



Green River Region Angler Newsletter

2019
Volume 14

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Fish Management in the Green River Region

Welcome to the 2019 issue of the Green River Region Angler Newsletter. This year's edition features news regarding upcoming research on Flaming Gorge Reservoir, an update on the AIS program, habitat projects and an update on the Green River, an introduction to the new Master Angler program, and other insightful reads about our region.

The Green River Fisheries Region spans from Fontenelle drainage in the north to Flaming Gorge Reservoir in the south, from the Bear River in the west to the Little Snake in the east, and includes all the lakes, reservoirs, rivers, and streams in between. Ours is the largest fisheries region in the state, and one of the most diverse! From trophy Lake Trout to native Colorado River Cutthroat Trout, Smallmouth Bass, Kokanee salmon, Tiger Trout and more, Green River has a little something for everyone.

We manage aquatic resources for *you*, the people of Wyoming, so your input is very important and we appreciate your comments. Please feel free to contact us at 307-875-3223, or using the information provided on the last page of the newsletter. Happy fishing!

WGFD Mission Statement

“Conserving Wildlife - Serving People”

Fish Division Mission Statement

“As stewards of Wyoming’s aquatic resources, we are committed to conservation and enhancement of all aquatic wildlife and their habitats for future generations through scientific resource management and informed public participation. We will use an integrated program of protection, regulation, propagation, restoration and control to provide diverse, quality fisheries resources and angling opportunities. Our efforts will balance the productive capability of habitats with public desires.”



Robb Keith
Fisheries Supervisor



Kevin Spence
Habitat Biologist



John Walrath
Fisheries Biologist



Troy Laughlin
Fisheries Biologist



Wes Gordon
Green River AIS Specialist



Jessica Warner
Evanston AIS Specialist

Evanston I-80 Watercraft Check Station

The Evanston I-80 (E80) watercraft check station acts as the first line of defense on the state's southwestern border in the battle to prevent Aquatic Invasive Species (AIS), such as quagga and zebra mussels, from being introduced to Wyoming waters. The majority of watercraft inspected at E80 are bound for Flaming Gorge. The check station first opened in 2013 and operates annually from mid-Apr to mid-Sep. Six technicians (five-month contract employees) and one crew lead (nine-month contract employee) staff the check station.

During the 2018 boating season, the E80 staff inspected 11,700 watercraft last used on 425 different water bodies. They also conducted 778 "high risk" inspections of which 493 were on watercraft last used at Lake Powell (infested with quagga mussels). In 2018, the crew at E80 performed 153 decontaminations and intercepted four watercraft carrying quagga mussels.

The 2019 boating season is on track to surpass the number of inspections completed last year - over 10,000 inspections have been conducted to date. The 2019 boating season has seen an increase in the number of high-risk inspections as well, 780 as of July 7, of which 157 were watercraft last used on a mussel positive water. This year inspectors have intercepted seven watercraft carrying quagga mussels and four watercraft carrying Asian clams, another AIS. As of the end of July 2019 the E80 crew has al-



Example of a boat the owner who thought the boat was dry, but it wasn't. Boat discharging over 5 gallons of water from its ballast tanks.

Inspectors conduct a high risk inspection when a watercraft is at a higher risk of transporting AIS. Often, these watercraft last boated on a zebra or quagga mussel positive water, are from a state with a mussel positive water and are carrying water onboard, or have an unverified use history.

ready decontaminated 140 watercraft.

In addition to the sheer volume of traffic and number of high-risk inspections, the staff of the E80 check station face many other challenges. The professional staff at E80 are more than up for the challenge. Many of the watercraft inspected at E80 are large and complex; having lavatories, ballast tanks, multiple through hull fittings, A/C units, generators, swim showers, sea strainers, and other water holding areas. The complexity makes inspecting a challenge and

makes decontaminating the watercraft, when necessary, difficult.

All too frequently, inspectors encounter watercraft with water onboard. They generally find it in ballast tanks, bilges, and live wells. This water poses a risk of transporting not only AIS but also aquatic diseases that could be detrimental to Wyoming's fisheries. When large amounts of standing water are located and cannot be fully drained inspectors will perform a decontamination to eliminate the biological risk.

