



A DAM IMPROVEMENT

BY JOHN FRALEY AND JOE DOSSANTOS

It seemed impossible for trout anglers and hydropower facility owners to ever see eye to eye. Then came the Clark Fork Settlement Agreement...

The fact that hydropower dams disrupt river ecosystems can hardly be argued. How could massive concrete barriers that block free-flowing rivers, turning them into lakes, sending torrents of water downstream at times then cutting off the flow at others, *not* cause environmental problems?

The big question, then, is not whether dams impair rivers but rather how much harm they do, and to what extent the companies that own and operate dams are responsible for reducing harm to a river's fish and wildlife populations.

That's the issue that for years has been facing hydropower dam operators, conservation agencies, anglers, boaters, environmentalists, and others concerned about the flow of river water across western Montana. From the mid-1980s to the present, 14 private hydropower dams have requested or will request to be relicensed by the Federal Energy Regulatory Commission (FERC). Under federal law, dam owners wanting to continue operation must change the way they store and release water to reduce disruptions to the environment. They must

also provide mitigation—payment for projects that protect or restore the fish and wildlife habitat that dams disturb.

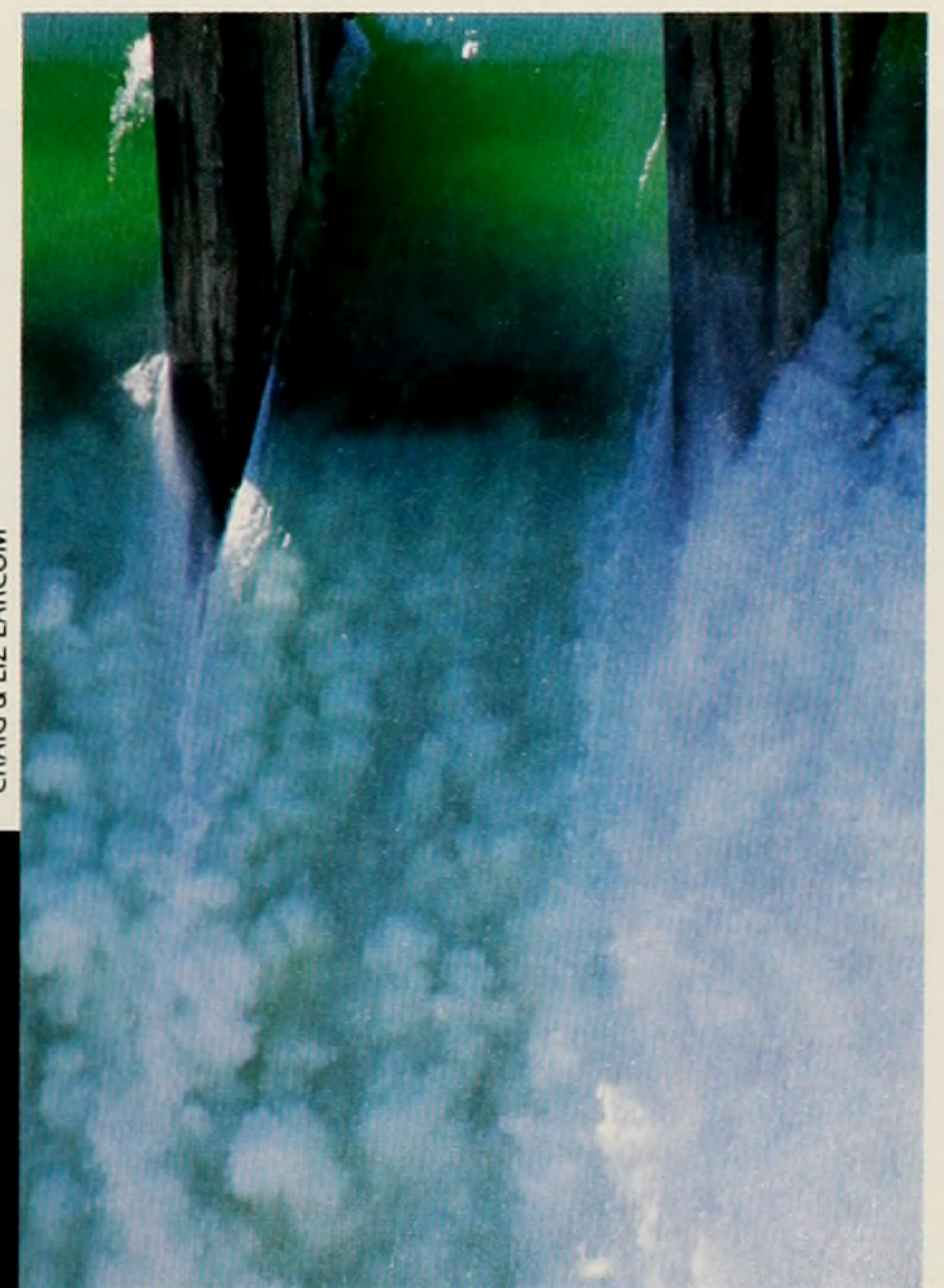
The FERC relicensing process sends strongly held values crashing into each other. Dam owners and shareholders, who understandably want to make money, point out that dams provide a relatively inexpensive source of pollution-free energy. Anglers, environmentalists, and kayakers place more value on healthy fish populations, vibrant river ecosystems, and accessible recreational water. They maintain that the full environmental costs of dams aren't adequately factored in to discussions about the benefits of hydropower.

