

2009 Edition

Inside this issue:

<i>Yellowstone Cutthroat Trout Study</i>	2
<i>Middle Depression Reservoir</i>	3
<i>Didymo</i>	4
<i>Ocean Lake</i>	5
<i>Aquatic Invasive Species</i>	6
<i>Boysen Reservoir</i>	8
<i>A & M Reservoir</i>	8
<i>Wind River—Dubois Area</i>	9
<i>Shoshone Lake</i>	9
<i>Kids Fishing Days for 2009</i>	10



Lander Region Angler News

Welcome once again to our annual newsletter, designed to update you on fish related happenings within the Lander Region during 2008 and to inform you of our plans for 2009. There have been many personnel changes within the fisheries staff since our last newsletter. Dave Dufek, longtime Regional Fisheries Supervisor in Lander, retired after more than 40 years with the Game and Fish Department. He had a long and distinguished career and certainly many of you were fortunate enough to have had dealings with him over the years. He will be missed but we all hope to continue to see him along the waters of the region—only now, instead of a red shirt, he will be wearing a fly vest and gripping his favorite fly rod. Enjoy your retirement, Dave!

Other personnel changes include the promotion of Kevin Johnson into Dufek's former position, transfer of Paul Gerrity from Casper to join Joe Deromedi with the multitude of fisheries biologist duties, promotion of Dennis Oberlie as supervisor of the aquatic habitat program across the state, hire of Nick Scribner to replace Dennis as aquatic habitat biologist, promotion of Travis Trimble into the Assistant Superintendent position at the Dubois Hatchery, and the filling of the fish culturist position by Jared Smith. Jeff Stafford continues as Superintendent at the Dubois Hatchery. Refer to the contact information on the back of this newsletter if you wish to reach us with questions or information.

This year's newsletter highlights our findings during 2008 for some of the more popular fisheries in the region. It also contains information regarding the latest threats associated with aquatic invasive species. These non-native species have the potential to greatly impact our fisheries and other aquatic resources unless everyone in Wyoming remains diligent in preventing their introduction and spread. Please help us protect your fisheries—take the time to learn about the issues and threats, take the steps necessary to prevent the proliferation of invasive species, and help us spread the word to other anglers and water users so that we can maintain our fabulous resources for generations to come.

Lander Region Fisheries Staff:

Fisheries Management

Kevin Johnson *Regional Fisheries Supervisor*
Joe Deromedi *Fisheries Biologist*
Paul Gerrity *Fisheries Biologist*

Aquatic Habitat

Dennis Oberlie *Aquatic Habitat Supervisor*
Nick Scribner *Aquatic Habitat Biologist*

Dubois Hatchery

Jeff Stafford *Hatchery Superintendent*
Travis Trimble *Assistant Superintendent*
Jared Smith *Fish Culturist*

Erin Smith
Information and Education Specialist

Yellowstone Cutthroat Trout Study Focuses on Fish Migration Patterns and Getting Youth Outdoors

Last fall, the Wyoming Game and Fish Department, Trout Unlimited, and Gregory Aquatics initiated a research project to gather valuable information about Yellowstone cutthroat trout movements and habitat in the East Fork drainage near Dubois. The data will help us better manage this sensitive species that occupy one of the most intact stream systems for Yellowstone cutthroat trout in the state. This study also offers a unique opportunity for Dubois youth to experience the outdoors and learn about fisheries management as part of Trout Unlimited's "adopt-a-trout" program.

Some of the goals of this research are to identify where fish spend winter, determine spawning areas and when fish begin to migrate to them, and to assess the influence of turbid water on fish movement caused by summer storms. Additional information on fish entrainment associated with irrigation systems will also be collected. This information will allow us to protect and better manage habitat for Yellowstone cutthroat trout and to provide recommendations for irrigation regimes that will reduce the number of trout lost to irrigation canals. Lastly, we are curious if Yellowstone cutthroat trout are using the same spawning areas as rainbow trout, which could result in the chance of hybridization and the loss of genetic integrity. Yellowstone cutthroat trout are a species of special concern in Wyoming, so if we start to see a high occurrence of hybridization we run the risk of losing one of the most genetically pure populations of Yellowstone cutthroat trout in the entire country.

