

# Instream Flow

## Clearing the Air on Water Part six

By Tom Annear, WGFD instream flow specialist

*And a river ran through it.*

*Or did it?*

*A history of waters and fisheries  
in Wyoming*

I hear it a lot: Before the advent of flood irrigation in the late 1800s, most of the streams you fish today didn't flow during late summer. There's also a fairly widespread belief that there weren't any fish in big parts of the state until irrigation "brought these streams to life" with water returning from lands that were irrigated in early summer. It's easy to see how these ideas gained credibility, since there weren't many official records kept for flows or fish in the early part of our state's history. Setting the record straight about how rivers historically flowed and what fish were found where still is possible, though, thanks to documented events and the journals of early explorers.

There's no arguing that the presence of man has changed flow patterns almost everywhere. When the early trappers eliminated most of the beavers in the early 1800s, their actions led to the loss of beaver dams that slowed the movement of snowpack water from the mountains to the plains. In many places this resulted in higher peak flows and lower low flows in the annual hydrograph before the first settlers ever arrived. Various land management practices on the forests and plains also changed the way water moved through our rivers. Of course, consumptive use of water for irrigation and municipal and domestic purposes also have affected flow.

In some streams like Bates Creek near Alcova and the lower Blacks Fork near Green River, to name just a few, irrigation water returning to the stream does provide a little more late summer water than may originally have been there. Other streams, like Crow Creek near Cheyenne, historically went completely dry in some sections only to reappear farther downstream. This pattern on Crow Creek always was a function of natural hydrology that hasn't changed much from irrigation returns.

The records of early explorers like John C. Fremont indicate that not all streams went totally dry in the summer, even in bad water years. Fremont made more than one trip across Wyoming and described the summer of 1847 as one of "unparalleled drought" in which both arms of the Platte River failed. However, even under this extreme drought, he observed on July 12 that Horse Creek near Torrington was 70 yards wide and flowed "pure and clear with mountain waters."



PHOTOS BY TOM ANNEAR, WGFD

Some streams, like Crow Creek near Cheyenne, had a permanent flow and a diverse fishery at the time of settlement. However, downstream near Carpenter (below), Crow Creek historically has gone dry much of the year, and still does.

The Laramie River near Fort Laramie also flowed, as did LaBonte Creek near Douglas, which he called a "handsome creek." On July 28 he described Deer Creek near Glenrock as some 20 feet wide and the largest stream between the Sweetwater and Laramie rivers. And even though the Platte "failed," it was still 200 to 300 feet wide within its more normal 800- to 1,500-foot-wide channel near Casper. On his return back downriver in September, Fremont thought there was enough flow to negotiate through the canyon between Pathfinder and Alcova reservoirs. Unfortunately, he discovered that though the river was far from dry, natural barriers made the canyon impassable at any flow and he suffered a catastrophic boat wreck. Though the rest of his journey was on foot, he did get a canyon named after him for his effort.

There's evidence of significant flow in other streams, too. The most notable account may be from General George Crook, who, in July 1876 while resting with his men after an encounter with Crazy Horse on Rosebud Creek, caught some 15,000 Yellowstone cutthroat in Big Goose Creek near Sheridan. He must have been either a great fisherman or a great yarn-spinner (or both), but regardless it's unmistakably clear that return flows from modern irrigation have not improved this fishery. There are similar records that describe the character of other Wyoming rivers before settlement, but most evidence indicates most flowed most of the time.

So what about the fish? It's true there weren't any trout in about 40 percent of the state. But this is mostly because the species had not colonized the North Platte and Powder river drainages. Trout did occur throughout the Colorado, Snake, Yellowstone and Bear river drainages, wherever water quality and temperature was to their liking. Trout are more widespread today than 150 years ago, but not so much because stream flows are better, rather because the state and federal governments aggressively stocked them anywhere they thought they had a chance to survive. Cool releases from some dams, like Fontenelle Reservoir in the Green River region, did create new habitats for trout in some stream segments, but these gains came at the expense of native warm-water fish species that were lost. In other places, like below Guernsey Reservoir north of Wheatland, releases were modified so much from natural conditions that

fewer fish and fewer species are found now than occurred naturally.

The historic lack of trout in some streams isn't valid evidence that they flowed less in the past than they do today because trout aren't the only fish that live in streams. Wyoming was home to 53 different species of fish prior to settlement. Each species was adapted to a specific habitat, some preferring warm, muddy streams with wide variation in flow in different seasons and different years, with others found only in cool, clear streams of more constant flow. Researchers like David Star Jordan, Barton Evermann, Ulysses Cox, Samuel Garman and Edward Cope scoured the state in the late 1800s and found fish of some manner or description almost everywhere they looked.

An 1896 report by Evermann and Cox, notes:

The point in all of this isn't that we should necessarily stop doing what we're doing with

*"The streams about Sheridan are the finest of any that we visited in Wyoming, and were the most numerous for the region over which they were distributed. They are nearly all fed by melting snow, and since the snow does not entirely leave during the year, they never go dry.*

*"Clear Creek, a tributary of the Powder River, rises in the Big Horn Mountains and flows northeast ... Mr. Rutter, of our party, examined this at the small station of Clermont. ... The following fishes were taken: Redhorse sucker, mountain sucker, wall-eyed pike, catfish, also a number of minnows."*

water today or advocate a return to presettlement times. Society and our economy have grown dependent on practices that have evolved over the years and it's irresponsible to suggest a revocation of all we now have. If we're going to stop anything, though, we should stop to consider broad statements that irrigation return flows have brought our streams to life, or that there weren't any fish in most of the state prior to settlement. They just don't give much credit to the rich and diverse fishery heritage of the streams and rivers you enjoy.

For more information about instream flows, visit the department's instream flow Web page at: <http://gf.state.wy.us/fish/watermangtISF/index.asp>

