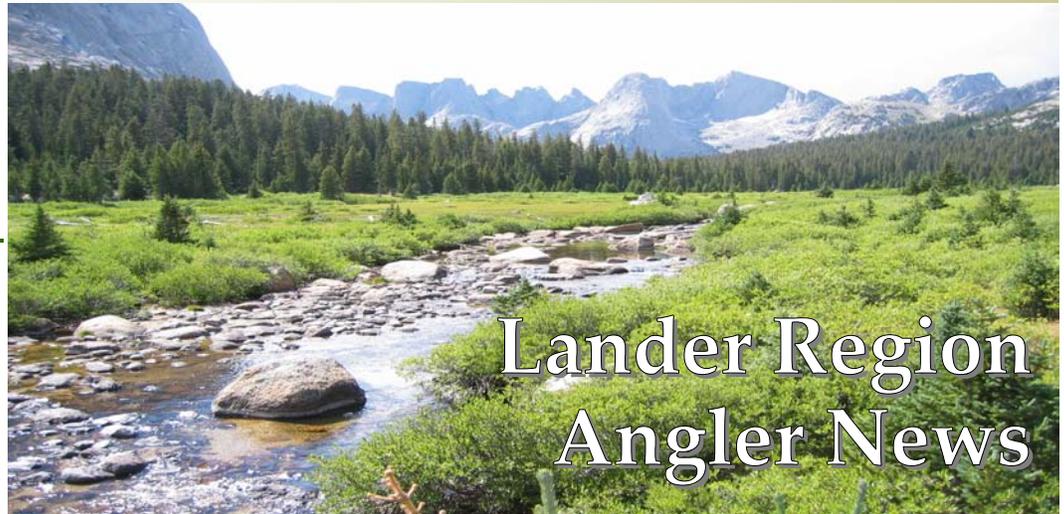


2007 Edition

Inside this issue:

| | |
|--|---|
| <i>Sauger Research in the Wind River Drainage</i> | 2 |
| <i>Free Fishing Day</i> | 3 |
| <i>Drought Conditions Continue to Affect Fisheries</i> | 4 |
| <i>Boysen Reservoir</i> | 5 |
| <i>Torrey and Trail Lakes Stocking Evaluation</i> | 6 |
| <i>Burbot Research with the University of Wyoming</i> | 6 |
| <i>Lander Area Fishing Spots</i> | 7 |
| <i>Pilot Butte Reservoir Trout Stocking Evaluation</i> | 8 |
| <i>News from the Dubois Fish Hatchery</i> | 8 |



Greetings From Your Local Fisheries Crew

Welcome to the 2007 edition of the Lander Region Angler News. This annual newsletter is designed to inform interested anglers of the activities of the Wyoming Game and Fish Department's Fish Division within the Lander Region. The Lander Region encompasses the Wind River Drainage (exclusive of the Wind River Reservation), the upper Sweetwater River Drainage, and parts of the Great Divide Basin. Whether you are a returning reader to this annual newsletter or joining us for the first time, we hope you find it informative and useful.

The Wyoming Game and Fish Department exists for the purpose of protecting and managing the fish and wildlife resources of the state for the people of Wyoming. Our simple mission statement says it all: **Conserving Wildlife—Serving People.** "Serving people" is often our biggest challenge. People in general are very diverse in their views, their values, their choices, and their guiding principles. Anglers are no different. Some find fishing to be a means for building family togetherness. Others prefer the solitude of fishing alone. For these people, catching fish may or may not be important to the overall enjoyment of their experience. Some fish for the culinary and health benefits that fish can offer. And still others prefer to strictly practice catch-and-release. All of these people are our constituents and have legitimate values and opinions.

The challenge comes when we attempt to satisfy the desires of such a diverse group of people. Management designed to provide a fisheries desired by one group of anglers may be in opposition to the desires of another group. What can we do? Well, in general we attempt to provide something for everyone. However, this usually means that we cannot provide everything for anyone.

And also, we must still follow the other part of our mission statement—"conserving wildlife". Conserving our native fish populations and habitats for current and future generations is an obligation mandated by the state constitution and state statutes. We must balance the desires of the people with the needs of the fish and wildlife resources.

So, the next time you are out fishing, be mindful of the diversity that is inherent in our society and respect the viewpoints of others. Realize that the management of the water you are fishing or the regulations that you must follow may not be optimum from your point of view, but they are necessary to protect the resources of the state and to satisfy the desires of as many anglers as possible.