On September 30th and October 1st, 2008, radio transmitters were surgically implanted in 41 Yellowstone cutthroat trout while Dubois Elementary students (4-6th grade) observed and "adopted" a fish before releasing them. The implanted fish have been monitored for 6 months via radio telemetry to record their locations in the stream and quantify seasonal movements. Most of the fish have remained very close (within ½ mile) to the release site from last fall, while the largest recorded movements have been over 3 stream miles. Prior to this research, most Yellowstone cutthroat trout in these drainages were presumed to head downstream and spend their winter in the Wind River, but our findings are not supporting that theory. Another 20 Yellowstone cutthroat trout will be tagged in April to follow into the fall, since our first 41 radio transmitters are nearing their functioning limit of 200 days.



A Yellowstone cutthroat trout after implanting a radio transmitter.



Dubois Elementary students have thoroughly enjoyed this project as they anxiously wait for our telemetry data each month in order to track the progress of their adopted fish. The students also learned about topics such as electroshocking, fish identification and aging, radio telemetry, GPS, stream habitat, and fly-casting. They plan to make another trip to the East Fork this spring to complete a project they develop in class to help out our native trout!

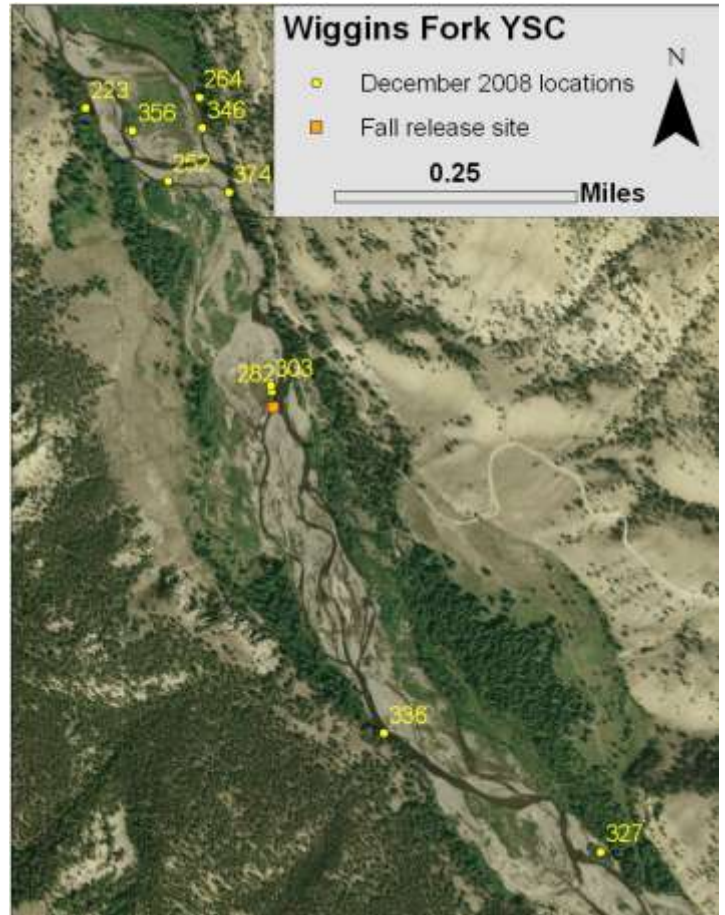
(Continued on page 3)

(Continued from page 2)

Some anglers in the East Fork drainage will likely catch an implanted fish this year. The Game and Fish Department and Trout Unlimited ask that implanted fish be immediately released at the location they were caught. In the case that an implanted fish is kept or the fish dies, contact the Game and Fish or Trout Unlimited for instructions on returning the radio transmitter. Most fish implanted were 11"-14" in length, though fish up to 18" in length were implanted. An implanted fish can be identified by a 3-4 inch silver wire protruding from the bottom left side of the fish and may have 3-4 staples on its underside.



