Wyoming Game and Fish Department

Laramie Region Angler Newsletter

2023

Laramie Region Aquatics Team

The days are longer and the snow is melting, it's time to tuck the ice auger away and spool new line on the reel. Spring is a great time to fish in the Laramie Region and we hope you enjoy the aquatic resources. This newsletter highlights the fresh start at Saratoga Lake, update on Lake Hattie, information on native non-game fish, and an update on the Master Angler program. Enjoy tight lines in 2023!

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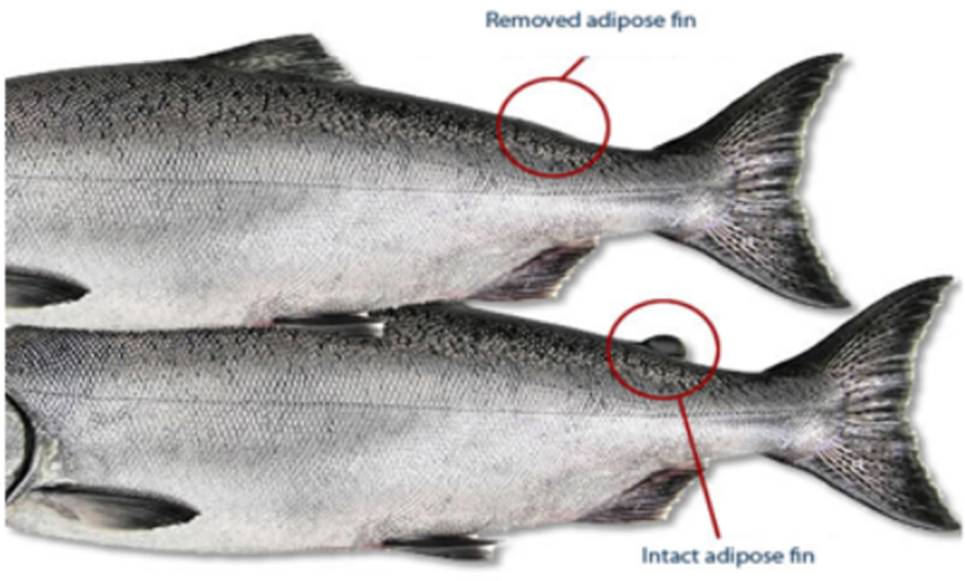
Twin Buttes Reservoir 2023 Angler Survey

Twin Buttes Reservoir is one of the lakes collectively known as the Laramie Plains Lakes. The reservoir is on a mix of private and Bureau of Land Management property, but is managed by the Wyoming Game and Fish Department as a Public Access Area (https://wgfd.wyo.gov/Public-Access/Public-Access-Areas/Twin-Buttes).

Prior to 2020, 10,000 Rainbow Trout (Eagle Lake strain) were stocked every spring. However, a stocking change was made in 2020 to stock 5,000 Rainbow Trout (Eagle Lake strain) in the spring and 5,000 Rainbow Trout (Fall strain) in the fall. In fish, a strain refers to a group of related individuals that was created through selective breeding for a desired trait. For example, the Fall strain was developed to spawn in the fall. This stocking change was done to evaluate the contribution of each strain to spring and fall catch rates for bank anglers. To accomplish this evaluation at Twin Buttes, all stocked Fall strain Rainbow Trout have had their adipose fin removed (see picture below). This allows for easy identification in the field. Now we need data from anglers about their catch.

We are asking anglers this year to look for Rainbow Trout with their adipose fin removed. Be on the lookout for signs at Twin Buttes Reservoir with a QR code that links you to the angler survey. In addition, you may see a creel clerk at the reservoir collecting data on how many Rainbow Trout you caught that had their adipose fin removed or intact.