We hope you enjoy this newsletter. If you have comments, concerns, or questions, please use the contact information found on the back page. We are always glad to hear from you.

Lander Region Fisheries Staff:

- Dave Dufek
Regional Fisheries Supervisor
- Kevin Johnson
Fisheries Biologist
- Joe Deromedi
Fisheries Biologist
- Dennis Oberlie
Aquatic Habitat Biologist
- Jeff Stafford
Dubois Hatchery Superintendent
- Steve Diekema
Assistant Hatchery Superintendent
- Travis Trimble
Fish Culturist

Sauger Research in the Wind River Drainage



Saugers are one of three popular North American sportfishes in the perch family. Saugers are particularly adapted to large, un-dammed, slow-moving, warm-water, muddy rivers across much of North America. Saugers are a very mobile species and have been observed to move greater than 225 miles from winter areas to spawning areas during spring.

Saugers were once the most widely distributed perch species in North America, but populations have been reduced due to the damming of rivers and blockage of migration routes, loss of river habitat, excessive harvest by anglers, competition with introduced species, and hybridization with the walleyes, a closely related perch species.

Saugers are native to the North Platte, Bighorn-Wind, Tongue, and Powder river drainages in Wyoming. They no longer occur in the North Platte River drainage and are rare in the Tongue and Powder river drainages. However, genetically pure populations occur in the Bighorn-Wind river drainages. In light of sauger population declines in other locations, the populations in the Bighorn-Wind rivers are valuable sport fisheries in Wyoming.

Research has recently been conducted to enhance understanding of saugers in the Wind River drainage and to provide information that can be used to preserve the sauger fishery into the future. Beginning the summer of 2002, three University of Wyoming graduate students, Craig Amadio, Kris Kuhn, and Patrick Lionberger, have conducted research projects on saugers in the Wind River Drainage.

Amadio focused on describing where adult saugers occur and the numbers of adult saugers in the rivers upstream from Boysen Reservoir. Kuhn's research focused on describing where adult saugers move throughout the year and the type of habitats they use. Lionberger's research

focused on determining where young saugers live in the drainage and where they move as they grow older and become sexually mature.

Amadio determined that adult saugers were widely scattered over approximately 110 miles of rivers upstream from Boysen Reservoir in the Wind, Little Wind, Popo Agie, and Little Popo Agie rivers. Adults were most common in deep pools with slow moving water, and were most abundant in the downstream portion of the Little Wind and Popo Agie rivers. Amadio and his associates estimated that approximately 4,100 adult saugers, a moderate number at best, reside in the Wind River drainage upstream from Boysen Reservoir. No young saugers less than 13

inches long were captured upstream from Boysen Reservoir.

Kuhn captured 54 adult saugers during fall 2004 at the downstream areas of the Little Wind and Popo Agie rivers, surgically implanted radio transmitters into their body cavities, and

tracked them into July 2005. These saugers preferred large, deep pools with slow moving water. Such pools are common throughout the Little Wind and Popo Agie rivers. During fall and winter, tagged saugers moved short distances among pools in close proximity. However, during the spring and early summer tagged saugers moved longer distances, as far as 17 miles, to and from spawning areas. After spawning they returned to the same pools where they were tagged in the previous fall.

During 2004 and 2005, Lionberger searched for young saugers in the drainage. Over 39,000 fishes were captured in the rivers upstream from Boysen Reservoir during summer 2004, but none were juvenile saugers. Sampling in Boysen Reservoir the following summer resulted in the capture of small numbers of young saugers, suggesting that the reservoir may provide nursery habitat for juveniles.



tracked them into July 2005.

...approximately 4,100 adult saugers, a moderate number at best, reside in the Wind River drainage upstream from Boysen Reservoir.



Walleye (top) and sauger (bottom).

Sauger Research continued

The chemistry of bones that form the inner ear called otoliths was used by Lionberger to address the notion that Boysen Reservoir may be the nursery area for young saugers that are spawned in the upstream river system and then return to the river as adults. Otoliths consist of rings laid down each year, like tree rings, that can be used to age a fish. Evidence from this investigation suggests that saugers spawned in the rivers upstream from Boysen Reservoir spend about 4 years of their early lives in the reservoir, and then move to the rivers when they reach 13-14 inches or more and become sexually mature.

