Wyoming Game and Fish Department

Pinedale Region Angler Newsletter

Volume 17 2023

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Fish Management in the Pinedale Region

Thanks for reading the 2023 Pinedale Region Angler Newsletter! We had another great year and are here to share many of the management, habitat and fish culture highlights from previous years.

As always, please feel free to contact us with any comments or questions about the aquatic resources in the Upper Green River and Lower Bear River drainages of Wyoming. Your input is important to us as we manage these resources for *you*, the people of Wyoming. You'll find our contact information on the last page of this newsletter. Thanks for a great 2022 and happy fishing in 2023!

Pinedale Region Fisheries Personnel

Daniel Fish Hatchery

Greg Lehr *Senior Culturist*
Zimri Oseland *Culturist*
Bret Barngrover *Superintendent*

Boulder Rearing Station

Joe Gillis
Superintendent

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Spawning Crew

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Fisheries Biologist

Aquatic Habitat

Luke Schultz
Aquatic Habitat Biologist

Hatchery-reared Fish in the Pinedale Region

Some anglers think that all of the trout they catch in the Pinedale Region were naturally reproduced in the water where they were caught. Others believe that their catch originated in either the Daniel or Boulder fish hatcheries. In reality, some of our trout do come from our local hatcheries, and many are naturally produced in our lakes and streams. In addition, some come from the other eight fish hatcheries run by the Wyoming Game and Fish Department, and a few even come from private hatcheries in Wyoming and other states.

Colorado River Cutthroat Trout, Bonneville Cutthroat Trout and Mountain Whitefish are the only three salmonids that were historically found in the Pinedale Region. However, many other populations were started from hatchery fish many years ago. For example, Lake Trout were stocked in New Fork Lakes from 1938 to 1941, but haven't been stocked since then. While Lake Trout can live a long life, none have ever survived for 82 years. Therefore, all of the Lake Trout now found in New Fork Lakes were produced in the lake, but only exist there because of those early stocking efforts.

A pack string loaded with milk cans full of fish heading into the Wind River Range, 1931.

Trout are still stocked in the Pinedale Region every year. For example, eight different varieties of trout were stocked in the region by the Wyoming Game and Fish Department in 2022, amounting to over 465,000 fish! While that is a huge number, only a fraction of them would have been immediately of interest to an angler. That is because 83% of those fish were stocked when they were less than six inches long; less than 1% of the fish stocked that year were at least 10 inches long. Larger fish are typically stocked in waters that get heavy fishing pressure, while smaller fish are stocked in areas where they are likely to survive and grow for a few years before being caught by an angler.

A tank of fish being hauled to a lake by a helicopter

Fish can be stocked at any time of the year in the Pinedale Region, but the timing is dictated by a variety of factors. For example, trout don't survive well when stocked in water that is running fast and muddy, so rivers usually aren't stocked in the spring. Survival of stocked trout also tends to be higher when the water is cool, so lakes are often stocked in the spring or fall. Stocking is more difficult when roads are covered with snow, and streams and lakes are covered in ice, so relatively few fish are stocked during the winter. Other issues related to raising fish in a hatchery also impact the timing of stocking fish. As a result of these and other factors, over half of the fish stocked in 2022 were released during the month of July.

Hatchery-raised trout can arrive at their new home in a variety of ways. Most fish are driven to their release site in a truck fitted with a tank of water. However, stocking more remote waters can require loading fish into tanks on all-terrain vehicles, boats, helicopters, or horses. In some cases, fish are even carried to their final destination in buckets or backpacks. Therefore, the mode of transportation required can also impact the size and timing of fish stocked.

As you can see, stocking is an important part of fisheries management in the Pinedale Region. Many anglers want to know when and where fish are stocked, so the Wyoming Game and Fish Department developed a simple way to find that information. You can find the species, size, location, and the number of fish stocked and the stocking date, for all fish stocked by the Department since 1985 in the state at: https://wgfapps.wyo.gov/FishStock/FishStock *~Pete Cavalli*

The Native Fishes of the Upper Green River Drainage

The Pinedale Region encompasses the entirety of the Upper Green River watershed. The region boasts some of the most picturesque fishing locations in Wyoming, and is home to a variety of fish species. Among those are native fishes that evolved within our streams and lakes over hundreds of thousands of years, introduced sport fish that we stocked to increase fishing opportunity, and nuisance species that likely resulted from unintentional bait-bucket introductions, decades ago. This article lists the native fish species of the Green River watershed within the Pinedale Region, and provides some information on their natural history so you can impress (or annoy) your fishing buddy this summer.