These strong differences of opinion often make the relicensing process contentious. For example, arguments over relicensing

CHARGED ISSUE: Dams store vast amounts of river water in reservoirs, releasing it (right) at key times to drive turbines that produce electricity. Though good for power generation, the dams disrupt natural flows on rivers such as the Clark Fork (left).

mitigation for one Montana hydropower facility, Kerr Dam at the outlet of Flathead Lake, have dragged on for two decades. As is the case with relicensing controversies in other states, the dam's owners (first Montana Power Company and, since 1999, PPL-Montana) debated licensing conditions that required them to improve environmental conditions up- and downstream of the dam to compensate for disrupting aquatic environments.

Despite the seemingly irreconcilable differences between power companies and conservationists, however, the relicensing process can work. Recently, a coalition of citizens, corporate officials, and government agencies may have found a way for both the fish and the power to keep running strong.



CRAIG & LIZ LARCOM

Rivers are naturally fluctuating ecological systems containing plant and animal life that has evolved over thousands of years. Dams disrupt those ecosystems by, in part, altering historic river level fluctuations. When dam operators need to increase electrical production—during the peak times in the morning when people arrive at work and in the evening when they return home—they release water to drive the energy-producing turbines. During times of low electricity demand, such as at night and on weekends, the dams hold water back, reducing downstream flows. This rapid fluctuation in river levels downstream can erode soil and vegetation. It can also strand fish in shallow pools suddenly cut off from the main channel.

Dams also block the downstream flow of sediment and nutrients, reducing fertility in the river below. And the structures cut off fish movement by preventing fish from swimming upstream to reach spawning tributaries. Unable to find adequate areas for reproduction, fish populations below dams often decline.

LICENSE TO SPILL

In the United States, privately owned hydropower facilities operate under 50-year licenses issued and administered by FERC, which operates within the Department of Energy. The commission is composed of five members appointed by the President of the United States, with the advice and consent of the U.S. Senate.

In Montana, many hydroelectric facilities were built in the first half of the 1900s to power the growing mining and logging companies and the communities that developed around them. The sole purpose of dams was to meet the state's ever-growing electrical demands. At the time, there was little concern over how the structures altered river ecosystems. In fact, little was even known about how dams affected fish. By 1954, when the Montana Fish and Game Department (as the agency was named then) employed its first fisheries biologist, most of the state's hydroelectric

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RON BOGGS

DAZED AND CONFUSED: Dams can stun or kill fish (such as these yellow perch below Canyon Ferry Dam) that pass through the turbines. The structures can also disrupt water levels downstream, flooding river channels at times or leaving them dry.



facilities had already been built.

During the latter half of the 20th century, however, citizens grew increasingly concerned that dams and other energy development were harming natural resources. They convinced lawmakers to pass state and federal laws to protect water, air, soil, fish, and wildlife. This legislation directly affected FERC's licensing processes. As many hydropower projects came up for relicensing in the 1980s and 1990s, power producers were, for the first time, required to reduce or offset (mitigate) the effects of their projects on fish and wildlife. Public natural resources management agencies such as Montana Fish, Wildlife & Parks set minimum standards for water quality, water flow, and fish passage that dams now must meet to reach modern standards for ecological health. Because rivers are public resources, the revised FERC relicensing process gives citizens some say in how dams are operated.