These observations support the notion that saugers in the Wind River drainage use unique strategies to complete their life cycles. Throughout the year, movements are small relative to other sauger populations and overall movements depend on how far their home areas are located away from spawning sites. These studies provide evidence that young saugers produced by adults that spawn in the river system drift into Boysen Reservoir where they remain until sexual matur-

ity, at which time some sexually-mature adults return to the river system where they become residents.

Two spawning areas in the Little Wind and Popo Agie rivers may be important for the reproductive success of saugers in the drainage. It is important for saugers and other fishes to be able to travel among different areas needed at different times during their lives. As a result, it is important that future water development in the drain-

age does not limit sauger movements. Also, there are currently no large upstream reservoirs changing the natural character of the Little Wind and Popo Agie rivers, but future construction of reservoirs could reduce the amount of warm, deep pools. Given the likelihood of increased coalbed methane development in the Wind River drainage, alternate methods of produced water disposal from wells that do not affect flow, water temperatures, or water quality in Beaver Creek and other tributaries to the Little Wind or Wind rivers must be considered.



Using raft-mounted electrofishing equipment to collect sauger from the Wind River.

Evidence from this investigation suggests that saugers spawned in the rivers upstream from Boysen Reservoir spend about 4 years of their early lives in the reservoir, and then move to the rivers when they reach 13-14 inches or more and become sexually mature.

Free Fishing Day

The 2003 Wyoming Legislature approved the creation of an annual Wyoming Free Fishing Day, to be designated by the Wyoming Game and Fish Commission, as part of the National Fishing and Boating Week.

The Wyoming Game and Fish Commission has declared June 2, 2007 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, which are not regulated by the State of Wyoming) without a fishing license or conservation stamp.

Take advantage of this opportunity to introduce someone to the sport of fishing!



Free Fishing Day is a great opportunity to take a kid fishing.

Drought Conditions Continue to Affect Fisheries



Fishermen should be mindful of the added stress they may cause to fish during low water conditions and hot weather.



Low water levels at Silver Creek Reservoir have limited the quality of the fishery in recent years.

Drought conditions continue to grip the Lander Region. A significant snowstorm at the end of March provided a welcome boost to the water supply, but the total precipitation for the year is still below average. As of April 2, 2007 the total precipitation in the Wind River basin is 82 percent of average. Following is a summary of the outlook for some of the waters in the region.

Boysen Reservoir – The present forecast shows that the reservoir will rise from its current elevation of about 4709 feet to about 4715 feet. This is about 9 feet below full. This amount of water will keep water on most of the boat ramps but at these levels very little vegetation will be flooded thus habitat for young fish will be limited. Fishing for walleye and trout should be good throughout the year but recruitment of young fish into the population may be limited.

Streams throughout the region – Limited runoff will again impact streams throughout the Lander Region. Low flows limit the amount of habitat available to the fish and also usually lead to higher water temperature later in the summer. On a few streams, we have seen a decline in fish populations, which seem to be attributable to the drought.

A&M Reservoir – The reservoir is full at this time and should provide good fishing throughout the year.

Lost Soldier Reservoir – This reservoir is also full but earlier low water conditions may have negatively affected the fishery.

Antelope Springs Reservoir – This reservoir went into winter very low and we lost any fish that were in the reservoir. This reservoir will be stocked with catchable rainbow later in the spring. The number of fish stocked will depend on the amount of water available.

Silver Creek Reservoir – Winterkill situation probably knocked fish numbers down and this water will be stocked again this spring.

Carmody Lake – This continues to be just a little more than a mud puddle and will not be receiving any fish this year.

Western Nuclear Pond – Low water levels going into the fall may have jeopardized survival of the fishery. Stocking of this water is planned for later this spring.

Streams in the South Pass Area – Strawberry Creek dried up late last summer. Low flow conditions limited habitat on the Sweetwater River. Several of the other streams in the area were extremely low last fall. Although stream flows will increase this spring, fish populations will be limited because of decreased habitat the last few years. We expect several of the small streams to dry up again later this year.

Observations throughout the region indicate deterioration in riparian habitat due to the dry conditions.

Algae blooms in several of the high elevation lakes have been more pronounced probably because of low flow conditions and warmer temperatures.

Several of our small, low elevation waters have had some fish kill during the summer due to warmer and dryer climatic conditions. More summer fish kills are expected, if the warm, dry conditions persist.

