

From Good



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IN 2005, JASON ARCHIE LANDED A LEVIATHAN FROM THE LOWER MOUNTAIN FORK RIVER. The state-record brown trout weighed a whopping 17 pounds and was nearly 33-inches long. In all likelihood, the fish came from one of the earliest stockings of brown trout in the early 1990's. Probably only six to nine inches long when first released, the fish had grown three to four times its original length and more than 30 times its weight.

When the Lower Mountain Fork River Trout Area was established in 1989, it was the ambitious hope of the Oklahoma Depart-



to Great:

The Story of One of the Region's Premier Trout Fisheries.

ment of Wildlife Conservation's fisheries biologists that the stream would be more than just a put-and-take trout fishery like the seasonal trout areas. Biologists hoped the Lower Mountain Fork River might evolve into a put, grow and take fishery.

Certainly Archie's record-shattering brown trout demonstrated that the habitat and water quality of the Lower Mountain Fork was conducive to trout growth, but in 2006 biologists discovered something that was totally unexpected. After receiving several reports

Success stories such as the Evening Hole project (page 28) indicate a bright future for Oklahoma streams and fish as well as the anglers who enjoy them.

**ODWC streams programs are making
the state's great trout areas even better.**

from anglers, biologist confirmed in the spring of 2006 that rainbow trout had actually reproduced naturally in the river.

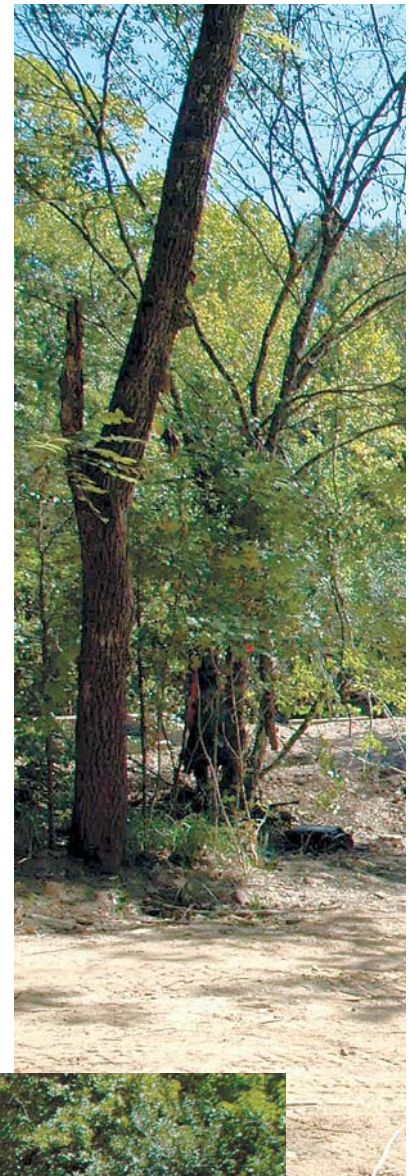
The documentation of newly spawned rainbow trout marked a milestone in terms of the Wildlife Department's Trout Program. The fact that stocked rainbows actually reproduced

With a big imagination and heavy equipment, biologists created a ¼ mile of new trout stream dubbed "Lost Creek."

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on their own is a remarkable biological barometer. Not only is the Lower Mountain Fork's water temperature staying trout-friendly, but all of the other habitat-related ingredients are present as well. The stream has an excellent variety of insects and other

A large structure was put in the streambed to divert some of the water flow into the new stream.





invertebrate life forms that supply food for trout. Plus, the water flow and rocky stream beds are obviously very similar to the rainbow's native habitats.

From an angling standpoint, the Lower Mountain Fork has gained a loyal following, particularly among fly fishermen. Its reputation as a fly fishing hot spot has gone far beyond the borders of Oklahoma. According to more than one website devoted to fly fishing, the Lower Mountain Fork River has been called "the best trout stream in the South." That's a lofty accolade for a trout stream that is relatively young compared to several tailwater and spring-fed trout streams established decades earlier in Missouri and Arkansas.

Not only is the trout fishing success high for anglers, but the area's picturesque setting of tall pines and mountains is also a major drawing card as well. Certainly one of the most scenic and most visited portions of the 12-mile stream is the section

So Why are Some of Oklahoma's Trout Areas Seasonal and Some Year-round?