Evanston I-80 Watercraft Check Station

E80 staff regularly inspect rental watercraft. Rental watercraft generally have unverifiable use history, which requires inspectors to conduct high-risk inspections. A decontamination is required when inspectors find water because the source of the water is unknown.

Decontaminations present their own challenges, as they are

home with their watercraft, owners should clean and dry their watercraft and all associated gear. Start by pulling all plugs and barriers to water movement – leave them out. This will facilitate the draining of water. If any water remains, use a sponge or towel to remove it. Leave all plugs and barrier out until just prior to the next launch.



Example of a complex boat being inspected at E80

time and labor intensive. Further, many watercraft last used on a mussel positive water are not decontaminated prior to entering Wyoming. This typically means the staff at E80 must decontaminate the watercraft, especially if water is present.

Watercraft owners can speed up their inspection and reduce the risk of moving AIS simply by moving a clean and dry watercraft. After each use and prior to leaving

If you have questions or comments related to the AIS program in southwest Wyoming, please contact Evanston Specialist Jessica Warner at 307-677-1238 or Green River Specialist Wes Gordon at 307-875-3223.

Reasons for the success of Wyoming's AIS Program

- Wyoming's waters remain free of mussels after over a decade with Quagga and Zebra mussels just outside of Wyoming's borders.
- Mandatory inspection laws—requiring all watercraft entering the state to get an inspection before launching on any Wyoming waterway.
- Strategic placement of border check stations – providing convenient, consistent and accessible inspection options to the boating public.
- Passionate and dedicated personnel – employees who care about Wyoming's water resources .
- Hands on inspection and decontamination protocol – Interception and inspection of all watercraft, including draining all water and teaching the public how to transport a clean and dry boat. Decontamination of high-risk watercraft.
- Bilge plug regulation requires all plugs to be pulled – majority of boaters showing up to check stations with plugs out and water barriers open.
- Education – Wyoming AIS program educates boaters about the threats of AIS and steps boat owners can take to prevent their introduction and spread.
- Proactive sampling and monitoring - no Zebra or Quagga positive waters to date.

Upcoming Flaming Gorge Research Projects

Over the next few years, anglers may notice an additional presence of Department personnel on Flaming Gorge Reservoir as data is collected to inform future management decisions. Data collections will be for projects focused on kokanee salmon, lake trout, and the entire food web.

Kokanee Project

Kokanee were stocked in the reservoir to take advantage of an abundant zooplankton population while enhancing the sport fishery. Since their introduction, they have become the dominant sport fishery for anglers and food for trophy lake trout. To meet the demand from anglers and lake trout, there are 1.6 million Kokanee stocked by the



Department, Utah Division of Wildlife Resources, and Jones Hole National Fish Hatchery. The Department alone has been stocking 900,000 kokanee, which accounts for about 75% of the state's total kokanee production.

Success of the fishery is not solely based on stocking. Kokanee also reproduce naturally in the reservoir and some of the tributaries – natural kokanee. Unfortunately, proportion of hatchery and natural fish that return to anglers is unknown. As such, this project seeks to answer the following questions:

- What proportion of the kokanee population in the reservoir are hatchery-produced and what proportion are from natural spawning fish?
- What proportion of the kokanee that are caught by anglers were stocked from a hatchery and what proportion were naturally spawned?
- Looking at the major groups of spawning kokanee in the reservoir and major tributaries, what is the composition of hatchery and natural kokanee in each group?
- Is there a difference in the rate of growth of kokanee stocked from a hatchery versus those from natural spawning groups?

Upcoming Flaming Gorge Research Projects

Lake Trout Project

Lake Trout are a popular sport fishery in Flaming Gorge Reservoir, too. Many anglers enjoy trying their hand at catching a 50+ pound lake trout or a full daily limit of 12 less than 28 inches in total length. In Wyoming, data has shown that trophy lake trout densities have decreased, while densities of small lake trout (<28 inches) have increased. When fish populations exceed the available resources, their growth typically slows down resulting in increasingly abundant small fish. Naturally, if this phenomenon occurs with lake trout in Flaming Gorge Reservoir, the trophy fishery component could cease to exist. In order to assess the abundance of lake



trout while they are young, we first need to sample them. As such, the lake trout project is focused on determining how to effectively sample lake trout less than 19 inches, where they are located, and the best time of year to sample them. Being able to effectively sample smaller lake trout will give us an 'early warning system' to better inform management in coming years before they are recruited to anglers.