A Fresh Start at Saratoga Lake

Saratoga Lake is a 284 surface acre shallow reservoir (< 20 ft deep) created in 1950 and located immediately northeast of Saratoga, WY. Saratoga Lake was first stocked in 1951 with Rainbow and Brown trout and the reservoir has been managed as a trout fishery since. Other fish species such as suckers, Walleye, and Brook Stickleback have moved into the reservoir from the North Platte River during the delivery of water. Suckers, once present, quickly increased to high abundance. They often fed on similar items as Rainbow Trout, which increased competition for food and decreased the quality of the trout fishery. To reduce the number of suckers and improve the trout fishery, rotenone projects were completed three times on Saratoga Lake between 1965 and 1998. After these projects, trout growth improved for about 10 years before sucker numbers increased again. By 2010, sucker abundance was high and the benefits of the 1998 project were no longer evident.

Our objective for the Saratoga Lake fishery is to maintain a high proportion of large trout (50% ≥ 16 inches) and moderate trout catch rates for anglers. We failed to meet those objectives between 2013 and 2018. In an attempt to improve the fishery, management changes were put into motion in 2018, that included (1) reducing Rainbow Trout stocking rates; (2) adding Brown Trout and Tiger Trout to the annual stocking schedule; and (3) mechanically removing suckers. The fishery appeared to be responding to these changes and in 2021 Saratoga Lake met the management objective for large size trout for the first time since 2013. Saratoga Lake changed from a fishery with higher abundances of smaller-sized Rainbow Trout to a fishery with lower abundances of larger-sized Rainbow Trout.

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A Fresh Start—Continued

While this change to the trout fishery was exciting to see, Yellow Perch were captured in Saratoga Lake for the first time during 2021 netting and varied in size between 7.0 and 9.2 inches. The Yellow Perch discovery was significant since they were not present anywhere within the North Platte River drainage in Wyoming or Colorado upstream of Glendo Reservoir. In addition, Yellow Perch typically fail to produce quality fishing experiences in Wyoming's small to medium sized shallow lakes and reservoirs and often result in the abandonment of trout management. To prevent downstream spread of Yellow Perch throughout the North Platte River system and to maintain the Saratoga Lake trout fishery, a rotenone project was completed in September 2022 to eradicate Yellow Perch from Saratoga Lake.

No fish were collected during intensive fish sampling efforts conducted in October of 2022, indicating the project successfully removed all fish from Saratoga Lake. By removing Yellow Perch and suckers, Saratoga Lake was granted an exciting new start. Fish stocking will resume in the spring of 2023 and will include Brown, Rainbow, and Tiger trout. It is anticipated that these fish will grow quickly as trout grew about 5 inches per year following past rotenone projects at Saratoga Lake. It is also anticipated that the benefits of restarting the fishery will last longer. A fish screen is being installed on the Saratoga Lake inlet, which should impede fish movement from the North Platte River into Saratoga Lake and increase the amount of time that conditions remain good for trout growth.

The boat ramp, which had a section that was bulging upward, was also repaired in 2023. Major improvements to the dam, fishing jetties, and water management infrastructure for the associated wetlands have also been completed in recent years. All these projects have resulted in an improved recreation area for anglers, bird watchers, waterfowl hunters, and general outdoor enthusiasts, that will last for years to come.

Species Spotlight—Smooth Greensnake

Smooth Greensnakes are typically found in foothill and lower montane zones and are often associated with forest and meadow habitats within and adjacent to riparian areas. They are relatively widespread in the eastern United States but only smaller isolated populations likely still exist in the central Great Plains and southern Rocky Mountains. Wyoming contains known populations in the Sierra Madres, Snowy Range, Laramie Range, and Black Hills. Although diurnal, Smooth Greensnakes are highly cryptic, hiding under logs, rocks, and debris much of the time. Because they prefer lush areas, their small thin body, bright green color, and quick speed makes them hard to detect in grass. Furthermore, the cryptic nature of Smooth Greensnakes often limits our understanding of their status in Wyoming populations.

