CANYON FERRY'S BALANCING ACT

Trout, walleye, and perch anglers on the sprawling reservoir want more and bigger fish. Is that possible, given the ecological limits of the lake and the complex relationships among species? BY EVE BYRON

Gerald "Perch Man" Hintz recalls catching hundreds of firm-fleshed yellow perch at Canyon Ferry Reservoir each winter in the 1980s and '90s, when he and fellow ice anglers regularly hauled five-gallon buckets of fish off the ice. The abundance of perch, as well as rainbow trout, made the sprawling 35,200-acre reservoir between Helena and Townsend one of Montana's top fisheries. Thousands of people from throughout the state and elsewhere came to try their luck, providing a much-needed boost to the local economy.

Then something strange happened. In 1989 state fisheries biologists conducting population surveys netted several walleyes, a famed game fish and close kin to yellow perch with a voracious appetite and no sense of kinship. As walleye numbers exploded in later years, the perch population declined to almost nothing and trout numbers plummeted.

And so began what has been a balancing act for Montana Fish, Wildlife & Parks. Agency biologists must determine—then find ways to produce—the right mix of rainbow trout, perch, and walleyes for different angling constituencies all clamoring for more of their favorite fish. And they must do it in a reservoir environment where widely fluctuating water levels hamper the growth of underwater plants. Perch need that vegetation to spawn, find food, and escape predators so they can grow big enough for anglers to catch. "Water levels affect Canyon Ferry's submergent vegetation, the vegetation affects perch productivity, and the perch population affects walleye size and numbers," says Eric Roberts, FWP fisheries biologist for the reservoir. "It's all connected."

TEMPORARY TRANQUILITY Anglers drift spinner rigs for trout and walleyes during a peaceful midsummer evening on Canyon Ferry. The atmosphere at the sprawling reservoir is not always so serene. Over the past 20 years, some Montanans have strongly disagreed with FWP staff and other anglers over how Canyon Ferry's fertile fisheries should be managed.

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A NEW PREDATOR ARRIVES

When the Missouri River was first impounded in 1955 to create Canyon Ferry Reservoir, the water held various native sucker species and burbot as well as yellow perch, rainbow trout, and brown trout that had been stocked in the 1920s and '30s. Then, in the 1990s, walleyes began appearing on the end of anglers' lines. (No one knows how the fish got into the reservoir.) At first there were too few walleyes to affect other fish populations. But by 1997 numbers of breeding-sized walleyes had grown to the point where the fish could take full advantage of what turned out that year to be ideal spring spawning conditions. "Suddenly—boom—walleyes were everywhere," says Roberts. FWP surveys jumped from showing an average of two walleyes per survey net in 1996 to ten per net just two years later.

The 1997 walleye "year class" (generation of fish) became famous—or infamous, depending on your viewpoint. For two years, those young walleyes were still too small to eat anything but minnow-sized fish. But by 2000 they had grown big enough to get their jaws around larger specimens. "After that we saw significant declines in perch and trout numbers," Roberts says. The 1999 survey showed 47 perch per net. Only one year later, that dropped to 19. In 2004 numbers plummeted further to just 0.5 perch per net—less than 2 percent the number five years earlier. "We were alarmed," says Roberts. "Perch are the foundation of the system." In response, FWP slashed the daily perch limit in 2005 from 50 to 15.

"In just a few years, Canyon Ferry's perch sport fishery was more or less replaced by a walleye fishery," says George Liknes, FWP regional fisheries manager in Great Falls. "It was definitely a plus for walleye anglers, but a real loss for people who'd been used to catching perch. It was especially tough for families that liked going out and catching perch through the ice."

Rainbow numbers also were falling, as hungry walleyes gobbled up the finger-sized trout FWP stocked in the lake each year. Survey net catches went from an average of roughly 15 rainbows in the late 1990s to about two per net in 2002. Numbers of longnose suckers and white suckers, important native forage species, also declined as walleyes consumed any prey they could find.

