

## Protecting Native Fish in the Clearwater Drainage

By Jay Kolbe

Dams, and specifically their removal, have been much in the news lately. No one who has driven to Missoula in the last year could have missed seeing the heavy equipment, barges, and crews working to remove the Milltown Dam on the Blackfoot River. Because of its age and construction it had become increasingly unsafe and maintenance costs were high. In addition, people began to recognize that dams like it alter the flow and temperature of rivers, fragment fish habitat, encourage the establishment of non-native fish (like northern pike), and block fish migration.

For these and other reasons, Milltown dam will be removed, the contaminated sediments behind it contained, and the Blackfoot will flow freely again for the first time in 100 years.

Mostly.

There are other dams in the watershed that, despite being relatively small, create some of the same ecological problems as their larger cousin downstream. Two of these are located here in the Clearwater Chain of Lakes. The first, known as the Emily-A dam, is located between Seeley Lake and Inez. The second smaller dam is located upstream at the outlet of Rainy Lake. Like Milltown, these dams are aging and beginning to deteriorate.

Both dams were built by FWP in the 1950's specifically to block fish movement. Huh? Folks who have been fortunate enough to have heard or read recent presentations by FWP's Ladd Knotek, USFS's Bruce Reiman, and others know that the Clearwater is home to one of the most important and complex populations of Threatened bull trout in the country.

Many of these fish migrate, some over a hundred miles, to spawn in clear, cold tributaries such as the upper forks of the Clearwater. This migratory life form is highly productive and fisheries biologists are learning that maintaining free flowing river systems is critical to bull trout persistence in Montana. Why would FWP have intentionally blocked those migratory corridors?

Well, fisheries management is a complicated business. In the 50's, biologists began to see non-native warm-water fish such as yellow perch move up the chain of Lakes. These were the days before radio telemetry allowed us a window into life history of migratory bull trout and managers felt that, to prevent more exotics from moving upstream, they needed to create hard barriers such as these dams. Sixty years is a long time and with the help of misguided "bucket biologists" most of the exotic species the dams were meant to stop have since been moved above the dams.

FWP, the Forest Service, and the University of Montana recognized that they needed to take a serious look at the costs (financial and ecological) and remaining benefits of these two dams. To that end, the agencies tapped Aubree Benson, a graduate student at the University of Montana, to study the issue. She's been working with agency biologists for more than a year here in the Clearwater and what she's finding is both fascinating and important.

Aubree has constructed a fish ladder at the Emily-A dam to allow some migratory bull trout to pass the dam; she's used nets, electrofishing equipment, and traditional fishing tackle to assess what species are

located in various areas of the watershed; she's snorkeled below the dams both day and night to see what species' movements are being blocked by the structures; and she has equipped adult bull trout with radio transmitters so that she can track their movements and find their spawning areas.

Northern pike and brook trout are the exotic species of greatest concern to bull trout biologists. Northern pike were illegally introduced into the watershed in the late 80's or early 90's and are already above the Emily-A dam, at least. They are voracious predators and deplete fish that bull trout feed on and can prey upon smaller bull trout. Brook trout are found throughout the drainage. Brookies can hybridize with bulls resulting in either sterile hybrids or reproductive offspring that dilute native bull trout genetics.

Of the 21 radio tagged bull trout that were moved past the Emily-A dam this year and spawned in the West Fork, only 4 are still alive. Aubree attributes this exceptionally high mortality to low water conditions and natural predation. She also found that female bull trout that are unable to get past the dams to spawn are forced to reabsorb their eggs. This process can take more than a year and is a tremendous physical stress on the fish. Not only couldn't these fish spawn the first year but they likely will not successfully spawn in subsequent years either.

It's amazing that even after all these decades, when bull trout are allowed to pass these dams, they "remember" their historic spawning areas in the upper Clearwater. Aubree's work will allow managers to evaluate the costs and benefits of removing these dams and, if migratory corridors are restored, whether bull trout can recover their unique life history pattern while coping with the degraded stream habitats and exotic competitors that remain in the watershed.

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