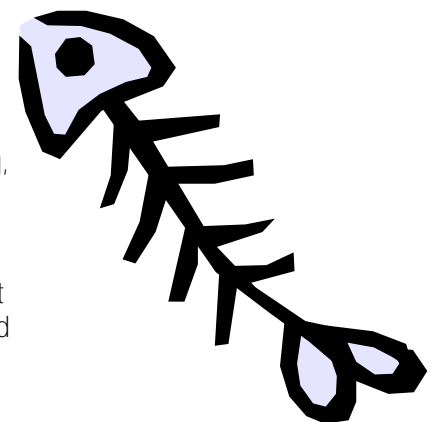
Corey Toye, of Trout Unlimited, locating radio-tagged Yellowstone cutthroat trout in the East Fork drainage.



Fish locations and their tag numbers from December 2008 in the Wiggins Fork. All fish have remained within ½ mile of the release site.

Middle Depression Reservoir

This reservoir, which has provided some fabulous rainbow trout fishing in the past, has experienced some major problems over the past couple of years. Generally the critical time of year for trout survival in this water has been the winter. The reservoir is shallow and in the past, during the ice covered period of the winter, oxygen levels would drop to the point that trout losses would occur. The Game and Fish overcame this problem many years ago by installing an aeration system that prevents total ice formation and allows for oxygen exchange. However, conditions in the reservoir have changed over the past few years. There is less water in the system due to drought and more efficient irrigation practices. Also, the amount of vegetation has been steadily increasing in the reservoir. As a result it appears that we have experienced summer-kill conditions the past two years. This results during warm, calm summer evenings when the plants are not photosynthesizing, but rather consuming oxygen. This can cause a dip in dissolved oxygen levels low enough to be lethal to trout. We believe we may have lost most of our trout population during each of the past two summers. We have plans during 2009 to monitor the water quality conditions and see if we can confirm if this is indeed the situation at Middle Depression Reservoir. We hope to be able to provide you with an update and solutions in the 2010 angler newsletter.



Didymo—Another Threat to our Fisheries

Didymo (*Didymosphenia geminata*) is a freshwater diatom which has historically been found in the cool, clean waters of northern Europe and northern North America. Since the mid-1980s, it has begun to take on the characteristics of an invasive species in its original range, and is being found in new areas. It was confirmed in the Middle Popo Agie River in 2005, and occurs both above the “sinks” and below the “rise”. Didymo lives in moderate-flowing, clear, cool rivers, especially with stable flows. It is beige, brown, or white in color, but not green. Although it looks slimy it doesn’t feel slimy,



Didymo is a microscopic algae (diatom) whose single cells are not visible to the naked eye (top left), but it forms large colonies that can cover a stream bottom. (U.S. Geological Survey photos).

but rather spongy and scratchy like wet cotton or wool. It may exist as harmless colonies on submerged rocks, boulders and gravel, but may also “bloom,” forming extensive underwater carpets over river beds. In the advanced stage, didymo forms long streaming filamentous carpets several inches long. Streamers turn white at their ends and fragments float downstream similar to clumps of tissue paper.

Severe blooms have the potential to change the habitat for insects that fish eat by smothering the stream bottom, displacing the large desirable insects (mayflies, caddis and stoneflies) and encouraging proliferation of small, less nourishing species like midges and snails. This could lead to reduced fish growth, smaller average size and condition, and possibly fewer trout. Didymo will probably not wipe out trout populations, but may severely suppress them.

Intense blooms make fishing difficult, and some methods even impossible due to the anchored algae mats and drifting fragments in the water. Reduced water clarity means rivers are visually less attractive and fish are harder to spot.