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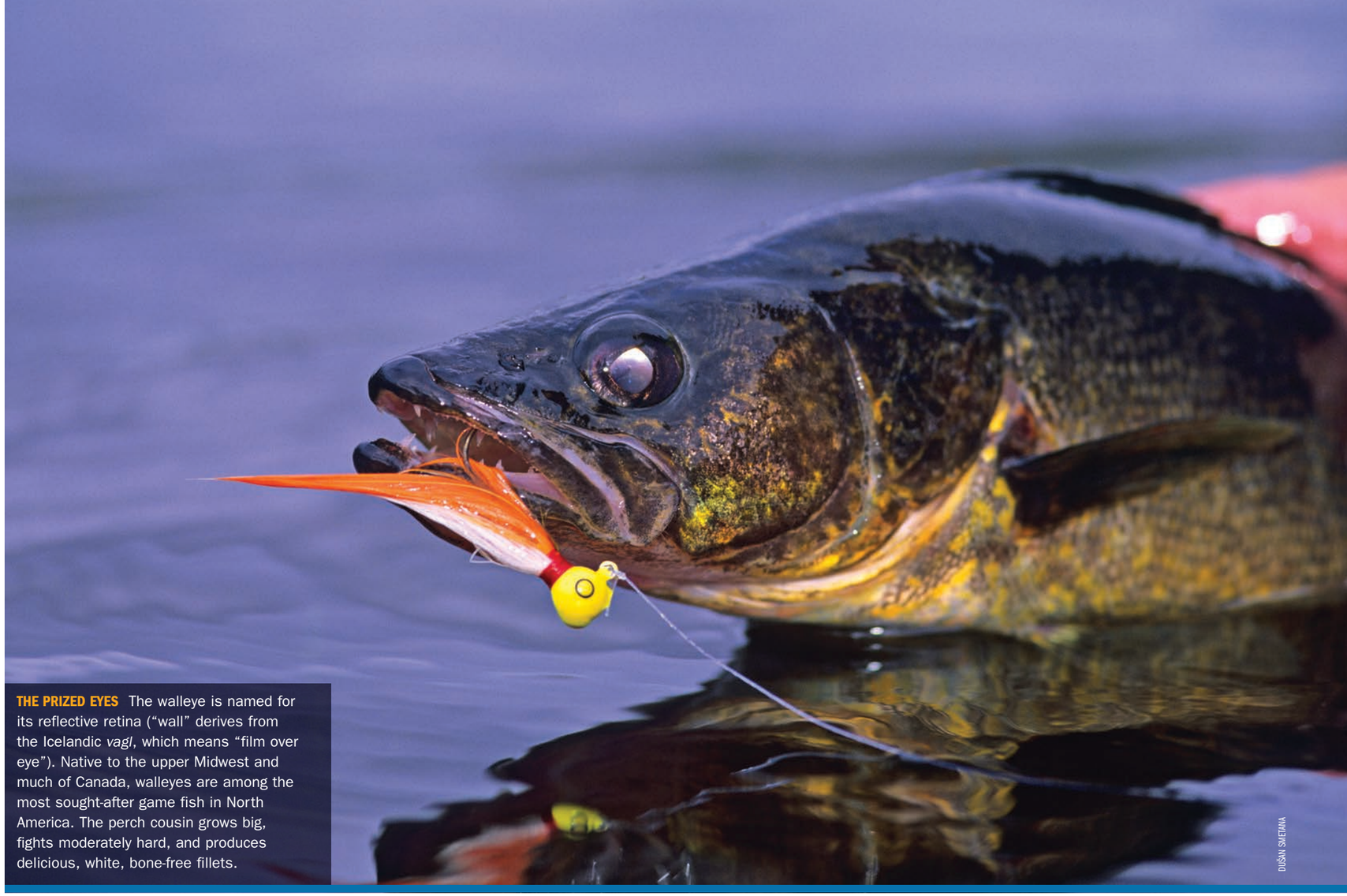
Meanwhile, the walleye fishing boomed. Seemingly overnight, Canyon Ferry became Montana's hot walleye destination, drawing anglers from across the state and as far away as Minnesota and Ohio. The fishing wasn't always great, however. In midsummer, walleyes often had so many newly hatched perch and stocked fingerling trout to eat they ignored anglers' offerings. "[FWP biologists] were getting some monster fish in the gill nets, but to catch them really depended on the [abundance of] perch," says Craig Campbell of Manhattan, president of the Gallatin/Madison chapter of Montana Walleyes Unlimited.