That's the theory, anyway. In practice, hydropower relicensing has not worked as well as Congress intended. The process was

never set up to encourage collaboration and joint decision making. Conflicting views and positions were to be arbitrated by FERC staff members in Washington, D.C. Unfortunately, that process didn't work and often resulted in scenes of dueling experts and combatant lawyers. The FERC hydro-relicensing process became known for confrontation and litigation, which resulted in postponed benefits for the environment as well as costly operational delays and poor public relations for the power companies.

A NEW APPROACH

Like fish adapting to an altered environment, corporations must adjust to changing times if they hope to survive and thrive. Avista Corporation (formerly Washington Water Power Company) had closely watched the procedural train wreck of the Kerr Dam and other large relicensing projects nationwide. In 1992, faced with the upcoming relicensing in 2001 of two large hydroelectric dams, the company searched for a better approach.

"We looked around the country and saw



BARBARA THOMAS

END OF THE LINE: River fish moving upstream to their spawning tributaries reach a dead end at dams, such as Kerr Dam at the outlet of Flathead Lake. Fish ladders allow for some upstream passage, but they don't work on many dams.

“ We looked around the country and saw that most relicensing projects were not going well. ”

—BOB ANDERSON,
*Director for Environmental Affairs,
Avista Corporation*

that most ongoing relicensing projects were not going well,” says Bob Anderson, Avista’s director for environmental affairs. “We decided from the beginning that a team-work process that involved all the affected groups would be the best way to go for everyone.”

The two Avista dams were Noxon Rapids and Cabinet Gorge, both on the lower Clark Fork River in northwestern Montana. According to Montana and Idaho state fisheries officials and conservation group leaders, the company went beyond what any other had previously done to learn how those dams affected fish

populations and what it could do to help. Before applying for a new permit, Avista first met with local citizens and consulted with state and federal natural resources agencies. The company eventually brought in representatives of more than three dozen interests, ranging from federal agencies like the U.S. Fish and Wildlife Service to local groups such as the Elk Creek Watershed Council. Everyone was given an equal seat at the negotiating table. Then the company hired several consultants experienced in conflict resolution to

SERIOUS THREAT: Once bull trout were listed as a federally threatened species in 1998, dam operators had to take into account how their facilities affected the fragile fishery.

facilitate meetings and help the group reach consensus. Avista also invited a high-level regional FERC official to attend key meetings and answer questions.

Providing some additional incentive for Avista’s cooperative approach was the looming threat of the federal Endangered Species Act. Bull trout were listed as a federally threatened species in 1998. The fish live in the Clark Fork River, and the two dams block their historic migratory routes as they leave Idaho’s Lake Pend Oreille and swim upstream to find spawning tributaries.