The population in the Snowy Range was of interest given that past observations only occurred from one small area along the Rock Creek trail near Arlington. Surveys for Smooth Greensnakes in the Snowy Range were conducted in 2022 to better understand their current distribution. Eight Smooth Greensnakes were detected during surveys. They were detected in several drainages west of Rock Creek, suggesting that the population is more robust than previously thought.

Snakes were typically detected mid-morning on east-facing or south-facing slopes on dry sagebrush hillsides near aspen and willow dominated riparian areas. Three of the snakes were detected basking on or immediately adjacent to trails. Although most Smooth Greensnakes were detected on dry hillsides, aspen and willow dominated riparian areas are still considered preferred habitat. Those areas just happen to be more difficult places to detect the snakes because of the lush riparian vegetation.

Smooth Greensnakes may occur in a larger area of the Snowy Range and Sierra Madres than currently known. All observations of these snakes are important and help us better understand their current status. Keep your eyes peeled when recreating in these foothill areas and especially when near riparian areas. Any observations can be reported to WGFD and are greatly appreciated!

Where have all the big fish gone?

Lake Hattie (3,000 surface acres when full) is the largest of the group of waters known as the Laramie Plains Lakes. Currently, the lake is low, due to recent drought conditions. The lake is stocked with Bear River Cutthroat Trout, Brown Trout, Kokanee, and Rainbow Trout. The lake has long been known for growing large Rainbow Trout (≥ 24 inches in length), and these large Rainbow Trout even have a local nickname from anglers called "Hattie Fatties". Based on sampling data, the Rainbow Trout population is at its highest level and angler catch rates have been good; however, the "Hattie Fatties" have disappeared.

While Rainbow Trout abundance is high, the lack of fish ≥ 16 inches in length is concerning. There has been a noticeable shift in Rainbow Trout size structure since 2016 (Figure 1). In 2019, Rainbow Trout annual stocking changed from > 200,000 4-5 inch fish to 80,000 6-7 inch fish. This change potentially altered Rainbow Trout sizes and increased their abundance. In addition, it may have created crowded conditions for Rainbow Trout between 10 and 15.9 inches.

The reason for the slow growth conditions is unclear, as Lake Hattie is considered a productive lake. However, it may be due to food availability as the current zooplankton community is trending toward a smaller size than what is preferred by trout. In addition, crayfish play an important role in the diets of trout in Lake Hattie, but have not been observed in trout stomachs as much in the last few years. Currently, Rainbow Trout may not have the resources to grow beyond 18 inches in their expected life span of 5-7 years. We will study the age, growth, and diets of Rainbow Trout to help explain these interesting trends in the fishery. In the mean time, with low water levels and crowding issues, further stocking reductions will occur in the future, until we see more "Hattie Fatties" back in the reservoir.

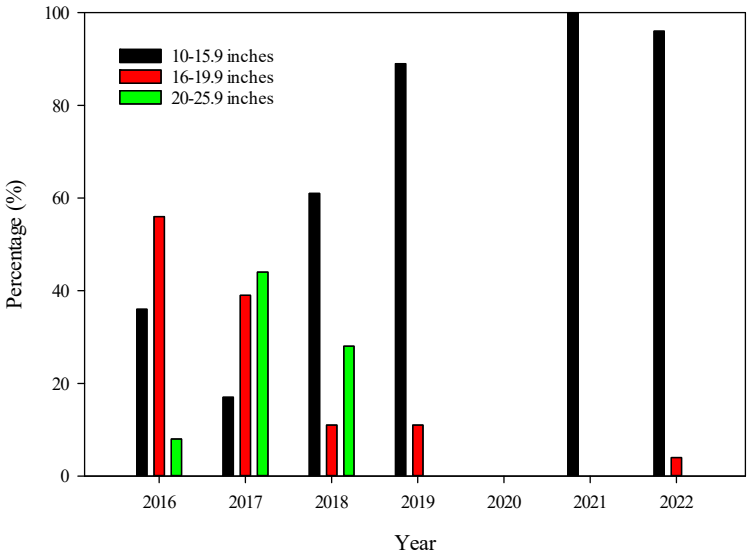

Figure 1. Proportion of three size classes of Rainbow Trout from June sampling events at Lake Hattie from 2016 through 2022; no sampling occurred in 2020.