Trout begin to become severely stressed when water temperatures begin to climb above about 70° F. Fishermen should be mindful of the added stress they may cause to fish during low water conditions and hot weather. Fish that are caught and released from waters with high temperatures may experience significantly higher mortality. Landing and releasing the fish as quickly as possible can increase the chance of survival.



Boysen Reservoir

Boysen Reservoir is the largest reservoir in the Lander Region and supports more angler days than any other water body. Consequently, we spend considerable time and effort managing the fishery and gathering data to follow trends in fish populations and angler catch. Boysen contains a very diverse fishery, with walleye, rainbow trout, yellow perch, crappie, channel catfish, sauger and ling all attracting the attention of anglers. With so many game fish species in the reservoir it is easy to understand that not all of them will be at peak population levels during any given year. There is only a finite amount of food and space to go around.

One of the biggest factors controlling fish population numbers is reservoir water levels—something that is largely controlled by mother nature. Yellow perch have been the major benefactor of water levels during the past several years. Sustained low water levels which promoted vegetation growth, followed by the flooding of that vegetation, created ideal perch spawning and rearing habitat. Subsequently, angler catch rates for perch have risen. But this resulted in drops in walleye catch rates (0.15/hour in 2006) to anglers, even though netting data show that walleye numbers have remained fairly constant over the past four years (Figure 1).

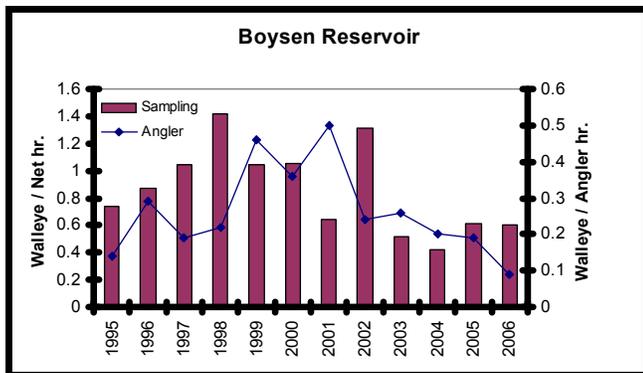


Figure 1. Comparison of walleye trend data for gill netting abundance to catch rates to anglers from 1995 through 2006.

Why does an abundant perch population result in decreased angler catch rates for walleye? Well, the main reason is related to the fact that perch is one of the major food items for walleye, especially for larger sized walleye. When walleye have plenty of perch to eat they are less likely to be attracted to the offerings of fishermen. One way we measure the health or condition of fish is by calculating Relative Weight (Wr) from the length and weight. The higher the Wr value, the fatter the fish is for its particular length. For Boysen, the data show that angler catch rates for walleye are more influenced by the Wr of walleye than by their abundance (Figure 2). When walleye are fat, catch rates go down.

So, if you are having trouble catching walleye it does not necessarily mean that it is the result of fewer walleyes in the reservoir.

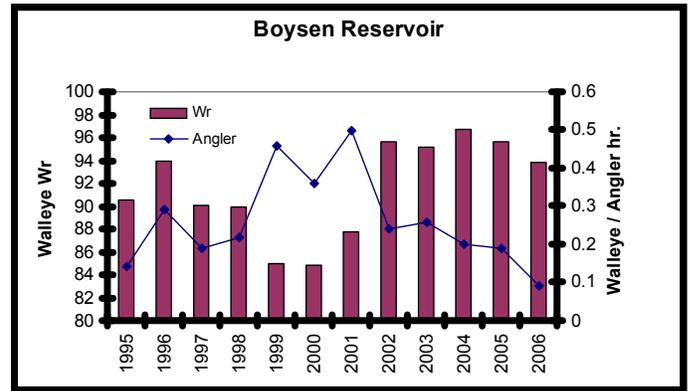


Figure 2. Comparison of walleye trend data for Relative Weight (Wr) of harvestable sized walleye (15-20 inch) and catch rates to anglers from 1995 through 2006.

In fact, Boysen boasts the second highest walleye abundance for all large reservoirs in Wyoming (Figure 3). The majority of walleye in Boysen Reservoir are 15 inches or larger. However, recruitment of 10 to 15 inch walleye has been increasing since 2003.