We need your help to combat this latest threat to our native and sport fish. Please adhere to the following procedures every time you leave any body of water to slow the spread of this latest invasive organism:

- Remove all visible mud, plants, fish/animals from gear.
- Eliminate water from all equipment before transporting anywhere.
- Clean and dry anything that came in contact with the water.
- Do not release or put plants, fish or animals into a body of water unless they came out of that body of water.

If you think you see didymo in any stream in Wyoming, the Game and Fish Department would be interested in hearing from you. Please use any of the contact methods listed on the back page of this newsletter to report your sightings.



Ocean Lake

The Department's every third-year standard netting program for Ocean Lake was accomplished during August 2008. This monitoring program has been in place for nearly 40 years and consists of experimental gill nets, trap nets, and shore seining. The results from this sampling allows us to monitor trends in species relative abundance and size over time. This year, both walleye and yellow perch catch from experimental gill nets increased when compared to the last sampling information from 2005. Trap nets captured large numbers of black crappies, yellow perch, and bluegills, the majority of which were sub-adults. The vast majority of the 698 bluegill were 2-4 inches in length and believed to be yearling fish. The same effort in 2005 captured only 20 bluegill. Previous to that, the last time any bluegill were captured was 1993, when the catch consisted of four individuals. Bluegill were an important component of the Ocean Lake fishery in the 1940s and 1950s, and it appears that they may be experiencing a resurgence. Hopefully, we will continue to see an increase in the bluegill numbers to a point that they can once again provide a great family opportunity at the lake.

Walleye in Ocean Lake have little or no success in reproducing naturally due to substrates dominated by fine silt. Therefore, the walleye fishery is maintained by annual stocking. Annual requests are for 320,000 fingerling. To better evaluate this stocking program a walleye specific sampling scheme is carried out each October. Results from netting this year show that the walleye population in Ocean lake consists of multiple age classes from 3-25 inches in length. The majority of the catch ranged from 14-20 inches. The presence of these multiple size/age classes indicates that survival of stocked walleye fingerlings has been good over the past several years.

Since 1990, a group of sportsmen from Riverton have placed approximately 500 discarded Christmas trees on the ice at Ocean Lake each year. The trees are placed in groups on the ice and wired to 6-inch diameter by 12-inch long concrete cylinders provide by Inberg-Miller Engineering. At ice-off, the trees sink to the bottom where they will hopefully enhance fish habitat and encourage stabilization of lake sediments. During early 2009, the group of sportsmen once again gathered for their annual event to volunteer their time and efforts for the betterment of the Ocean Lake fishery. This year, not only did we get the continued assistance from the Fremont county Solid Waste District, but Wyoming Waste Systems donated equipment and personnel to haul several loads of trees to the lake. Hot Springs State Park also participated and hauled a trailer full of over 200 trees from Hot Springs County. In total, about 700 trees were placed on the ice this winter. The trees were placed due north of the Long Point boat ramp, approximately 1/4 mile from shore.



Aquatic Invasive Species Threaten Wyoming's Waters

Zebra and Quagga Mussels

All anglers enjoy catching quality fish and a day spent outdoors. Likewise, boaters want quality time on the water. But most importantly, we all care about the health of our ecosystems and the safety and stability of water supplies in Wyoming.

In the coming months, you'll be hearing a lot more about new threats to Wyoming's aquatic ecosystems. These threats come from the potential spread of aquatic invasive species to Wyoming's waters. These organisms represent a very real threat to our state because of the ecological, recreational and economic impacts they can have on water, fish, equipment and water transport systems. It will be important for all of us--anglers, boaters and water users alike--to work together to prevent the spread of these organisms.

What are aquatic invasive species?