Eve Byron is a writer in Helena and a reporter for the Independent Record.



THE PRIZED EYES The walleye is named for its reflective retina ("wall" derives from the Icelandic *vagl*, which means "film over eye"). Native to the upper Midwest and much of Canada, walleyes are among the most sought-after game fish in North America. The perch cousin grows big, fights moderately hard, and produces delicious, white, bone-free fillets.

DUŠAN SMETANA

TOO MANY MOUTHS TO FEED

FWP responded to the trout decline by stocking 8-inch rainbows, too large for most walleyes to eat. That inflated annual stocking costs from $20,000 to $150,000, because the trout must be fed more while growing larger in FWP's Lewistown fish hatchery, and it costs more to transport the larger fish to Canyon Ferry. Trout numbers are not as high as before walleyes arrived, but anglers say the new stocking strategy has improved catch rates. Surveys in recent years show an average of five rainbows per net, up from a low of one per net in 2005.

To take predation pressure off perch and trout, FWP increased the daily walleye limit from five to 20 fish per day in 2000. Some walleye anglers saw that as a gift, but others took it as an insult to their favorite fish. "They have managed the walleye in Canyon Ferry to keep the population low," Campbell says. "Their plan is that however the perch do, that's how well the rest of the fish will do. But the perch are not doing well, the trout are not doing that great, and the walleye are up and down and we just have a bunch of little ones."

Roberts says FWP has no desire to eliminate the walleye fishery—and even if it did, the job would be impossible. But he says the lake definitely contains too many walleyes for the limited number of perch, and that's why the average walleye's size, growth rate, and condition have declined. "The same thing happened on [South Dakota's] Oahe Reservoir in the late 1990s," he adds. "The lack of forage caused the average size of walleyes to drop, and the fish got real skinny." Roberts says such problems are common in western walleye reservoirs, which lack the diversity of prey species found in midwestern lakes. He says FWP considered stocking perch, but even the new Fort Peck hatchery doesn't have anywhere near the capacity to grow the millions required to make a significant difference in the Canyon Ferry fish community. "We'd need to stock enough perch that walleyes couldn't eat them all and there'd be enough left over to improve the perch sport fishery," he says. Roberts estimates that Canyon Ferry walleyes consume more than 30 million fingerling perch each year. "At full capacity—if they didn't produce anything else—our Fort Peck and Miles City warmwater hatcheries combined could only produce 5 million fingerling perch," he says.

Not everyone is convinced that Canyon Ferry's perch population has plummeted. Hintz believes that walleyes have pushed

THE LIMITING FACTOR Canyon Ferry's yellow perch population drives the walleye population and the perch sport fishery. If the lake can't produce enough perch, walleye numbers and condition suffer, as do winter anglers, who target the tasty panfish. So why not stock another forage fish in the reservoir to give perch a break? Biologists say any new species could rob food from young perch and walleyes, which has happened on other reservoirs in Montana and elsewhere in the West.