Food Web project

The flow of energy through a system changes with time as species and population sizes fluctuate. It has been nearly 30 years since the flow of energy or food web structure was evaluated at Flaming Gorge Reservoir. Since then, the reservoir has undergone many changes and it is important to understand how energy/resources are flowing now. As such, the third project is focused on mapping the food web dynamics in the reservoir. A completed food web structure will allow us to see who is eating whom, if their diet changes as they age, if their diet changes seasonally, and if their diet changes from one end of the reservoir to the other.

Fall is a great time to catch small Lake Trout

Fall fishing for small Lake Trout on Flaming Gorge Reservoir (FGR) can be lonely, but the bite can be amazing. Fall and even early winter is a great time for boat anglers to target small Lake Trout with the added bonus of fewer anglers and boaters on the water. When surface water temperatures dip below 55 F (mid to late October) shore anglers can get in on the action as well.

As of January 1, 2019, fisheries biologists with the Wyoming Game and Fish Department and the Utah Division of Wildlife Resources liberalized the limit on Lake Trout to encourage anglers to harvest fish less than 28 inches because they are simply too abundant. For detailed information on FGR Lake Trout Management check out the following two articles in past Green River Angler Newsletter: Volume 12, page 3 and Volume 13, page 3. Here are some tips that may help if you are interested in taking advantage of the new liberal limits this fall and upcoming winter.

No matter how you decide to pursue small Lake Trout you will have the greatest success by fishing the right spot. A good bathometric map with depth contours is invaluable (for example, Fish-n-Map Company available from local stores or online at www.fishnmap.com or a phone app like Navionics. Using your map and sonar, look for Lake Trout on flats, humps, ridges and in draws

between 40-80 feet of water adjacent to deep water. Early and late in the day, Lake Trout can typically be found on top of flats, humps and ridges, sometimes a good distance from deep water drop offs. As the sun gets higher they will move closer to deep-water drop offs and by

casting from shore. A medium-heavy action rod may help with setting the hook when jigging for fish in deep water as will low stretch lines like braid and fluorocarbon (8-10 lb). Eight to 10 lb monofilament works well for trolling.

White and luminescent lures always



A small Lake Trout harvested while vertical jigging.

mid-day, you will likely find them within those areas. Any time of the day, you may find them in the draws that cut down from shallow to deep water off the flats and ridges. Lake Trout use these features not only as cover but also as travel paths. If fishing from a boat, use your sonar to locate fish and keep moving if you are not finding them or if they are not biting.

Medium action rods are good all-around rods for jigging, trolling and

seem to be productive, but earth tones that mimic crayfish will also work. Don't shy away from brightly colored glow lures – sometimes pink, yellow, orange, purple, etc may work. When fishing for small Lake Trout, tipping your lure with a small piece of Sucker, Chub or Sculpin meat adds enticement – but do not overdo it. Typically, a piece the size of your thumbnail, or smaller, will do the trick. Fish attractants can help mask your scent as well.

New Lake Trout limit adopted January 1, 2019. Flaming Gorge Reservoir in Sweetwater County.

The creel limit on lake trout shall be twelve (12) per day, twenty-four (24) in possession. No more than one (1) lake trout in possession shall exceed twenty-eight (28) inches.

Fall is a great time to catch small Lake Trout (cont.)

Lures ranging 2-4 inches in length and weighing 1/4-1/2-ounce work well depending on depth and presentation- heavier lures work well in deeper water. Whether you are vertical jigging, casting or trolling, vary your presentation until you find what is working.

After the long hot summer Lake Trout will start cruise near shore when water temperatures are 55F or colder. This puts them within easy reach of shore anglers. Try fishing shorelines where the features described above are within casting distance and adjacent to deep water.