Family Salmonidae: Trout, salmon, whitefish and grayling

Colorado River Cutthroat Trout

The Colorado River Cutthroat Trout (CRC) is the only trout native to the Green River drainage. Often revered for their brilliant colors and willingness to strike a variety of flies and lures, these fish can be identified by their large, rectangular spots concentrated toward the tail end of the body. Hybridization with non-native fish and habitat degradation have reduced CRC to a fraction of their native range - about 13% in Wyoming. Their need for cold, clear water often leads the anglers that pursue them to some of the most breathtaking landscapes Wyoming has to offer, from Kendall Valley to the headwater drainages of the Wyoming Range.

Colorado River Cutthroat Trout

Mountain Whitefish

Mountain Whitefish

An often overlooked sportfish, Mountain Whitefish have salvaged many a slow day of fishing on the Green and New Fork rivers. These fish are identified by their large, silvery scales, large adipose fin and small, slightly down-turned mouth. They spawn in the fall, sometimes moving great distances—up to 15 miles—to reproduce. Mountain whitefish are a long-lived species, with adults as old as 21 years recently found in the Green River. Fishing wet-flies or nymphs under a bobber will often result in a whitefish strike before you can say, "fish-on!"

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Family Cyprinidae: Minnows

Roundtail Chub

Roundtail Chub

Exclusive to the Colorado River drainage, the Roundtail Chub was once found throughout the Green River watershed in the Pinedale Region. Currently, known populations are reduced to a few of the region's finger lakes. This member of the minnow family normally reaches 8-10 inches, although adults have been measured up to 20 inches! These fish are dark olive in color, abruptly changing to a bright white belly. Males will develop an intense splashing of red color in the spring prior to spawning. Females lay adhesive eggs that cling to rocks on gravelly, rocky shoals. Their diet consists of primarily aquatic invertebrates, some algae and small fish. Despite their large size, these fish are rarely encountered by anglers, although when hooked, they can put up a good fight!

Speckled Dace

The Speckled Dace is a minnow native to the Green, Bear and Snake River drainages in Wyoming. Chances are, you've seen these small fish darting around your feet as you wade your favorite stretch of river. They are omnivorous, eating both algae and insects, although in the Green River, diet studies suggest they seem to prefer insects. In the spring, swarms of males will turn over stones with their mouths, creating clean, silt free nests for females to lay eggs. These hard-working little fish provide forage for many of our beloved sport fisheries throughout the region.

Speckled Dace

Kendall Warm Springs Dace

Kendall Warm Springs Dace

The Kendall Warm Springs Dace, perhaps one of the rarest fish species in the world, exists only within its namesake stream, a 350 yard tributary to the Green River fed by a geothermal hot spring. These fish diverged from the closely related speckled dace hundreds and thousands of years ago, evolving to the warm 78°F plus temperatures maintained in the warm springs. Their persistence within this tiny home range makes them the only endangered fish species in Wyoming.

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Family Catostomidae: Suckers

Bluehead Sucker
A rare species, the Bluehead Sucker is native to the Green River drainage. Hybridization with non-native suckers, such as the White Sucker, is largely to blame for their decline. These fish are named for their distinct blue head, which becomes apparent in adult fish. The Bluehead Sucker's streamlined body is well adapted to the deep, fast-flowing rivers they are known to inhabit in western Wyoming. They can grow quite large, with adults often exceeding 18 inches. Bluehead Suckers feed primarily on algae and bottom-dwelling invertebrates.