IMAGINE FOR A MOMENT THAT YOU ARE A TROUT. If you were a member of the *Oncorhynchus mykiss* tribe, otherwise known as the rainbows, then your living conditions are pretty important to your comfort and survival, right? Because you're a *Poikilotherm* (a cold-blooded animal such as a fish or reptile), you don't have the ability to regulate your own body temperature; therefore, you must have just the right water temperature range
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that isn't too warm or too cold. But physical comfort is not the only reason you'd want cool water in which to swim. To trout, cool water equals breathable water. Here's a further explanation.

We humans absorb free oxygen molecules (O_2) from the air into our blood hemoglobin through the capillaries in our lungs. Fish do essentially the same thing, except the hemoglobin absorbs O_2 directly from the water flowing over the capillaries of the gills.

If you were a rainbow trout, you would need to have a minimum of about six molecules of free oxygen for every one million molecules of water. If your water starts losing O_2 below six parts per million (PPM), then you're going to start feeling the stress of hypoxia (oxygen deprivation). If the dissolved oxygen dips below five PPM, then your distant cousins like the flathead catfish might be just fine, but you and your trout brethren are going to go "belly-up." Unlike the flatheads, which can tolerate oxygen levels as low as two or three PPM, trout need more oxygen-rich water to survive.

In terms of compounds, water is some strange stuff. It is most dense at 39.2 degrees Fahrenheit. Starting from 39.2 degrees, water gets less dense as it gets colder or warmer (by the way, this is the reason that ice cubes float in a glass of water). As water warms, it becomes less and less dense and loses its ability to trap the molecules of free oxygen that are so important for fish and other aquatic organisms.

For a trout, water that is warmer than around 68 degrees is a problem. Even in a white-water-rapids situation, with water being aerated through splashing and spraying as it tumbles over rocks and boulders, water with temperatures of 68 degrees or higher has a hard time holding enough free oxygen molecules to sustain trout.

In short, trout need oxygen-rich water, which essentially means cool water. For this reason, most of Oklahoma's designated trout areas are "seasonal," and trout are only stocked during the cooler months
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Heavy equipment was used to create ideal fish habitat and angling conditions.

known as Spillway Creek. To first-time visitors, particularly fly fishermen who've learned the ropes of fly casting on visits to the Rockies or New England, Spillway Creek is a hot spot destination. Unlike most of the stream that receives Broken Bow Lake water through a huge pipe that runs through the mountain adjacent to the main Broken Bow dam, Spillway Creek actually gets its water through the sluice gates of Broken Bow's smaller spillway dam. As the water is released, it spills through boulder gardens for nearly a mile and a half.

Once Spillway Creek reaches the original Mountain Fork River streambed, the stream once widened out and slows down. Further downstream, it became very wide, shallow and slow-moving in a section known by local anglers as the Evening Hole. While this area still supported trout prior to its recent transformation, it didn't have nearly the amount of fish habitat compared to Spillway Creek upstream. Because the Evening Hole was extremely wide and shallow, it was susceptible to summer heat, which caused the cool water from Broken Bow dam to warm up too quickly. Additionally, the Evening Hole was not a particularly popular area among anglers.

Typically, trout anglers have their best success fishing in areas near, behind and between natural obstructions in the streambed, such as boulders. Trout can use these obstructions to rest just



out of the main current, but stay close enough to dart out and snag any sort of insect flowing by in the main channel. In the 2,700-foot long, relatively featureless pool known as the Evening Hole, there were few obstructions to concentrate trout

or trout anglers. But thanks to a recently completed project by the Wildlife Department, the Evening Hole has been enhanced to rival the best trout streams anywhere.

After several years of design and construction, the Evening Hole Restoration Project reached completion in the summer of 2006. Through the efforts of the Department and several partnering agencies and anglers' groups, the project is being called the most ambitious stream restoration project ever in the state.

Before its recent transformation, the portion of Spillway Creek known as the Evening Hole was very wide, shallow and slow, making it susceptible to summer heat and therefore less than ideal trout habitat.

After years of careful design and construction, the Evening Hole Restoration Project was completed in the summer of 2006, resulting in faster, cooler water for trout and better fishing for anglers.





of the year (November through March at Lake Watonga, Robbers Cave, Quartz Mountain, Lake Pawhuska, Lake Carl Etling and Blue River). The cooler and thus denser water simply holds more O₂.