ERIC ENGBRETSON

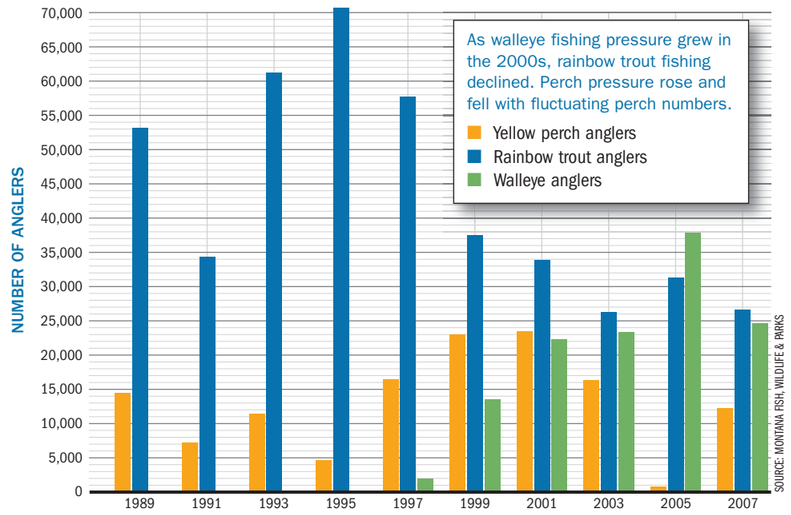
perch to new, deeper locations where FWP survey nets aren't finding the small fish. "People are crying that there's no perch, but I think they just moved," he says. Hintz adds that if perch numbers are dropping, FWP should prohibit perch fishing derbies for a few years and give them a chance to rebound.

FWP is working with Walleyes Unlimited and other civic and sportsmen's groups to enhance perch habitat by sinking thousands of used Christmas trees into the reservoir to provide perch spawning sites. Roberts says the effort helps perch, but as is the case with the stocking proposal, not nearly enough trees can be collected and placed in the reservoir to boost perch numbers enough to adequately feed the existing walleye population.

Campbell considers the tree project a good start, but he'd also like to see FWP introduce other forage species such as ciscoes and shiners. So would Harley Hankins of Townsend, a longtime Canyon Ferry angler. "We have suggested they consider stocking another food fish for walleye, but they just absolutely will not consider adding another fish to that lake," Hankins says, adding that ciscoes helped revive the Fort Peck fishery.

Liknes points out that anything FWP stocks into Canyon Ferry eventually will find its way downstream. He and his staff—along with downstream trout anglers—are concerned the additions could endanger not only Canyon Ferry and downstream reservoirs, but

Canyon Ferry Angling Pressure 1989–2007



The big difference: aquatic plants

North America's top walleye waters are shallow, large, fertile, and windswept, just like Canyon Ferry. But those productive walleye lakes have one crucial component far less abundant in the Montana reservoir: submerged aquatic vegetation such as pondweed and coontail.

Submerged plants provide places for perch to spawn, find food, and escape predators. They allow the tiny fish to grow and feed adult walleyes and also provide sport to anglers, especially in winter. Canyon Ferry has some shallow-water vegetation but not enough to produce strong perch numbers, says Eric Roberts, FWP biologist for the reservoir. That's because it lacks stable water levels found in natural walleye lakes.

Canyon Ferry is managed by the Bureau of Reclamation (BOR) for multiple uses—including hydropower, irrigation, flood control, recreation, downstream fisheries, and the reservoir's own fisheries. Roberts explains that the BOR holds back snowmelt flowing into the reservoir from the Missouri River in late spring, which raises the water level, then releases water through dam turbines in summer to generate electricity and fill irrigation canals. Water levels fluctuate an average of 12 feet each year.

Shallow-water plants can't take root. Vegetation beds are either left high and dry by fall when water levels drop, or the reservoir gets so deep in spring that sunlight can't reach the vegetation. "If we had stable water levels, I really think we could maintain a substantial perch population. Canyon Ferry would be more like walleye lakes in Canada and the Midwest," Roberts says. "Without that, we're looking at a lake system here that's missing a key ingredient to first produce enough perch to grow walleyes and then also provide enough perch for ice anglers." *—Tom Dickson*

Yellow perch, like these in a Wisconsin lake, thrive in shallow-water vegetation.