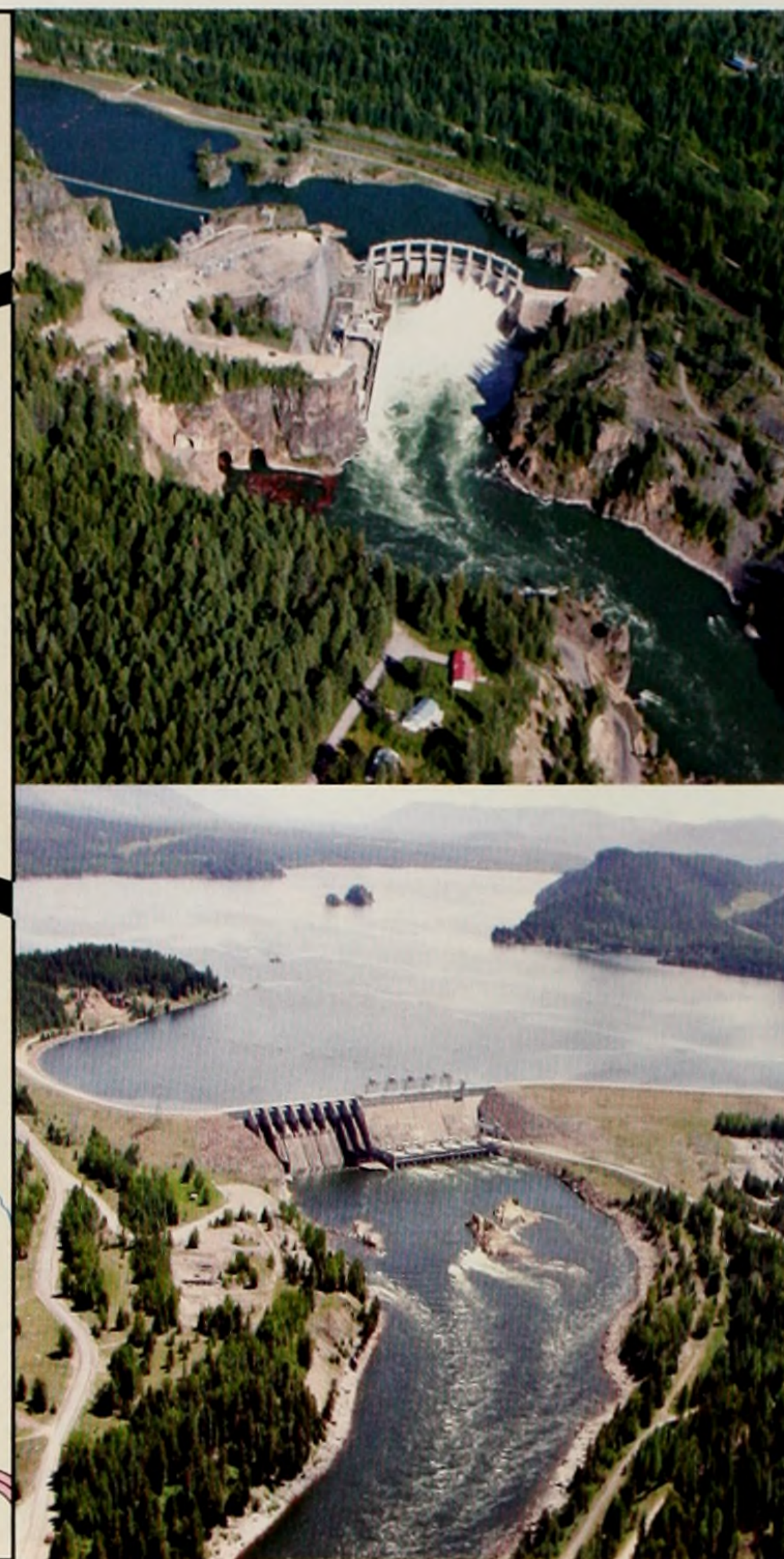
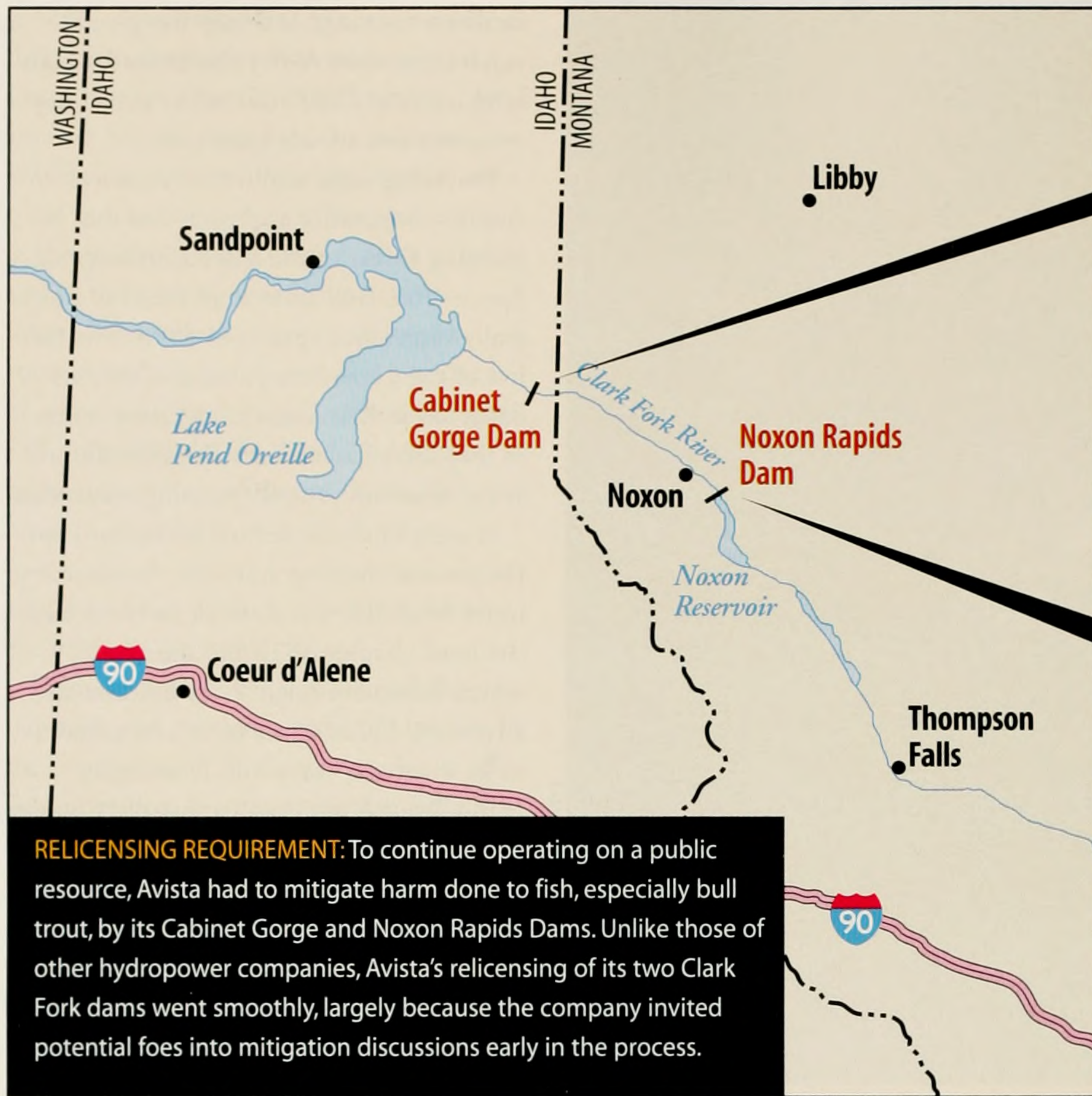
It wasn’t just the federal stick that kept the process moving, however. Another key move by Avista was to work early on with the local chapter of Trout Unlimited, which otherwise might have become an adversary. “They came to us and asked us to be involved,” says Bob Dunnagan, Idaho Trout Unlimited Panhandle Chapter president, who represented the conservation group during the relicensing process. “I think [this collaborative process] is a good example of how private industry, nonprofits, government, and other groups have been able to work together for the betterment of fish.”