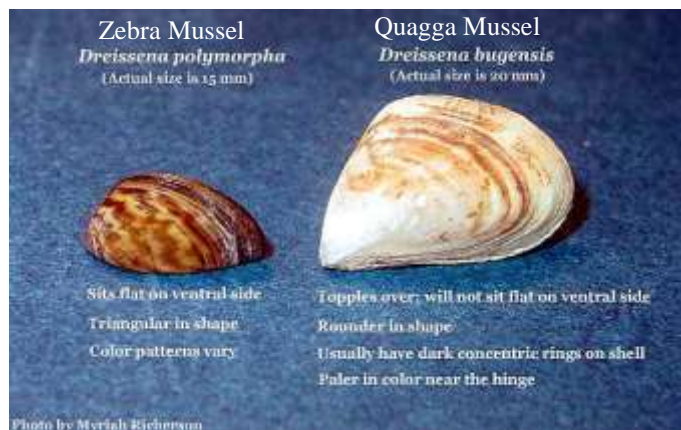
Aquatic invasive species are organisms that are introduced into new ecosystems. Many of these species are harmful to the natural resources in the ecosystem and threaten human uses of these resources. Often called "nuisance" species or "exotic" species, they can attach to equipment, boats and clothing used in the water, and can be transferred on these items from one body of water to another. Once established, these species can cause drastic problems for aquatic ecosystems and the people who use them.

Any plant and animal can be considered an invasive species if it's moved to an ecosystem where it doesn't belong. But the Wyoming Game and Fish Department is focusing its attention on two particular aquatic invasive species that are posing an immediate threat to Wyoming --zebra mussels and the quagga mussels.

Zebra and quagga mussels are freshwater, bivalve mollusks that typically have a dark and white pattern on their shells (hence the name Zebra). They are non-native species, invading North American from the Black, Aral and Caspian Seas sometime in the mid 1980s. They were most likely transported to Europe and then North American in the ballast water of ocean-going ships. Though separate species, they are very similar in appearance and impact. In general, these mussels are about an inch long, and attach to hard surfaces like boats, piers, pipes and other equipment. They are often found in clusters. These mussels reproduce quickly -- a single female is capable of producing more than 1 million eggs a year. There are no known populations of these mussels in Wyoming to date, but they have invaded waters across the country and are now present in three of our neighboring states -- Colorado, Nebraska and Utah. Current information for the entire U.S. can be found at: <http://nas.er.usgs.gov/taxgroup/mollusks/zebramussel/>

Why is WGFD concerned?

Collectively, aquatic invasive species can have tremendous detrimental impacts to things we value-- healthy ecosystems, recreational equipment, secure drinking water supplies. Dealing with invasive species in the United States costs more than \$100 billion each year.



Heavy infestations of these species can alter aquatic environments by reducing food sources for game fish. Mussels remove significant amounts of phytoplankton from the water, which in turn are food

(Continued on page 7)

(Continued from page 6)

for larval and juvenile fish, which are in turn food for sport and commercial fisheries. These species can also reduce oxygen levels in the water, stressing or killing fish.

Another significant impact of zebra and quagga mussels is the effect on recreational opportunity and equipment. They can clog water intakes on motors, overheating and ruining boat engines. They can also attach themselves to the prop and other areas of the motor, either affecting the performance of the engine or actually jamming steering equipment.

In addition to impacts on anglers and boaters, aquatic invasive species can increase the operating costs of drinking water plants, power plants, dam maintenance and industrial processes. For example, zebra mussels attach to hard surfaces and colonize on structures like those used for power and municipal water treatment plants, reducing pumping capacities and causing occasional shutdowns. Affected municipalities and industries in the Great Lakes area, where zebra mussels are established, spend hundreds of thousands of dollars every year on mussel control. Those costs are eventually passed on to consumers.

What is being done?

Wyoming needs a comprehensive and cohesive approach to effectively deal with the increasing risks from aquatic invasive species. The Game and Fish has been working with other agencies and is in the process of creating a course of action. We are educating water users about the threats posed by these species, completing surveillance and monitoring of at-risk waters and working with other affected entities to develop a comprehensive strategy and rapid response program. The scope and effect of this issue in Wyoming extends beyond Game and Fish and will require cooperation from all citizens of our state.

How can you help?

