September/October 1991 $2.00

MONTANA

Our Point of View

TOM WARREN

LAST MARCH, MONTANA'S 1991 LEGISLATURE established the "third week of September as an official week of observance of Montana's hunting heritage." As far as we know, Montana is the first state to proclaim a full week to officially pay tribute to the sport of hunting as an expression of our cultural traditions.

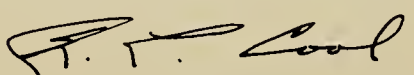
The legislative intent was threefold: (1) to reflect on hunting as an expression of Montana's culture and heritage; (2) to acknowledge the contributions made by sportsmen and sportswomen that have resulted in Montana's diverse wildlife populations; and (3) to celebrate the rich traditions of Montana's hunting heritage.

We in Montana are proud of our hunting heritage. We are also proud of the sportsmen and sportswomen who have contributed immeasurable amounts of time and money to conserve not only Montana's wildlife, but also Montana's wildlife habitats.

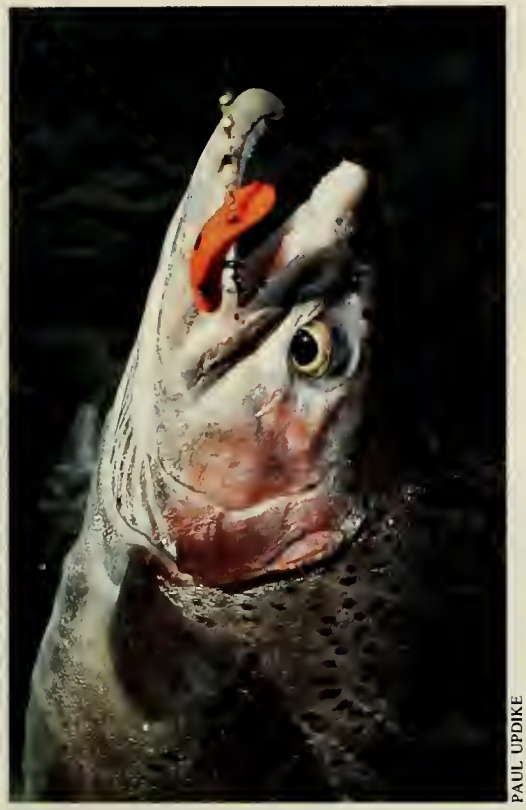
In recognition of our state's hunting tradition, Montana's first annual Hunting Heritage Week will be celebrated this year from September 15 through September 21.

We're excited about the opportunity Hunting Heritage Week will provide to formally acknowledge the contributions hunters have made to wildlife conservation. For without the concern of Montana's hunters and their honorable efforts to preserve this state's wildlife habitat, we would have no hunting heritage to celebrate.

I have a feeling that years from now a group of enterprising university students may dig through Fish, Wildlife & Parks' archives to discover how it all began. Come to think of it, those future students will probably find everything they need to know in their families' photo albums. For in Montana, the roots of our hunting heritage run as deep as most family trees.



K.L. Cool
Director
Montana Department of Fish, Wildlife & Parks



PAUL UPDIKE

Turn to page 17 for an article on Blackfoot River trout management.

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FEATURES

DEPARTMENTS

COVERS

Front Cover—Adjectives describing elk are many: majestic, magnificent, noble, impressive, regal. They all seem to fit **Rodney Schlecht's** front cover subject, which is also the subject of many a fall pursuit.

Back Cover—Montana may be the first state to officially mark its hunting heritage with a week-long event. **Annette Finstad's** back cover poster underscores the week's central message, "Wildlife depends on places where traditions are more than memories. Pass them on." Join other sportsmen and sportswomen in celebrating Montana's first Hunting Heritage Week September 15 through September 21.