AIS: Emerging Threats

The threat of zebra and quagga mussels to Wyoming's waters is closer than ever before. In August of 2022 zebra mussels were discovered in Pactola Reservoir, located 13 miles west of Rapid City, South Dakota, in the Black Hills. The reservoir is only 27 miles from the Wyoming border and is a popular boating destination for Wyoming and South Dakota residents. Mussels were also discovered in Highline Lake, located 24 miles northwest of Grand Junction, Colorado.

Results from 2022 AIS monitoring indicate that Wyoming is still free of invasive mussels. Westward expansion of invasive mussels is significant as Wyoming remains one of the few states yet to have the destructive species. Although free of zebra and quagga mussels, last season there was a new discovery of Asian clams in Glendo reservoir. Previously known to only be present downstream in Guernsey Reservoir, these clams have been moved upstream, further expanding their range within Wyoming.

It's important to remember how to prevent the spread of invasive species into and within the state. Adding these guidelines to your routine when leaving water bodies can significantly reduce the spread of AIS.

Monitoring lakes for zebra and quagga mussels

Clean all equipment and gear of plants, mud and debris. Never move a plant or animal from one location to another.

Drain all water from your gear and equipment. This includes all types of watercraft, waders, boots, clothing, buckets – anything that comes into contact with the water.

Dry everything thoroughly. In Wyoming we recommend drying for 5 days in the summer, 18 days in the spring or fall, or 3 days at freezing temperatures.

Little fish in little ponds

While much is known about Wyoming's famed sport fisheries, less is known about the native non-game species that swim in southeast Wyoming waters. Over the last 20 years, biologists have surveyed many of the streams and rivers (lotic waters) to better understand where and how many of these unique and less understood fish species occur. We've found the colorful Orangethroat Darters and Plains Killifish, guppy looking Plains Topminnows, and the large schools of stonerollers, suckers, and chubs. All are important parts of the aquatic ecosystems they live in, and luckily many of these populations are doing quite well. What is even less known is if these native non-game species live in the lakes, ponds, and wetlands (lentic waters) throughout southeast Wyoming.

Brassy Minnows

In 2022, a special project was initiated to better understand the small-bodied fishes that live in lentic waters. A crew was hired to inventory these waters and was funded through the USFWS State Wildlife Grant Program. A total of 102 waters were sampled in the Horse Creek, Medicine Bow, North Platte, Laramie, and Little Laramie drainages. Species of Greatest Conservation Need (SGCN) were targeted, as these are native species whose conservation status requires increased management attention. The SGCN species that were found included Brassy Minnow, Common Shiner, Iowa Darter, Plains Killifish, and Plains Topminnow. And they were not only found, but found in good numbers, as they were detected at 49% of the sampling sites! Brassy minnows were most common and Plains Killifish and Plains Topminnow were least common. One important finding was that the pond or wetland's proximity to a river mattered. Meaning when these lentic habitats have some connectivity to a river, even if it's just during spring run-off, fish can move into these habitats and then thrive once established. Approximately 75% of the waters that supported these species were found on private land. This was a very fruitful project and could not have been successful without the help of the private landowners that gave permission to sample. Many thanks to all that contributed to the project!

2022/2023 Top Ten waters in Laramie Region Master Angler Awards

The popularity of the Master Angler Program continues to grow since its inception in June 2019. The program recognizes the catch of trophy sized fish from our phenomenal Wyoming waters. For the Master Angler Program, qualifying fish must meet or exceed the minimum length established for that species. Adults and youth can participate in this program. For more information on the Master Angler Program visit: https://wgfd.wyo.gov/Fishing-and-Boating/Master-Angler. In addition, there are many angling challenges just for youth anglers (https://wgfd.wyo.gov/Fishing-and-Boating/Youth-Fish-Challenge).