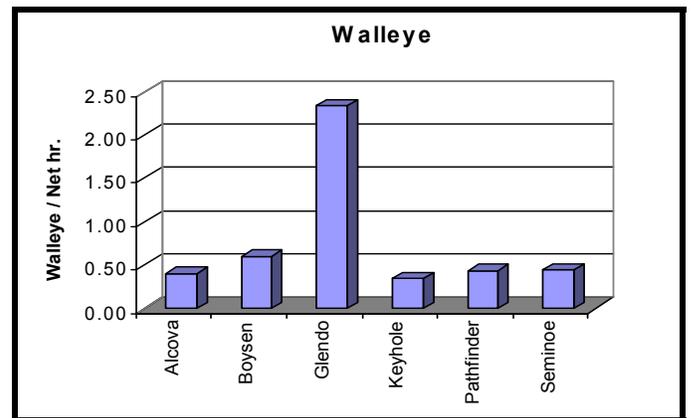


Figure 3. Comparison of walleye per net hour for premier walleye reservoirs in Wyoming in 2006.

Though current reservoir habitat and conditions favor recruitment of perch, when conditions are right we expect to see very strong year classes of walleye. Predation on young walleye by perch is likely high and limiting production. Several anglers reported catching yellow perch that were gorged with juvenile spiny fish. Walleye should limit perch recruitment when the reservoir water level is drawn down forcing juvenile perch into open water. This in turn should mean greater survival of young walleye in the future.

Torrey and Trail Lakes Stocking Evaluation



Torrey Lake

"The rapid loss of stocked rainbow trout from both lakes was alarming and explains why fishing has deteriorated in recent years."

Torrey and Trail lakes are located just south of Dubois in the Torrey Creek drainage. These lakes have traditionally provided good fishing for rainbow trout. However, anglers have experienced poor catch rates over the past few years. To better understand why fishing success has declined, we initiated a study in 2006 to examine survival of rainbow trout that are stocked annually. Hydroacoustic (sonar) surveys were conducted on each lake to estimate the number of rainbow trout at two different time periods. First, we conducted surveys during June to determine the number of rainbow trout that had survived since being stocked the previous summer. Estimates were low in both lakes, indicating that most stocked fish are surviving less than one year. Given the low annual survival rate, few rainbow trout live long enough to reach sizes that are desired by anglers. After learning that annual survival is problematic, we were interested in finding out how soon fish were disappearing from the lakes. We surveyed both lakes with hydroacoustics again in September, about one month after each lake was stocked with more rainbow trout. We compared our hydroacoustic estimates to the number of fish stocked the previous month to determine short-term survival rates. Torrey Lake was stocked with about 23,000 fish, but only 7% of these fish remained one month later. Similarly, Trail Lake was stocked with 14,500 fish, and only 9% were present during our survey the following month. The rapid loss of stocked rainbow trout from both lakes was alarming and explains why fishing has deteriorated in recent years. There are several possible explanations for why rainbow trout survival is poor. In 2004, we switched from stocking Torrey and Trail lakes with the

Eagle Lake strain of rainbow trout to the Firehole River strain of rainbow trout. These strains have different rearing constraints in our hatcheries, which resulted in having to stock the new strain later in the year and at a smaller size. These stocking changes, particularly the later timing and smaller size of fish, may contribute to poor survival. Another possibility is that stocked rainbow trout are being eaten by predatory fish soon after stocking. Both lakes support populations of lake trout, brown trout, and burbot. All of these species will eat rainbow trout, and if predator abundance has increased in recent years then there may not currently be a suitable balance between predators and prey. Yet another possibility is that stocked fish are leaving the lakes and moving into Torrey Creek. We are continuing the study in 2007 to identify which of these explanations is contributing to poor rainbow trout survival. We plan to return to stocking Eagle Lake rainbow trout in the spring, as we had done prior to 2004. Additionally, Firehole River rainbow trout will be stocked in late-summer. Hydroacoustic surveys will be conducted shortly after each stocking event to see which stocking strategy results in the best survival. We also plan to gill net to collect abundance and diet information from lake trout and brown trout. This work will allow us to assess whether predation is the cause of rainbow trout mortality. Finally, we will electrofish Torrey Creek to determine whether large numbers of rainbow trout are moving out of the lakes after stocking. This study will provide valuable information about the fisheries in Torrey and Trail lakes and should lead to improved angling opportunities.