THE BLACKFOOT CHALLENGE

by DON PETERS

THE TROUT THAT ENDURE in the Big Blackfoot River owe their grit to the harshness of that water. In a 1976 book, "A River Runs Through It and Other Stories," Norman Maclean provided keen insight into the biology of the Blackfoot River fishery: "It is a tough place for a trout to live—the river roars and the water is too fast to let algae grow on the rocks for feed, so there is no fat on the fish...." And he pays tribute to the wild river and wild trout that live there, "It isn't the biggest river we fished, but it is the most powerful, and per pound, so are its fish." The fish are a product of the land and of the water running through it.

The Blackfoot Valley was shaped both by glacial ice and a large glacial lake. Large glaciers extended from the high peaks to the valley floor, and the modern river runs through the bouldery debris and fine silts these ice age events deposited. The glacial ice mass carved the mountains in the northern half of the basin. Like a massive conveyer belt, the ice mass deposited the carvings—a mixture of boulders, cobbles, sand, and silt—into rolling hills on the valley floor.

Meanwhile, glacial meltwater streams laid down large flat outwash deposits of sand and gravel between the rolling hills. Near the end of the ice age, glacial Lake Missoula formed and began to fill with the muddy meltwater. The glacial lake filled the valley with water as far as Helmville. Fine silts settled to the lake bottom along with large boulders dropped from floating iceberg rafts. The interaction of these larger-than-mankind events created a diverse land and water drainage system. For example: Several streams go underground, reappearing as crystal clear spring creeks; other streams carry fine glacial sediments that almost refuse to settle out of the water once suspended; and some stream channels are still rebounding from glacial events that occurred thousands of years ago. The present-day Blackfoot River is a product of its past.

PAUL UPDIKE

IF YOU CAN, WATCH THE BLACKFOOT through all seasons. In the fall, as early as November, it freezes along the stream bottom, and

large ice mats blanket the stream bottom in some sections throughout the winter. It warms for a brief period from July through August, but then temperatures plummet back to freezing for another seven months. It seems to flow mud in the spring floods and lately even in the summer after rainfall. Hard sedimentary rocks dominate the drainage and thus the soils and water that run through it are only moderately productive.

In 1988, department biologists sampled fish in the Blackfoot River from the headwaters near the town of Lincoln to the mouth at the town of Bonner, and their research revealed some characteristics about the river's fishery. Species and abundance vary considerably throughout the river. Cutthroat and brook trout dominate the Big Blackfoot headwaters above Lincoln. Brown trout rule the roost from Lincoln to the mouth of the North Fork of the Blackfoot River. Rainbow and brown trout share dominance to the mouth of Monture Creek. Rainbows dominate from Monture Creek to the river's mouth near Bonner. In almost all sections, there were fewer trout than expected. The sampling showed native fish—bull and cutthroat trout—in such low numbers that viable wild populations are in serious jeopardy. The best spawning run of bull

"Several fish habitat improvement projects are under way to restore past land and streamside management mistakes and several more projects are being developed. . . Superb efforts by private citizens, primarily through the Big Blackfoot Chapter of Trout Unlimited, have started the restoration efforts."

trout from the river into a tributary resulted in only 12 redds or spawning beds. Mining pollution in the headwaters appears to have decimated a once thriving cutthroat fishery. Lethal mining spoils held dormant in a settling pond for decades were released in 1975 when the pond embankment failed; the waste material continues to move downstream.

The bull, cutthroat, rainbow, brook, and brown trout seek tributary streams for spawning. The tributaries provide the clean gravel necessary for successful incubation of their eggs. But even in the tributaries, the trout's reproductive success has been affected by drought and by landslides and fires which have increased fine sediment accumulation in the stream channels. In addition, culverts and irrigation diversions block access to some spawning streams.

The extensive harvest of commercial forests has added additional silt to the already overloaded system. Despite these repeated insults, the river's quality and its fishery have been advanced in part by recent restoration efforts and periodic floods that flush the sediment downstream and by the revegetation of disturbed areas.