Avista even went so far as to convince Trout Unlimited’s chief legal council in Virginia—an individual who could have become the company’s worst nightmare—to become a partner in the relicensing process.

“I’d never heard of any company doing that before,” says Chris Hunter, head of Montana FWP’s Fisheries Division. “I think that had a lot to do with how well



JOHN LAMBING



MAP ILLUSTRATION BY MONTANA OUTDOORS/PHOTOS BY AVISTA CORPORATION

RELICENSING REQUIREMENT: To continue operating on a public resource, Avista had to mitigate harm done to fish, especially bull trout, by its Cabinet Gorge and Noxon Rapids Dams. Unlike those of other hydropower companies, Avista's relicensing of its two Clark Fork dams went smoothly, largely because the company invited potential foes into mitigation discussions early in the process.

and how quickly things moved along.”

The collaborative approach worked. Unlike the Kerr Dam and other lengthy relicensing controversies, the Noxon Rapids and Cabinet Gorge relicensing moved along quickly. It took only three years for participants to arrive at what was called the Clark Fork Settlement Agreement.

“When we first started talking about this,” says Hunter, “I thought it would be impossible to get 30 groups to agree on anything. But I’ve been amazed at how well it worked.”

Hunter says he’s also been amazed at how FERC relicensing in Montana has continued to improve.

“The Kerr Dam process was unwieldy and took 20 years,” he says. “Montana Power Company [now PPL-Montana] learned from that and completed the Missouri River hydropower dams relicensing in eight to ten years. Now with this project, accomplished in less than three years, Avista has taken the process even further.”

Hunter adds that Avista’s two Clark Fork dams were the nation’s first large, modern

hydropower projects actually relicensed by FERC on schedule. “All others have bogged down to some degree in red tape and controversy,” he says.