Bluehead Sucker

Flannelmouth Sucker

Flannelmouth Sucker
Also quite rare, the Flannelmouth Sucker can be distinguished, in part, by a large, sickle-shaped dorsal fin. Much like the Bluehead Sucker, they are susceptible to hybridization with White Suckers. Hybridization with Bluehead Suckers can also occur, which makes identification tricky, even to a well trained eye. These fish were historically found in large rivers, smaller streams and lakes throughout the Green River basin in the Pinedale Region. Few genetically pure fish persist today. Flannelmouth Suckers are omnivores, eating a wide variety of plant and insect matter. Adult fish have even been known to eat seeds that fall into the water during spring and summer.

Mountain Sucker
Likely the most widespread native sucker species within the Pinedale region, the Mountain Sucker is found in numerous lakes and streams throughout the Green River drainage. These are relatively small fish, rarely exceeding 6 inches. Males develop a vivid red stripe along their side in the spring, prior to spawning. These suckers can be distinguished, in part, by a hard, cartilaginous ridge on their lower jaw, which they use to scrap algae off of rocks. They also have relatively small scales, so they appear much "smoother" than the other sucker species.

Mountain Sucker

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Family Cottidae: Sculpins

Mottled Sculpin

Mottled Sculpin
Mottled Sculpin exist throughout the lakes and streams of the Upper Green River watershed. They are often referred to as "bullheads", and are an important forage fish. As such, dead sculpin can be a very effective bait in some of Pinedale's premier Lake Trout fisheries. Artificial lures like bucktail jigs, marabou jigs, flatfish and the famous muddler minnow, are all used to imitate sculpin! These fish occupy rocky substrate at the bottom of lakes and streams, where they hide during daylight hours, emerging at night to feed on insects and small fish. Sculpin are spring spawners, with females laying their eggs in a nest, which the male then guards until hatching. Often times, several mating pairs will share a nest location.

Well, there you have it; a quick guide to the native fishes of the Green River drainage, within Pinedale Region. Keep in mind there are many other interesting native fish species found throughout other regions of the state. For an exhaustive account of all fish species found in Wyoming, we suggest a copy of *Fishes of Wyoming*, by George T. Baxter and Michael D. Stone. Copies can be found at the WGFD online store (https://wgfd.wyo.gov/store/Store/Publications/Fishes-of-Wyoming). Good luck fishing this summer, and be on the lookout for the native species of the Pinedale Region!

~Alex LeCheminant

Game and Fish Completes Habitat Maintenance in 2022; Additional River Work Planned for 2023

If you have been following our annual angler newsletters, or have visited the Daniel Access Area (often referred to locally as the "40-Rod Access") on the Green River in the last couple of years, you are well aware of the habitat and boat access work that has been going on out there. In 2021, Game and Fish worked with a private contractor to restore habitat on about 1,500 feet of the Green River at the site. The boat ramp was also moved slightly upstream, where access should be much easier for boaters.

Similarly, if you followed the news in spring 2022, you have likely heard much ado about the spring-time floods that inundated much of Yellowstone National Park and the surrounding region. While the Green River generally avoided the big, big floods, we did see discharges that only occur about one out of every seven to ten years. Flood waters have the potential to dislodge all sorts of things from stream banks, and can account for high erosion. While the Daniel Access work from 2021 largely held up (over 1,000 feet of river banks that were constructed held up in floods), high waters in June did dislodge about 250 feet of toe wood (large woody debris, installed in the "toe" of a streambank for stabilization), downstream from the boat ramp. However, Game and Fish routinely withholds a contingency fund of money to address needed maintenance like this, and was prepared to rebuild dislodged banks as needed.

The restoration was visited three times weekly throughout the spring in 2022 by the Pinedale Aquatic Habitat Biologist, to understand what was going on with river hydraulics, and to track needed maintenance. Following spring runoff, a plan was quickly hatched to address needed maintenance, and in August the work was completed by Wyoming Game and Fish crews in just three and a half days. New toe wood was installed and minor modifications were done to rock structures at the site. Additional willows were planted along disturbed areas in the fall – this technique showed great success with efforts in 2021. Newly established willows were very abundant in 2022 throughout the Daniel Access site.