Burbot Research with the University of Wyoming



Burbot, commonly called ling, are native to the Bighorn-Wind, Tongue and Powder river systems in Wyoming. In some areas across their native range in North America, burbot populations have declined and are threatened. Matt Abrahamse, a graduate student with the University of Wyoming is currently studying burbot communities in the upper Wind River system.

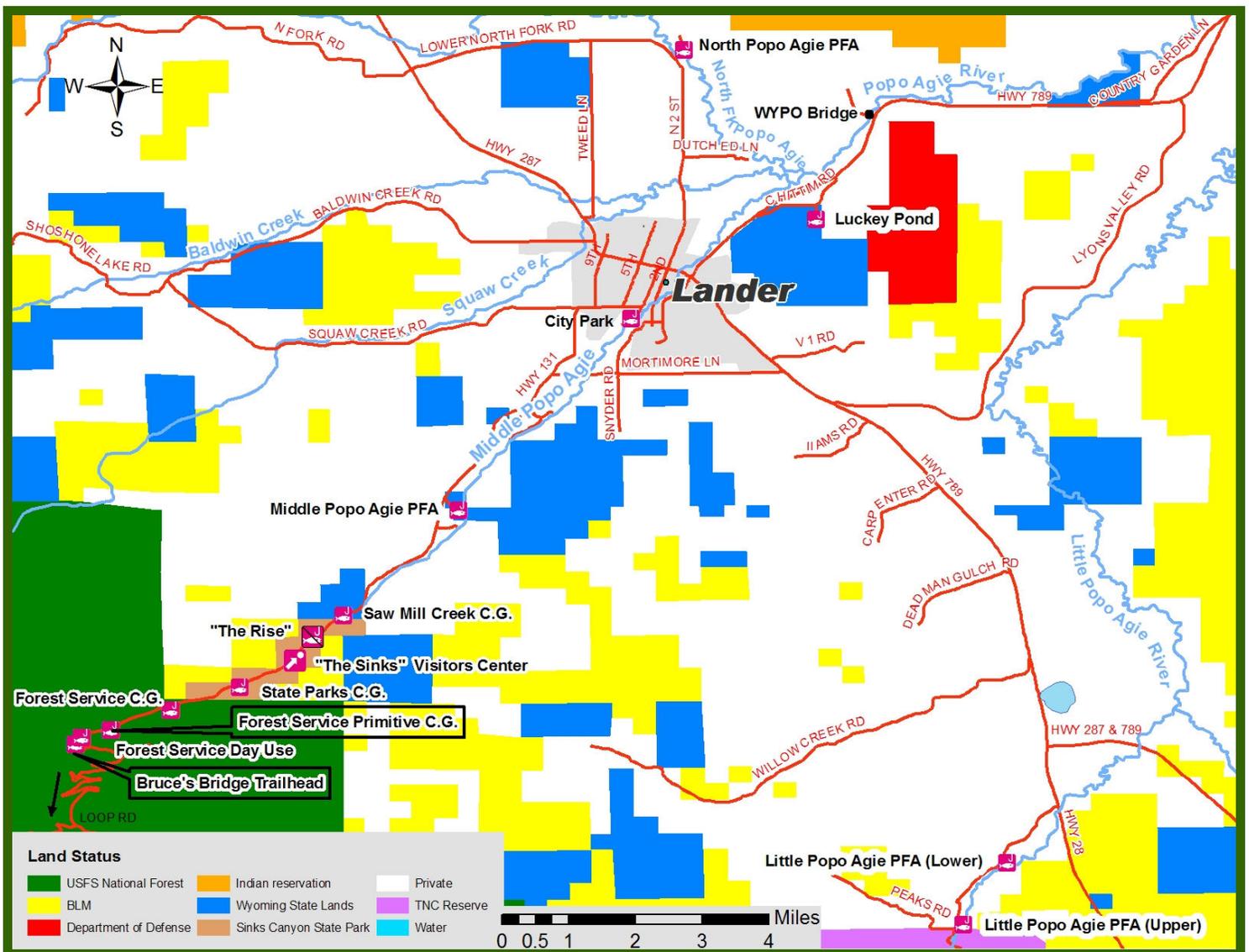
His research is designed to determine the status of burbot in the upper Wind River drainage and determine factors that may be influencing abundance and size structure. His research will be completed in 2008 and results will provide us with knowledge to better manage burbot populations into the future.