Throw spoons and soft-bodied jigs as far out as you can and vary the retrieve until you figure out what works. Lures that glow help attract fish early and late in the day and if you are casting to depths over 30 feet. Try counting down your lure until you find the bottom and on your next cast start retrieving just before you hit the bottom. Similar to fishing from shore, boat anglers can cast white or luminescent tubes and curly tail grubs along the shoreline.

If you own a boat your options increase substantially. No need to wait for surface temperatures to drop below 55 F. Lake trout are active below the thermocline all summer and fall. Trolling and vertical jigging are productive year round using a variety of lures. For trolling many people have luck with spoons like Needlefish, Crocodiles, Rocky Mountain Tackle Vipers, Rapalas and Flatfish. Ko-



Examples of lures typically used to target small Lake Trout.

kanee lures, such as dodgers and squids, may also work well. When fish are shallow or close to shore, planer boards and long lining can be a productive way to present lures. If fish are deep, down riggers give you precise control over the depth you place the lure. Vary the depth of your lure depending on where you see fish on the graph. Fishing your lure behind the down-rigger ball within a few feet of the bottom is a productive strategy. Anglers typically troll between 1.6 and 2.0 mph, but speed changes can also provoke a strike.

Whether you are fishing from a boat or through the ice, vertical jigging Lake Trout is productive and a lot of fun – try active jigging, subtle jigging and dead sticking. Anglers have success with a variety of tube jigs, swimbaits and curly tail grubs and jigging spoons (Northland Buckshots, Buzzbombs, and Thomas Cyclones), Rapala Jigging Raps, and blade baits (Sebile

Vibrato) work for less active fish. Fish your lure of choice just off the bottom, and watch your sonar for suspended fish. Strikes often come when you lift your lure after sitting it on the bottom for a short while. Once again, move if you are not seeing fish on your sonar or getting bites.

To find more information about Lake Trout in FGR read “Questions and Answers Regarding Lake Trout in Flaming Gorge Reservoir” found at the following WGFD website <https://wgfd.wyo.gov/Regional-Offices/Green-River-Region/Flaming-Gorge-Management>. You will also find tasty recipes for cooking your catch.

For more information, contact the Wyoming Game and Fish Department in Green River, Wyoming at 307-875-3223 or the Utah Division of Wildlife Resource in Dutch John, Utah at 435-885-3164.

Littlefield Creek Culvert Replacement

Littlefield Creek is a tributary in the upper Muddy Creek watershed (south of Rawlins, WY) where restoration efforts of Colorado River Cutthroat Trout (CRC) populations have been occurring over the past two decades. The upper segment of Littlefield Creek is located on the Grizzly Wildlife Habitat Management Area (WHMA), and is considered one of the stronghold stream reaches supporting the CRC population. The statewide habitat and access crew replaced a deteriorated upper Littlefield Creek culvert at the Grizzly WHMA access road crossing. Precipitation runoff had funneled down the road concentrating on the causeway over the culvert, which eroded the fill material and compromised culvert function. Drain pipes were also installed to reduce erosion on the road over the new culvert. The larger 72 inch culvert was bedded with cobble and gravel to provide 2.8 miles of upstream passage for CRC and other native fish, while improving stream stability and function.



Littlefield Creek culvert installation. The culvert was bedded with cobble and gravel to improve fish passage and stream stability.

Green River Bank Stabilization at Lunch Island

Technical assistance was provided to Seedskafee National Wildlife Refuge (NWR) personnel with a Green River bank stabilization project at Lunch Island on the refuge. A livestock water gap rock crib had been installed years ago, and was causing the left side of the river channel to fill with sediment which forced the river flow and its erosive forces against the right side of the channel along the bank of the island. During February, Seedskafee equipment operators reshaped 400 ft of vertically incised bank (right side of river channel—pictured below) and covered it with sod plugs, then removed the rock crib and used the rock to build a series of deflectors called “barbs” to direct the flow away from the re-constructed bank (pictured below). Later in April, Department biologists and volunteers assisted Seedskafee NWR personnel with planting willow poles along the new bank to further stabilize the bank. The river channel flowing around the left side of Lunch Island supports trout in both the newly constructed channel and previously build habitat features. This side channel is a favorite destination for anglers.