The WGFD Habitat and Access crew installs wood on a newly constructed river bank at Daniel Access Area

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Keeping with the theme of boat access improvements, the newly constructed boat ramp and parking area at the New Fork Gas Wells site held strong during its second year of operation in 2022. The ramp was reconstructed in spring of 2021, and about a half mile of river was restored on BLM land, just upstream. This work is holding up well. Vegetation is establishing along disturbed areas on the stream banks, and additional work is planned in the coming years to improve habitat on the entire two miles of BLM ground in this reach of river. River surveys and restorations were performed in late 2022. We anticipate using 2023 to move materials to the site, with the majority of construction starting in 2024.

Elsewhere on the New Fork, we expect to begin restoration efforts on private land, near the Highway 351 crossing in spring 2023. The benefits from this project will be publically accessible to anglers and river users that float the lower New Fork. This work will begin with a couple of relatively short (less than 2,000 foot long) river segments upstream and downstream of 351, but we have private landowners lined up to complete river restoration on over five miles of the river corridor. Things are really looking up for this reach of water in the lower New Fork as the next few years will be a considerable face lift for habitat here. It's definitely a spot to keep your eye on.

Speaking of large-scale river projects, the Game and Fish Aquatic Habitat Section has also been working closely with landowners on the Green River near the Huston and Sommers boat access points to improve habitat along this roughly five mile-long segment of the river. This section of the river is accessible to boat anglers floating between Swain's Bridge and the Huston Access, and wade fishing is available along several miles of the river through the Sommers-Grindstone Fishing Access, a permanent access easement that was acquired by Game and Fish prior to 2010. Habitat improvements here will stabilize river banks, install additional wood and rock cover for adult fishes, construct and enhance backwater and alcove areas to improve rearing habitat for juvenile fishes and enhance floodplain wetlands that will improve habitat productivity of the river floodplain as a whole. River assessments were completed in September 2022, and river designs and material mobilization will begin in 2023. Construction on this reach is anticipated to begin in 2024.

WGFD Aquatic Habitat Biologist takes measurements on the New Fork River, upstream of the Gas Wells Access Area

If you get the chance to hit the water this year, definitely make a point to head out to these locations. These improvements were planned and made for you, the angler. And if you see additional spots that could use some improvement, definitely communicate with your local Game and Fish biologists to get it on their radar. We love doing these projects for YOU.

~Luke Schultz

Boreal Toad Research in LaBarge Creek Watershed

Adult Boreal Toad

Boreal Toads are declining throughout their range in the western U.S. However, populations in the Southern Rocky Mountains have experienced significant declines, while those in western Wyoming have remained relatively stable. Formally site to a robust population, surveys in the LaBarge Creek drainage have indicated a reduction of Boreal Toads. The Wyoming Game and Fish Department (WGFD) has partnered with the University of Wyoming to understand the reasons for declines within the LaBarge Creek drainage. While causes for decline are unknown, habitat loss and disease may be contributing.

After emerging from overwintering sites, Boreal Toads congregate at wetlands for breeding. Eggs and tadpoles then must survive and develop before pond drying or fall freezing. Beaver ponds serve as important sites for early life stages of Boreal Toads as they tend to hold water throughout the summer. Given that eggs and tadpoles are sensitive to changes in their aquatic environment, lack of suitable breeding habitat (i.e., beaver ponds) can prevent the recruitment of early life stages.

Another potential cause of population decline in the LaBarge drainage is the amphibian chytrid fungus *Batrachochytrium dendrobatidis* or *Bd*. *Bd* thrives in cool and moist environments and is transmitted when amphibians come into contact with infected water or other individuals. *Bd* causes the disease chytridiomycosis, which is characterized by damage to the outer layer of skin, loss of osmoregulatory function and subsequent heart failure in amphibians.

Though the fungus has caused species extinctions, susceptibility to disease differs among species and populations. Recent research on Boreal Toads in the northern Wyoming Range showed that infected toads selected habitats that were more open and drier, and toads consequently cleared infection. Studies conducted by the University will aim to understand how *Bd* is impacting Boreal Toads in the LaBarge drainage, and if they can clear infections in the same way. In addition, the work will seek to understand how infection with *Bd* influences nocturnal movements of Boreal Toads.