Lander Area Fishing Spots

There are many excellent fishing opportunities within a thirty minute drive of the town of Lander. The various forks of the Popo Agie River have fisheries dominated by wild brown and rainbow trout. There are several campgrounds along the Middle Popo Agie River in Sinks Canyon, while camping is not allowed at the Public Fishing Areas (PFAs) lower on the Middle Fork or at the Little Popo Agie or North Fork Popo Agie rivers. No fishing is allowed at "The Rise" of the Middle Fork, but it offers a rare and spectacular opportunity to observe large trout from an elevated observation platform. "The Sinks", where the entire river disappears into underground caverns, is another site well worth checking out. The Sinks Canyon State Park also has an impressive visitors center at this location. At Bruce's Bridge Trailhead you can take off on foot or horseback up the Middle Fork Trail. There are many good fishing spots along the way and you can enjoy the beauty of the Popo Agie Falls about 1.8 miles up the trail.

If you continue up the road from the Little Popo Agie Public Fishing Area you will pass through The Nature Conservancy's Red Canyon Ranch and the Red Canyon Wildlife Habitat Management Area. It is a pretty drive that is capped off by the spectacular scenic overlook along Highway 28 on top of Red Canyon. Luckey Pond is a short two miles from town and is an excellent kids fishery. It is stocked with rainbow trout and occasionally one or more subspecies of cutthroat trout.

Be safe, and enjoy the fishing!



Wyoming Game & Fish Department
Conserving Wildlife—Serving People

Lander Region Fish Division
260 Buena Vista Drive
Lander, WY 82520

Phone: 307-332-2688
Fax: 307-332-6669

Email: WGFLanderFish@wgf.state.wy.us



Pilot Butte Reservoir Trout Stocking Evaluation

Historically, Pilot Butte Reservoir has been managed through the stocking of 2,000 catchable (8- inch) rainbow trout every spring. In an effort to improve the fishery and take advantage of the reservoir's food supply, a change in the stocking program is being evaluated. The catchable rainbow trout are still being stocked in the spring, while an additional 25,000 smaller rainbow trout averaging about 5 inches are being stocked in the fall. Both stocks of fish will be marked by removing a different fin so that they can be identified later. Through netting to gather a sample of fish, the different stocks will be evaluated to determine survival and growth rates. At the same time we will monitor the plankton densities. Plankton is the main prey for the rainbow trout in the reservoir and we want to insure that we are not stocking too many fish for the available food supply.

Through this stocking evaluation we hope to provide the best possible trout fishing in the reservoir. So, stay tuned and if you happen to catch a rainbow trout in Pilot Butte Reservoir that is missing one of its fins, you'll know it is part of our efforts to improve your fishing.

WE'RE ON THE WEB
<http://gf.state.wy.us/>

News from the Dubois Fish Hatchery

The Dubois Fish Hatchery is starting its second year of fish stocking following recent renovations that were completed in the fall of 2005. Stocking started in mid-April, with fish stocking continuing into mid-October. Dubois is scheduled to raise about 400,000 fish totaling around 28,000 lbs. Dubois is also transferring over 200,000 fish to other facilities in the state to raise to a larger size. Many of the fish raised at the facility are stocked into waters located in the Lander and Dubois areas. However, the hatchery also stocks fish throughout other parts of the state. Fish are stocked for both restoration and for the enjoyment of the public.

Dubois is currently raising several different species of trout and also arctic grayling. This year's residents at the hatchery include

brown trout,
rainbow trout,
Snake River Cutthroat, Yellowstone Cutthroat, Bear River Cutthroat, Colorado River Cutthroat, and brook trout. Dubois typically raises all these species.



The Dubois Fish Hatchery is now a state of the art facility, with equipment to filter iron (which is toxic to fish) from the water, and enhance the water quality for the fish. Dubois has about 500 gallons of water a minute coming into the facility, from both a warm spring at a temperature of 67 degrees, and a cold spring that varies from a low of 42 degrees to a high of 52 degrees. These differing water temperatures allow the hatchery to grow fish slow or fast depending on what size fish is needed. This water is also pumped and recirculated after being used to increase the number of fish that can be raised at the facility. 500 gallons per minute is not very much water compared to the other large facilities in the state.

We would like to encourage anyone who is interested to stop by and visit the hatchery. Feel free to look around and personnel will answer any questions that may come up. An organized tour for groups and organizations can be scheduled by calling the hatchery ahead of time at 307-455-2431.



One of Dubois Fish Hatchery's satisfied customers!