The best way you can help with this effort is to make sure you aren't spreading invasive species from one body of water to another. Overland transport on boats, motors, trailers and other watercraft poses the greatest risk for spreading aquatic invasive species, so it's important to properly care for your equipment.

Before leaving a body of water, but while on dry land, do the following: Drain every conceivable space that can hold water, including engines, live wells or ballast tanks or even just the inside of your canoe, kayak or raft. Clean any and all equipment by removing plants, mud and other debris. Use a potassium chloride solution (mix 1 teaspoon potassium chloride crystals with 2 gallons of water) to wash equipment. Potassium chloride is deadly to many aquatic invasive species but harmless to other aquatic organisms and humans. Allow all equipment to thoroughly dry before launching in another body of water.

Overall, these aquatic invasive species are small, but when introduced to a water body, they can have giant consequences. It's difficult to overstate the impacts an invasion of the zebra or quagga mussel would have on the ecology, economy and culture of Wyoming. If you are a fisherman, if you enjoy recreational boating or even if you just use water for drinking or irrigation, it's important to understand how dangerous these species are. Do everything you can to keep them from spreading. Let's keep Wyoming's waters secure.



Boysen Reservoir

It is no surprise to most anglers fishing Boysen Reservoir that walleye fishing has been good in recent years. Two factors that have contributed to better fishing are high walleye abundance and poor forage conditions for larger sized walleye that lead to higher catch rates. Walleye abundance has been increasing since 2003 and the population has maintained a relatively high average length (greater than 16 inches) during this time (See Figure 1). The high abundance of large walleye has taken a toll on the yellow perch population. Trend sampling data shows that adult perch abundance has decreased from 83 to only 7 fish per net from 2006 to 2008, respectively (See Figure 2). Studies have shown that a 20-inch walleye will eat fish up to 7-inches in length or slightly larger when smaller sized forage is not available. Nearly 21% of the walleye sampled in 2007 were greater than 20-inches.

With the decreasing perch abundance, it is likely that walleye abundance may decline in the near future. This was evident in the early 2000s when the dip in yellow perch abundance was followed by a dip in walleye abundance (See Figures 1 and 2). However, reservoir storage is currently much better than during the early 2000s and high reservoir storage typically boosts forage production. This should help sustain the walleye fishery in 2009.

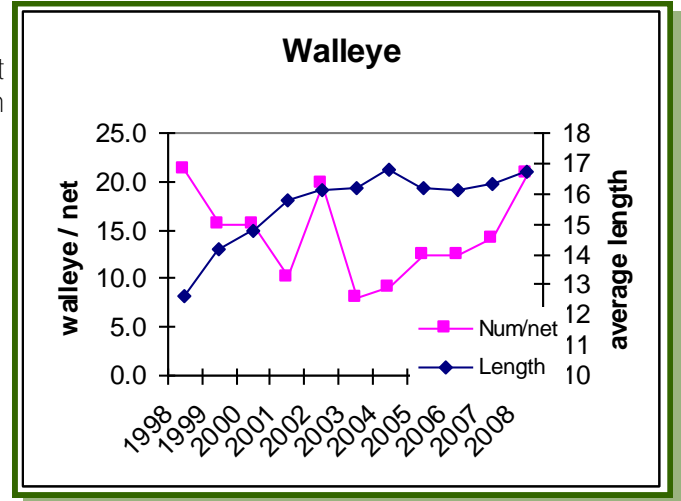


Figure 1. Number of walleye caught per net and average length of walleye caught with the standardized sampling program 1998-2008.

