement history throughout their life and determine what areas may be vital to the early lives of juvenile fish.



To use geochemistry to reconstruct the movement of fish, we will be looking at the element strontium that is found in rocks. Strontium occurs in different forms called isotopes and combinations of these isotopes in the same rock create unique geochemical values. These values vary depending on the age and type of rock. As those rocks weather through natural processes, the water flowing over and through them also reflect the isotopic value of the rocks within a particular stream, river, lake, or spring. By analyzing the strontium isotope value of water samples from different water sources, we can determine whether strontium levels differ between tributary streams within the basin.

Just as the water reflects the geochemical signature of the geology it flows over and through, the fish living in that water incorporate that signature into their bodies and in turn have the same signature. Specifically, strontium is incorporated into bony tissues within a fish's body. One of the bones that incorporates strontium into its tissue is the otolith, a bone found just behind the brain of most fish.

The otolith is an inner ear bone that functions to help a fish with balance and orientation. This bone continues to grow as the fish does, and the growth can be observed much like the growth rings of a tree. There are wider, lighter sections during seasons when fish are growing rapidly, and thin dark sections during seasons when growth is slow, just like the light and dark rings of a tree. Once sectioned, the otolith reveals the fish's age and the geochemical record from the water where the fish lived throughout its life. The strontium within that otolith, and even more specifically with-



A cross section of an otolith shows how the layers are accumulated from its birth (large circular area in the lower middle) to the moment it was captured (edges of the otolith).

in different parts of that otolith, can be measured and compared to the strontium signatures of the water throughout the basin to determine where and when that fish lived at any given point of its life.

Biologists will then use this information to attempt to determine where adult suckers in the mainstem Snake River were born and spent their early lives before inhabiting the part of the river where they were captured.



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Conserving Wildlife-
Serving People

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Important Dates to Remember in 2022

Fishing licenses are now valid 365 days from the date of sale instead of by calendar year, allowing you more fishing for the same price!

- March 1—November 30 — **AIS Inspections.** All watercraft entering from out of state must be inspected prior to launching in Wyoming.
- May 1 — **Winter Closures for Wintering Wildlife Lifted.**
- June 4 — **Jackson Kids Fishing Day.** The Jackson Kids Fishing Day will be held at R Park. The event will last from 10:30AM— Noon. After a two year hiatus from our large event, we are back with registration, learning stations, and free lunch again this year! Rods, that kids can keep, will be provided through generous donations from JH One Fly Foundation, Trout Unlimited, Teton County Conservation District, and Teewinot Construction.
- June 4 — **Afton Kids Fishing Day.** The Afton Kids Fishing Day will be held at the Golf Course Pond. Rods, that kids can keep, were generously provided by donations from JH One Fly Foundation.
- June 4 — **Wyoming's Free Fishing Day.** The Wyoming Game and Fish Commission has declared June 5, 2022 Free Fishing Day to coincide with the beginning of the National Fishing and Boating week. On this date, residents and nonresidents may fish Wyoming waters (excluding Wind River Indian Reservation and Yellowstone National Park) without a fishing license or conservation stamp.
- June 11 — **AIS/Watercraft Inspection Training Course.** Members of the public who wish to become certified watercraft inspectors should enroll in this day-long training course. The class will cover aquatic invasive species of concern and watercraft inspection protocol. Upon completion of the course, class participants will receive certification to conduct boat inspections and issue receipts. This will allow boaters who travel out of state to complete their own watercraft inspection upon re-entry to Wyoming without having to seek out a Department AIS check station. To sign up, please contact Chris Wight at chris.wight@wyo.gov or call the Game and Fish Jackson Office.
- August 1 — **Flat Creek on National Elk Refuge opens to fishing.** The National Elk Refuge is closed to fishing from November 1 to July 31. Fishing is permitted by the use of artificial flies only, and fishing is restricted to daylight hours.
- October 1-31 — **Jackson Lake closes to fishing.** Jackson Lake is closed to all fishing for the month of October in order to limit disturbance to spawning Lake Trout.

We welcome all questions and comments on this newsletter or about the fisheries resources within the Jackson Region. Please feel free to call or send an email to:

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