The Laramie Region offers diverse fishing opportunities for many species like bass, trout, crappie, and Walleye. Some of the most popular waters include the Laramie Plains Lakes (e.g., Alsop Lake, Diamond Lake, Lake Hattie, Twin Buttes Reservoir, and Wheatland Reservoir #3). Other popular fisheries, like Grayrocks Reservoir, Hawk Springs Reservoir, and Wheatland Reservoir #1, also account for many Master Angler awards for warmwater fish. The Master Angler Program is fun and rewarding, so participate by submitting photos of your outstanding catch from the Laramie Region!

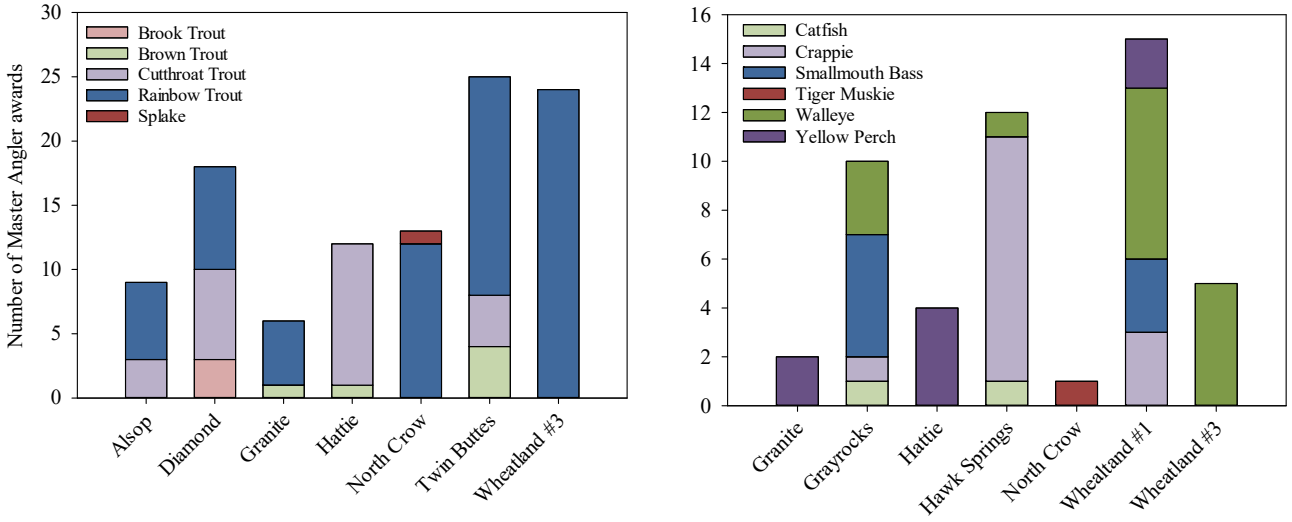

Figure on the left shows the number of Master Angler awards received for trout species at the top waters in the Laramie Region. The figure on the right shows the number of awards for warmwater species at the top waters in the Laramie Region. Time period is from January 1, 2022 to April 1, 2023.

Laramie Region Angler Survey—2023

Public involvement in fisheries management generally produces better informed decisions. One method for soliciting public involvement is through surveys. This fall, the Wyoming Survey and Analysis Center will be administering a web-based survey to a random set of anglers that fish in the Laramie Region. This is your chance to complete one of the most comprehensive angling surveys ever conducted for southeast Wyoming and let your voice be heard! Special regulations pertaining to use of bait, creel limits, and length restrictions are currently used or are being considered for multiple waters. In this survey Laramie Region fish biologists will seek opinions on management issues at Diamond Lake and Wheatland Reservoir #3. Even if you are not sent the survey via email, we would still like to hear from you. Links to the survey will be posted on Game and Fish social media.

Wyoming Game and Fish Department

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We welcome all questions and comments on this newsletter or about the aquatic resources within the Laramie Region. Please feel free to contact us at 307-745-4046 or send an email to:

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