Freshly completed bank stabilization features on the Green River at Lunch Island.

Freshly completed bank stabilization features on the Green River at Lunch Island.

Green River—Trout Population Monitoring

Good water years have resulted in excellent fishing and high numbers of fish in the Green River in recent years. Wyoming Game and Fish Department personnel annually sample at least one reach of the Green River between Fontenelle Dam and Flaming Gorge Reservoir to monitor the stocked and wild trout populations. The most recent survey was completed in the spring of 2019 and preliminary results are encouraging. Although population estimates have not yet been calculated, the total number of trout sampled was high and fish were in excellent condition.

Rainbow Trout dominated the catch, followed by Brown Trout, Snake River Cutthroat Trout, and Bear River Cutthroat Trout. Average lengths of all four species ranged from 16-18 inches and averaged 1.5-2.5 pounds. Some exceptional fish over 25 inches were also caught.

Population surveys are conducted in early spring prior to runoff and trout spawning. A mark-recapture survey is completed at night using two electrofishing rafts. During a given year, crews sample the same 3-5 mile reach of river every other night for a total of three nights on the water. Crews float the river at night and “fish” the available habitat with electricity that temporarily stuns the fish making them easier to net. By sampling at night, the weather is usually better, fish come out of their deep water refuge habitats and are more readily sampled, meaning good numbers can be caught each night.

Each night the fish caught receive a small unique fin clip called a “mark”. The ratio of marked to unmarked fish allows a fisheries biol-



Raft electrofishing on the Green River at night.



Example of a unique fin clip or “mark” during a mark-recapture survey.

ogist to estimate the number of fish per mile. Lengths and weights from all fish are also recorded which allows us to track fish growth and estimate the number of pounds per mile.

The Wyoming Game and Fish Department annually stocks 35,000 Rainbow Trout, 25,000 Snake River Cutthroat Trout, and 15,000 Bear River Cutthroat Trout that range from 6 to 9 inches in length. The stocked fish maintain the population of spring spawners. Unfortu-

nately the trout that naturally spawn in the river produce few fry and subsequently even fewer adults. The fall spawning Brown Trout below Fontenelle Reservoir successfully reproduce and their offspring maintain a wild population anglers enjoy.

Native Species Research

There are many fish species native to the Green River Region that you may not be aware of. Fish like the Bluehead Sucker, Flannelmouth Sucker, and Roundtail Chub were historically common in the lowland rivers of the region. Up higher in the drainage, Colorado River Cutthroat Trout and Mountain Sucker were the most common species. Native suckers and chubs, while rarely targeted by anglers, are important components of our aquatic ecosystems. However, most native fish have experienced severe declines in their distribution throughout the Green and Colorado Rivers. Most of these declines are due to habitat alteration, water withdrawal, dam building, and nonnative species introductions. For example, Roundtail Chub have been lost from 55% of their historic range across the Colorado River basin and are currently only found in a few isolated tributaries of the Green River and a handful of mountain lakes in Wyoming. In an effort to ensure the persistence of all of our native species, The Wyoming Game and Fish Department is responsible for monitoring and managing these species to maintain healthy fisheries throughout the state.

In 2018 the Wyoming Game and Fish Department began a project studying the distribution and abundance of Roundtail Chub throughout the Blacks Fork and Hams Fork drainages of Wyoming. Fisheries biologists sampled 108 reaches using electrofishing gear and several types of nets throughout the basin. A total of 1,491 Roundtail Chub were captured during sampling. The number of Roundtail Chub captured per site increased from about 3 fish in 2004 (severe drought conditions) to 17 fish in 2018 (several years of near normal precipitation), indicating the Roundtail Chub population in the Blacks Fork drainage response year round flows in the

Blacks Fork drainage.