Because of the importance of reproduction to the wild trout fishery, state fishery biologists have taken a close look at the numbers of newly hatched fish or young of the year in the

Blackfoot River

Blackfoot tributaries. In 1989, a crew of FW&P fisheries workers sampled newly hatched trout at 62 locations in 19 of the larger tributary streams. Fish sampling in some streams, which were known bull trout spawning areas in the past, failed

GEORGE WUERTHNER

to locate any young bull trout. Only one of 19 had what could be considered an adequate number of young bull trout.

While more widespread than bull trout, young native cutthroats were found in good numbers in only eight of the 62 sections. Young rainbow and brown trout were found in only the lowest stream sections throughout the drainage. No obvious physical barriers prevented further upstream movement by spawning rainbow or brown trout. It appears instead

that environmental limitations in the middle and upper reaches of the tributaries deny successful colonization by these non-native species. One might further suspect that even in the lower reaches of the tributary streams, conditions are less than ideal for rainbow and brown trout.

In 1988, biologists looked closely at the number of young newly hatched trout throughout the mainstem of the river and found good numbers of young rainbows from Scotty Brown Bridge near Monture Creek to the mouth. Although good numbers of young fish usually mean good numbers of larger trout, the Blackfoot River is an exception to the rule near Scotty Brown Bridge. Biologists found only about 250 rainbow and brown trout longer than six inches in the bridge area. This is a poor population. In the Blackfoot River near Johnsrud Park, rainbow densities of 1,100 per mile occur, but they average a mere seven to eight inches long. Good survival of young of the year and yearling rainbow trout in the Johnsrud area accounts for these much higher fish densities.

Few spawning age fish suggests the population is on a collision course with oblivion. Few spawners over several years translates to a vicious downward spiral—fewer young and fewer spawners. In 1989, biologists found extremely low numbers of spawning size fish even in the Johnsrud area. Anything that reduces spawning success (sediment increases, drought, reduced spawners) speeds the downward trend. Throughout the Blackfoot River and tributaries, good reproduction and early survival seem to be consistent problems.

DAVE McGEE

THE NATIVE FISH SPECIES have evolved with this environment and they appear best suited to survive here. Their life cycles are closely tied to the tributary streams that serve as spawning and rearing areas. The river cutthroat and bull trout live in the tributary streams for several years after hatching before migrating downstream to the main river. They return to the tributaries later in life to start the process over again. A second strain of cutthroat remains in the tributary streams all its life. This resident strain does not grow as large as the migratory cutthroat, but except for size, the two appear identical. However, these two strains are as different as you and I. The importance of both cutthroat strains gives added significance to protecting the tributary streams as well as the main river. The tributaries are essential to the future of the main river fishery.

Obviously, special management efforts are necessary to restore and enhance the Blackfoot fishery. New regulations have been implemented to reduce the harvest of spawning size fish and to stop the harvest of native species. A "three fish, none over 12 inches" regulation on rainbow and brown trout and catch and release only for cutthroat and bull trout should accomplish these goals. These restrictions are intended to allow fish populations to regain former numbers.

A second strategy to enhance the Blackfoot fishery has already begun. Several fish habitat improvement projects are under way to restore past land and streamside management mistakes and several more projects are being developed. All government agencies with responsibilities in the Blackfoot are involved with active restoration programs in the Blackfoot, including the Bureau of Land Management; U.S. Forest Service; Montana Department of Fish, Wildlife & Parks; Montana Department of Health and Environmental Sciences; and Montana Department of State Lands. Superb efforts by private citizens, primarily through the Big Blackfoot Chapter of Trout Unlimited, have started the restoration efforts. Individual private citizens and groups continue to provide money and significant amounts of volunteer time to the restoration and protection of the Blackfoot River.

As habitat, pollution, and recruitment problems are addressed, we are optimistic that anglers on the Big Blackfoot will see significant improvements. ■

Angling restrictions and stream habitat improvement projects should help trout populations regain their former numbers.


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Pass Them On.
MONTANA'S
Hunting Heritage
WEEK
SEPTEMBER 15-21, 1991