BULLS GET A BOOST

What did Avista agree to do in return for its reauthorized license? On many dams, the key issue with relicensing is for the owners to change the way they operate the facility. Fish proponents want dams to release and hold back water to more closely replicate natural river flow fluctuations.

Noxon Rapids and Cabinet Gorge Dams, however, don’t store much water. The main issue there was that the dams block off cutthroat trout and especially bull trout from moving upstream from Lake Pend Oreille.

“What the whole process got down to,” says Hunter, “was how Avista was going to mitigate that.”

The core element of the agreement was that Avista would fund fisheries programs in northern Idaho and northwestern Montana to benefit whitefish and native trout, especially the threatened bull trout. For example,

biologists with Montana FWP, the Idaho Department of Fish and Game, and the U.S. Fish and Wildlife Service teamed up with the power company to buy and restore key tributary habitat, including 871 acres in Montana’s Bull River drainage and 216 acres of tributary habitat in Idaho. More habitat acquisitions are planned.

Avista, state, and federal biologists are also conducting a wide range of research projects to learn more about bull trout survival and habitat needs. And they are monitoring fish populations to see how the species is faring from year to year.

Some fish are getting a free ride over the dam to spawning sites. During the past two years, biologists have netted, radio tagged, and transferred 68 adult bull trout over Cabinet Gorge Dam—the first time the species had made its way upstream since the dam was completed in 1952. Some of these bull trout moved even farther upstream from their release site and spawned successfully, encouraging biologists to consider expanding the dam-hopping effort this spring.



PHOTOS BY AVISTA CORPORATION

MAKING AMENDS: Avista has begun mitigating disruptions to bull trout populations on the Clark Fork River by conducting research, buying habitat, transporting fish, and funding educational programs and materials. Currently the company has 21 staff members working on bull trout projects. Above left: Avista biologists surgically implant a radio transmitter into an adult bull trout. By following the fish with radio receivers, they will be able to learn more about where bull trout go to spawn, spend the winter, and avoid flood waters. Above right: During the past two years, biologists have netted and transported 68 adult bull trout over the Cabinet Gorge Dam to help the fish reach spawning tributaries.

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Montana FWP Fisheries Division

Another part of the agreement has been to increase enforcement to prevent bull trout poaching. It's illegal to keep a bull trout caught from the Clark Fork, its tributaries, or Lake Pend Oreille. Game wardens in Montana and Idaho have beefed up patrols and surveillance (using video cameras purchased by Avista) of spawning sites to discourage illegal fishing. Game warden Tom Whalen, who patrols the Pend Oreille basin in northern Idaho, says most anglers know which fish are bull trout and that it's illegal to keep them. Anglers caught with a bull trout usually say they thought it was a different, legal trout species.

“The bottom line is that most people are obeying the regulations,” Whalen says. “I think this shows that all the education efforts are paying off.”

Because angler ignorance can lead to inadvertent bull trout harvest, a key element in the restoration effort is increasing public information and education. As part of the agreement, Avista is paying to put in more bull trout information signs along the river. The company also funds radio public information announcements on how to identify bull trout and pays for bull trout information websites, education materials, school presentations, and county fair booths.

The educational efforts reduce illegal harvest and also increase public awareness about bull trout life history and habitat needs. What's more, they help people understand how to identify the species and make clear how land use and other human activities can harm bull trout.

Chris Crane, an FWP technician and aquatic educator at Thompson Falls, is among those working to teach kids about

bull trout. He transports a trailer filled with bull trout information to fairs and other events. He also takes elementary school students fishing and aquatic insect collecting, all the while teaching them about the need to conserve bull trout, other native fish, and aquatic habitat.

Meanwhile, in Idaho, Maria Corsini has been helping spread the word about bull trout conservation by building information kiosks, speaking at county fairs, and talking to river and reservoir users.

“We know we are reaching people,” says Corsini, education coordinator for Idaho Trout Unlimited. “Most are now aware of what we're trying to do to conserve bull trout.”

Admittedly, informational signs and kiosks can't compensate for how dams have disrupted fish migrations, and research and habitat acquisition won't restore bull trout populations to historic levels. But if people want hydropower, then perhaps the compromise struck by Avista and conservationists represents the best way to keep both electricity and the river flowing with the least disruption possible. 🐟