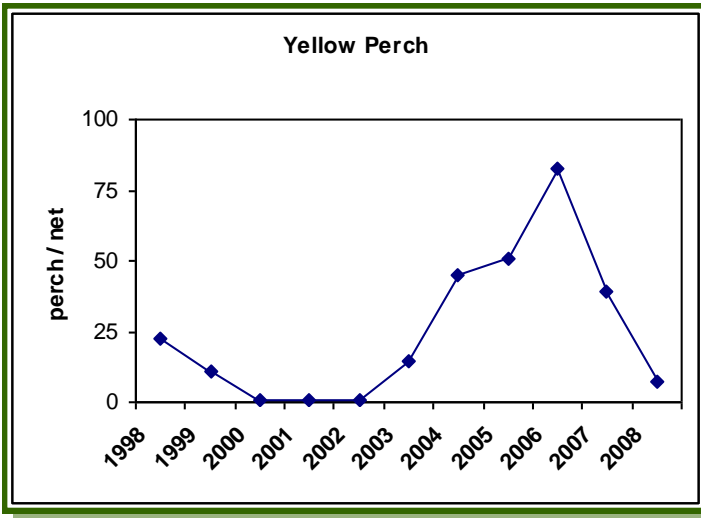


Figure 2. Number of yellow perch caught per net with the standardized sampling program at Boysen Reservoir 1998-2008.

Boysen Reservoir supports a diverse fishery providing anglers the opportunity to catch many other game fish species. Rainbow trout, black crappie, channel catfish and burbot are among the list of fish generally targeted by anglers. Occasionally largemouth bass and brown trout are caught. There are good opportunities for anglers to catch trout, black crappie and channel catfish from shore, especially during spring when these species become shoreline oriented. Rainbow trout in Boysen Reservoir averaged 19.0-inches in length during our sampling in 2008. Anglers have caught rainbow trout reaching 6 to 8 pounds. Channel catfish also provide the opportunity to catch trophy-sized fish. Recent sampling has produced channel catfish up to 17 pounds and anglers have reported catching channel catfish exceeding 20 pounds. Upper reservoir regions provide warm turbid water that attract channel and black bullhead catfish.

A & M Reservoir

This reservoir is located south of Green Mountain and about 7 miles due west of Bairoil. The water supply was reestablished in 2004 after being completely dry for six years. Merit Energy Company supplies pumped well-water to keep the reservoir near full and the Bureau of Land Management has a smaller water well that adds supplemental water. Beginning in 2005, stocking has consisted of approximately 1,000 rainbow trout and 500 brook trout each spring. Angler interviews this past year indicated that several size classes of both rainbow and brook trout inhabit the reservoir. Growth of trout in this water body has always been good and we expect that there should be fish up to 16-20 inches in the reservoir in 2009. Internal combustion motors are prohibited at A & M Reservoir, making it an excellent location for float tube anglers.

Wind River - Dubois Area

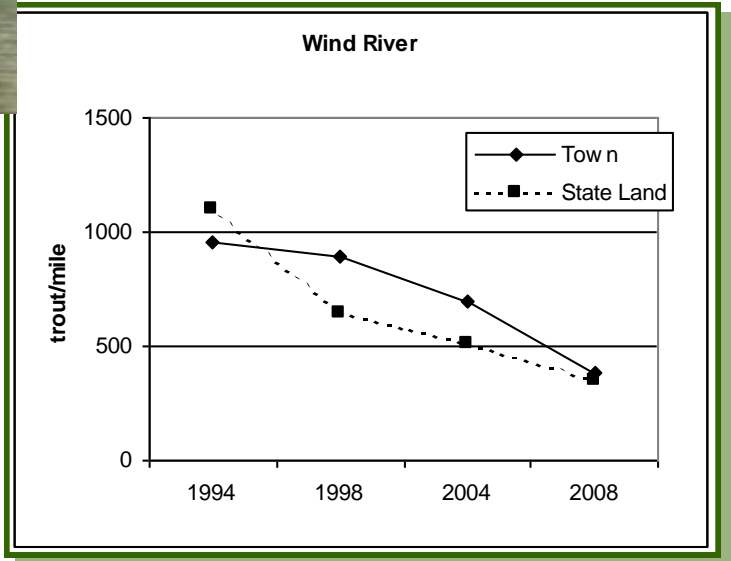
Trout abundance in the Wind River downstream of Dubois has decreased over the past 14 years (See Figure). Two sampling stations, one through the town of Dubois and the other beginning at the Longhorn Motel, were electrofished to collect data needed to estimate trout populations.