Moving forward Wyoming Game and Fish Department will investigate the movement of Roundtail Chub in the Blacks Fork drainage through 2021. In addition, movement of Flannelmouth Suckers will be documented. During 2018 sampling, 560 Roundtail Chub were implanted with a small passive integrated transponder (PIT) tag that can be detected by in stream antenna arrays. Sampling will continue in 2019 with the goal of tagging an additional 440 Roundtail Chub (1,000 total) and 1,000 Flannelmouth Suckers. Six PIT tag antenna arrays have been installed; four in the Blacks Fork, one in Muddy Creek, and one in Hams Fork. These arrays will collect data when a tagged fish swims over it, allowing biologists to better understand when and where Roundtail Chub and Flannelmouth Suckers are migrating. This study will allow biologists to document where these species are spawning and provide important information that will help to better manage these species and conserve important aquatic areas in the Green River region.



An adult Flannelmouth Sucker sampled in the Blacks Fork River.

Master Angler Opportunities in the Green River Region

As of June 1, the Wyoming Game and Fish Department started the “Master Angler” program. The program recognizes anglers that catch trophy sized fish from Wyoming waters. The program is simple. When you catch a fish that meets or exceeds the minimum qualifying length for a species and take a photo from which the length can be verified. Then, go to the Department’s website, complete the easy application, and submit the photo. For more information about the Master Angler program such as rules, qualifying lengths, submitting your catch, and rewards; check out the following link: (<https://wgfd.wyo.gov/Fishing-and-Boating/Master-Angler#rewards>).

You can catch many of the species for this program in the Green River Region. Below is a list of waters, among others, that regularly grow fish that exceed the minimum qualifying length for the Master Angler program. With a little perseverance and skill, you could catch several fish that qualify for the Master Angler program.

Table 1. List of waters where certain species regularly meet the minimum qualifying length for the Master Angler program.

	Green River Below Fontenelle Dam	Flaming Gorge Reservoir	Fontenelle Reservoir	Kemmerer City Reservoir	High Savery Reservoir	Sulphur Creek Reservoir	Viva Naughton Reservoir	Woodruff Reservoir
Brown Trout	X	X						
Burbot		X	X					
Channel Catfish		X						
Cutthroat Trout	X	X	X					
Kokanee Salmon	X	X	X					
Lake Trout		X						
Mountain Whitefish	X		X					
Smallmouth Bass		X						
Rainbow Trout	X	X	X	X			X	
Tiger Trout					X		X	
Walleye						X		
Yellow Perch								X

2019 Stocking Requests

In 2019 the Green River region will receive fish from 8 of the 10 state hatcheries and rearing stations scattered around the state and one federal hatchery in Utah—Jones Hole National Fish Hatchery. The state facilities include Auburn Fish Hatchery, Boulder Rearing station, Clarks Fork Fish Hatchery, Dan Speas Fish Hatchery, Daniel Fish Hatchery, Dubois Fish Hatchery, Ten Sleep Fish Hatchery and Wigwam Rearing Station. The majority of the waters stocked in the region are listed below. More information about the state hatcheries and rearing stations can be found on the Department website under Fishing & Boating. K=Thousand M=Millions

Waters	Brown Trout	Bear River Cut	Channel Catfish	Colorado River Cut	Rainbow Trout	Kokanee	Snake River Cut	Tiger Trout
Arrowhead Spring Pond					750			
Bear River		2.3 K						
Big Sandy Reservoir	22.5 K				22.5 K			
Big Sandy River	15 K							
Blacks Fork River	2 K			2 K				
Diamondville Pond							700	
Flaming Gorge Reservoir		200 K			330 K	1.2 M		
Fontenelle Reservoir		15 K			50 K	75 K	800	
Green River		15 K			35 K		25 K	
Herald's Slough Pond					1.2 K			
High Savery Reservoir				10 K		10 K		10 K
Jim Bridger Pond					3 K		500	
Kemmerer City Reservoir					10 K			
Kemmerer Community Pond					400		1.3 K	
Lyman City Pond					800			
Meeks Lake								500
Mountain View Pond				700				
Murray Reservoir					2 K			
Robbers Gultch Reservoir					1 K			
Rock Springs Pond					1.3 K			
Savery Creek & Little Savery Creek	1.8 K				4 K			
Sulphur Creek Reservoir		20 K						
Sweetwater Kids Pond (Jamestown)					750			
UP Ice Pond (Evanston)		5 K			3.6 K			
Viva Naughton Reservoir					59 K			10 K