A graduate student will lead field work in the LaBarge Creek drainage, including surveying select beaver ponds for evidence of breeding and successful reproduction. Habitat data will also be collected at ponds to determine which characteristics are associated with reproductive success or failure. To understand the impact of disease in the system, adult Boreal Toads will be radio tracked, and recaptures will be sampled for *Bd*. Habitat data from the recapture site can then be compared to unoccupied locations to determine whether infected toads are selecting different habitat types that help them cope with disease. Finally, a subset of toads will be tracked at night.

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This research seeks to improve understanding of Boreal Toad habitat requirements. If beaver ponds appear to be limiting in the LaBarge drainage, beaver dam analogs can be installed. If toads can clear *Bd* infection through selecting open areas, habitat can be managed to promote basking sites.

Field work for the project will span summers of 2023 and 2024. If you spot the crew while out fishing on LaBarge Creek this summer, come say hi!

~ Margot Breiner, University of Wyoming

A beaver pond on the mainstem of LaBarge Creek

Journeys of the Fall Rainbow Trout

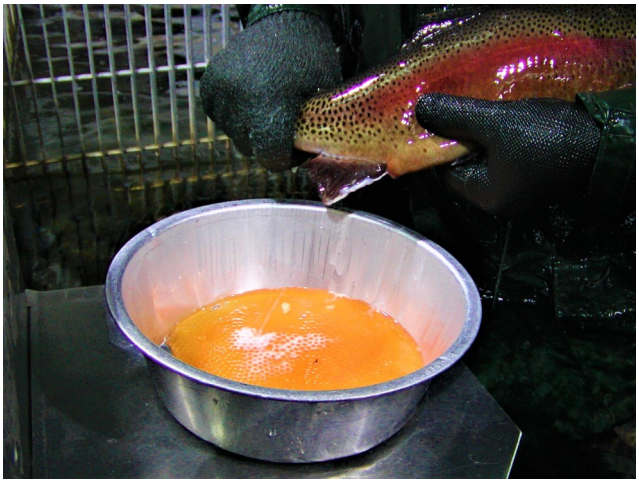
The Boulder Rearing Station, located 15 miles south of Pinedale, WY, maintains a large brood stock of mature Fall Rainbow Trout. As the name suggests, this strain of Rainbow Trout is a little different from others because they have been manipulated to spawn in the fall, rather than spring. These brood fish spend their entire life in captivity until they are stocked out as retired spawning adults. Being as large as 6 pounds, brood culls provide a good fight for both an 8-year-old with a Spider-man pole, or an avid ice fisherman with all the latest gear.

A Fall Rainbow Trout brood fish at Boulder Fish Hatchery

Fall Rainbow Trout are spawned from October through early December in the station's spawn house. First, station staff set up a funnel-like trap at the head of the brood pond's entrance and force all water to flow through a 4-foot wide center channel. Salmonids that are close to spawning have an inherent attraction to running up rivers to search out clean gravel and cold water to release and fertilize their eggs. The desire to move upstream when ripe for spawning allows station personnel to trap the fish that run upstream and hand sort them by ripeness, age, and sex.

After about a week, enough ripe fish are collected to perform a spawn. As many as several hundred pairs of fish are manually squeezed to release eggs and milt into a metal pan. Each female can produce as many as 2,500 eggs. The eggs are fertilized and washed before being placed in a cooler of water. They are then shipped to an incubating station.

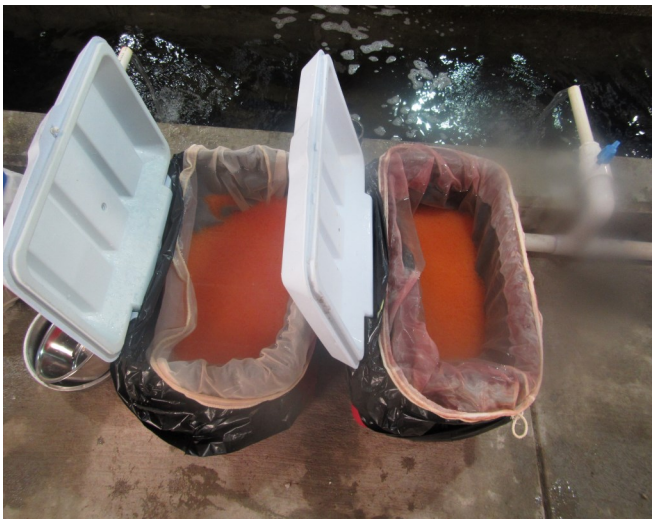
Personnel spawning Fall Rainbows in the Boulder Fish Hatchery spawning shed during early November.