Oklahoma's other two trout areas, the Lower Illinois River and Lower Mountain Fork River, are year-round trout areas that rely on deep, cool water releases from Lakes Tenkiller and Broken Bow, respectively. These unique "tailwater" fisheries can sustain trout even in the hot summertime. During August, when the surface lake temperature might reach more than 90 degrees, the water deep within Lake Tenkiller and Broken Bow stays cool. By releasing this deep water through the dam that generate hydroelectric power, the cool water can keep trout alive year-round in the tailwater below.

With the Oklahoma Department of Wildlife Conservation's ongoing efforts to improve and maintain the state's trout habitat through projects such as those at the Evening Hole and Lost Creek, the trout will surely benefit, but those who enjoy fishing for them will as well. It's a win-win situation for trout and Oklahoma anglers. 🍃

Careful placement of obstructions in the stream resulted in better places for trout to wait for food flowing by in the main channel, leading to better fishing spots for anglers.

So how do you turn the Evening Hole into something more like the majestic Spillway Creek? Five years ago, that was the challenge facing Wildlife Department fisheries biologists as they looked for ways to capitalize on an already successful trout fishery. In recent years, the science of streams and their rehabilitation has been dramatically improved. Although we won't get into terms such as Applied Fluvial Geomorphology, suffice to say that fisheries personnel are learning more and more about the dynamics of healthy natural streams. With this greater knowledge, our Oklahoma streams are now better than ever.

Throughout the summer of 2006, heavy equipment (such as tractors, bulldozers, cranes and track hoes) was brought to the Evening Hole in order to move tons of rock material into the

streambed. It was sculpted in such a manner as to create a swifter, narrower stream channel. Additionally, root wads from enormous trees were placed in the streambed with rock material packed next to them. These features not only create faster, cooler water, but also provide excellent spots to cast your favorite trout fly.

While looking at the Evening Hole project, biologists discovered an additional opportunity to enhance stream habitat below the popular Spillway Creek. A water diversion structure was placed in the stream that diverts some of the flow into an entirely new stream. The new reach, called Lost Creek, meanders through the pristine woodlands adjacent to the Evening Hole and will provide an additional 1,200 feet of great trout habitat. The new reach has the same feel as Spillway Creek and will certainly hold plenty of frisky rainbows in the countless eddies and riffles along the way.

The early stages of Lost Creek's development involved careful prep work to prepare for the new 1,200-foot reach of great trout habitat.



The Bottom Line

MANY FISHERIES HABITAT PROJECTS, such as those at the LMFR, are funded through the Sport Fish and Wildlife Restoration program. Fishing tackle, as well as boat trolling motors, firearms, bows and arrows and other outdoor related equipment, are subject to special federal excise taxes that help fund conservation efforts around the country. Additionally, federal fuel taxes attributed to motorboats are directed towards conservation.

The Sport Fish and Wildlife Restoration programs are tremendous examples of true a partnership between private industries, state governments, the federal government and hunters, anglers and boaters. The federal government collects these taxes from manufacturers and the U.S. Fish and Wildlife Service administers and disburses the funds to the state fish and wildlife agencies like the Oklahoma Department of Wildlife Conservation.

Hunters, anglers, shooters and boaters ultimately pay these taxes through the purchase of products. These same groups benefit from the funds, as states must spend the money on sport fish and wildlife habitat restoration/development, populations management, user access and facilities and education.

The funds are used by the Oklahoma Department of Wildlife Conservation for a wide range of important activities, including the purchase and maintenance of wildlife management areas, construction of fish hatcheries, research laboratories and user facilities, surveying and managing fish and wildlife populations, training volunteer instructors and educating young hunters and anglers in safe firearms handling, water safety, fish and wildlife resources and ethics afield. 🌿

Through the Department's Stream Restoration Program, similar stream enhancements were made on the Lower Illinois River Trout area in recent years. Additionally, the Department hopes to evaluate other streams, not necessarily designated trout streams, for future habitat restoration projects. Because most of Oklahoma's rivers and streams flow through private lands, it is also the hope of Wildlife Department biologists to cooperatively work with private landowners to enhance and restore streams and stream side habitat on private lands.

With success stories such as the Evening Hole project, the future looks bright for Oklahoma's streams and the people who enjoy fishing them. 🌿

***Right:** An understanding of streams, careful management and hard work are key elements to projects like Lost Creek. Fortunately, the benefits that result are worth the effort.*

***Below:** Root wads from enormous trees were placed in the streambed with rock material packed next to them, creating faster, cooler water and better places to fish at the Evening Hole.*