It was obvious that brown trout continue to dominate the trout fishery near Dubois. The population estimate was 322 brown trout and 48 rainbow trout per mile at Dubois and 221 brown trout and 128 rainbow trout per mile downstream of Dubois at the State Land station. Since 2004, brown trout have decreased 29% in the State Land Stations and 40% in the Town Station. Likewise, rainbow trout have decreased 34% in the State Land Station and 69% in the Town Station. Factors influencing the fishery are sediment accumulation from several years of drought and possibly higher harvest in the Town Station.

Since the early 2000s, river flows have averaged below normal. There have been storm events that carried large sediment loads to the Wind River and deposited them throughout much of the channel. Due to lower flows, sediment has not been flushed away. The sediment can adversely influence egg hatching, larval and juvenile fish survival, and reduce production of aquatic insects.

Despite the decreasing trend in total numbers, the trout population in the Wind River is still very respectable and represents a quality fishing opportunity. There are many public access areas along the river that offer ample opportunity for anglers to fish in relative solitude.



Number of trout (brown and rainbow) per mile estimated in the Wind River at the Town and State Land sampling station near Dubois in 1994, 1998, 2004 and 2008.

Shoshone Lake

Shoshone Lake, located in the North Fork Popo Agie drainage, supports a premier brook trout fishery. It is open to fishing from June 1 through August 31 and has a creel limit of 4 brook trout. Access to the lake can be a challenge over the 12-mile trail to the lake. Most choose to travel using an ATV, but a few also make the journey with modified 4x4 vehicles. Stock vehicles are not recommended. During 2008 the average catch rate for the 56 anglers interviewed was 3.15 brook trout/hour, with an average length of 14.3 inches. Fish over 17 inches are not uncommon from this lake.



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



During 2007, the Game and Fish Department implemented a new Stop Poaching tip line designed to help crack down on illegal hunting and fishing activities in the state. The new number, (877) WGFD-TIP will handle wildlife violation tips in a more efficient manner. We wanted a new number that was easy to remember so hunters and anglers out in the field could report violations immediately.



Illegal transplanting or stocking of fish has been particularly devastating to important fisheries in recent years. We need your help watching for these violations and reporting them as soon as possible.

Citizens should be alert and gather as much specific information about the violation as possible. Try to document the date, time, location and specific nature of the violation. Include a physical description of the suspected violator or include contact information if possible, as well as a license plate number and description of any vehicles involved in the incident.

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

Kids' Fishing Days for 2009

Lucky Pond Kids' Fishing Day: May 30, 2009

Just outside Lander, this event is sponsored by Popo Agie Anglers, Wyoming State Training School, U.S. Fish and Wildlife Service, and the Wyoming Game and Fish Department. Kids who are age 14 or older must have a valid fishing license. Fly-casting and fly tying clinics, free lunch, and prizes.

Big Bend Ponds Kids' Fishing Day: June 6, 2009

Located on the outskirts of Riverton, this event is sponsored by the Riverton Kiwanis. This event is on the "Free Fishing Day", so no licenses required regardless of age. Free lunch and lots of prizes. This event has been held for many, many years and is always a great time for the kids.

Scout Pond Kids' Fishing Day: June 13, 2009

Located along Horse Creek north of Dubois, the main sponsors for the 10th Anniversary of this event are Shoshone National Forest, Crowheart Conservation District, Wyoming Game and Fish Department, Dubois Anglers and Wildlife Group, Dubois Kiwanis, Dubois Lions Club, Never Sweat Recreation Board, Dubois Branch of the Bank of Jackson Hole, Wells Fargo Bank, and Riverton Wal-Mart. Kids who are age 14 or older must have a valid fishing license. Lots of educational activities, prizes, and free lunch.