Eggs and milt collected during a Fall Rainbow spawn at the Boulder Fish Hatchery

The majority of eggs produced during a spawning season at Boulder will make a short trip northwest to the Daniel Fish Hatchery, west over the Wyoming Range to the Auburn Hatchery, or north over the Wind River Range to the Dubois Hatchery. There, they will spend several weeks maturing in incubators from "green" to the "eyed egg" stage. The healthy ones will be shipped to other Wyoming hatcheries where they will hatch into fry. Some eggs will even be shipped overnight in Styrofoam coolers via FedEx or UPS to hatcheries in other states, including North Dakota, Kentucky and Maryland.

Many Fall Rainbow eggs will visit multiple hatcheries and come back home to Boulder as transfers. A large number of eggs are spawned at Boulder, shipped to Dubois for incubation, and transferred to Clark's Fork Hatchery as eyed eggs. There they will hatch and grow to become fry. Once the fry have grown large enough for transfer they will make another trip in a hatchery truck and be released into outdoor rearing raceways at Boulder. These fish will spend another nine months growing to about 6.5 inches before being stocked out into local fisheries.



Fertilized eggs in coolers before shipment to an incubation station.

Boulder isn't the only place raising Fall Rainbow trout in Wyoming. The Dan Speas Fish Hatchery near Casper annually raises several hundred thousand Fall Rainbows and stocks them out into large reservoirs like Flaming Gorge, Seminoe, Pathfinder and Lake Desmet.

Fall Rainbow Trout reach their final destination via stocking truck

A small percentage of eggs are kept separate for brood recruitment. These eggs are collected from many fish throughout the spawn so that a large proportion of the brood stock's genes can be passed down to future generations. These eggs are shipped to the Auburn Fish Hatchery in the Star Valley. Auburn personnel hatch and raise this group of fish until mid-summer of the following year before they are transferred back to Boulder. At this time, the brood recruitment fish are less than a year old. They won't become sexually mature until age three. They will be grown for two more years and then their number will be sorted down to around 2,000 of the healthiest fish to join the egg-producing adults as brood fish. In their third year, they spawn for the first time producing thousands of viable eggs and the cycle begins again.

Brood stocks like Boulder's Fall Rainbow Trout are the cornerstone of Wyoming Game and Fish's mission to provide amazing fishing opportunities to the public. The Boulder Rearing station is a great place for fish and fish culture staff to call home. We welcome you to come to visit us here, and are open daily from 8 a.m. to 4:30 p.m.

~Matt Joki

Wyoming Game and Fish Department
Conserving Wildlife-Serving People

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Important Dates to Remember in 2023

- ***March 1-Nov 30*** All watercraft entering Wyoming are required to be inspected for Aquatic Invasive Species prior to launching.
- ***May 1-Meadow Lake and Burnt Lake*** open to fishing
- ***May 1– Soda Lake*** open to fishing ***at 6am***
  ***Note:** Soda Lake closure corresponds with Soda Lake WHMA closure. Always check webpage for dates: https://wgfd.wyo.gov/Public-Access/WHMA/WHMA*
- ***June 3-Kids Fishing Day and Wyoming's Free Fishing Day*** The Wyoming Game and Fish Commission has declared June 3, 2023 Free Fishing Day to coincide with the beginning of the National Fishing and Boating week. Residents and nonresidents may fish Wyoming waters (excluding Wind River Indian Reservation and Yellowstone National Park) without a fishing license or conservation stamp. Free Fishing Day will also coincide with Kids Fishing Day at the Pinedale Town Pond next to the Pinedale ball fields where WGFD employees will be present to help with fishing and provide rods to those that don't have them.
- ***December 1-Meadow Lake and Burnt Lake*** are closed to fishing.

We welcome all questions and comments on this newsletter or about the fisheries resources within the Pinedale Region. Please feel free to contact us or send an email to: alex.lecheminant2@wyo.gov