ERIC ENGBRETSON

KENTON ROWE

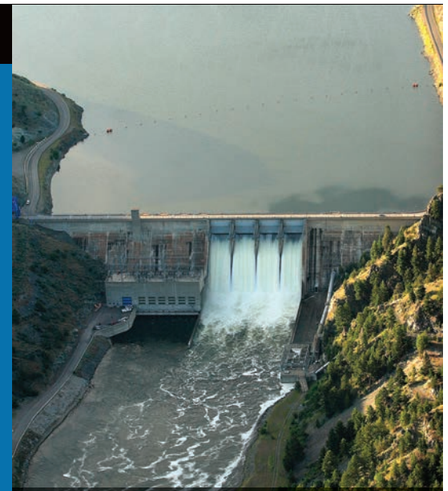
SLIM PICKIN'S FWP creel clerk Chris Hurley asks perch anglers about their catch. In recent years, numbers have been low compared to the high harvest in the late 1990s.

Canyon Ferry's walleyes go downstream

No discussion of Canyon Ferry's fisheries is complete without mention of the two reservoirs immediately downstream, Hauser and Holter. In fact, the combined fishing pressure on the two smaller reservoirs—Hauser is 3,800 acres and Holter is 4,800 acres—actually tops that on Canyon Ferry. (Each year more anglers fish the three reservoirs combined than any other single water in Montana.)

Like in Canyon Ferry, the two downstream reservoirs' fisheries have changed in recent years. Hauser and Holter have contained walleyes since the 1950s, but until recently, the populations stayed at low levels. Traditionally the lakes produced fishing mainly for rainbow trout and perch—along with kokanee salmon during the 1980s and '90s—and some walleyes. "Those were multispecies fisheries that were balanced pretty well," says Eric Roberts, FWP fisheries biologist for the three reservoirs. High water in 1996 and 1997 washed large numbers of walleyes from Canyon Ferry downstream while flushing most kokanee out of the reservoir system. Afterward, Holter and Hauser contained too many walleyes for newly stocked kokanee to survive. "We tried every stocking combination possible to get the kokanee going again, but we couldn't get them past the walleyes. Everything got gobbled up," says Roberts. The average annual kokanee harvest at Hauser from 1989–96 was 69,000 fish; that plummeted to an average of just 160 kokanee each year from 2000—07.

As it did on Canyon Ferry, FWP increased the size of rainbows stocked in the lower reservoirs and has been able to keep the trout fisheries afloat. Mirroring what happened upstream, walleye harvest on both Hauser and Holter has boomed. For example, from 1986–97 anglers harvested an average of only 744 walleyes on Holter each year. That jumped to an average of 9,300 annually from 1998–07, though the average size there and on Hauser is small because the predators lack an abundant food source. Also reflecting the situation upstream, the perch population in both reservoirs has tanked. On Holter, for instance, angler harvest has fallen from an annual average of 200,000 perch in the 1990s to just 16,000 perch in 2007. "Just like on Canyon Ferry, the perch populations are not surviving walleye predation to grow large enough for anglers to catch perch in large numbers," Roberts says. *—Tom Dickson*



KENTON ROWE

Spring releases from Canyon Ferry Dam flush millions of tiny walleye fry into downstream reservoirs, further disrupting delicate predator-prey interactions.

also the world-class trout fishing on the 35-mile blue-ribbon stretch of the Missouri River below Holter Dam. One cautionary tale is Tiber Reservoir, where FWP stocked ciscoes, a salmonid from the walleye's native range in Canada, to help walleyes fatten up. The ciscoes ended up eating zooplankton needed by newly hatched walleyes and perch, causing a decline in walleye numbers. A similar ecological disruption from a well-intentioned introduction happened after FWP stocked mysis in Swan and Whitefish lakes as food for kokanee salmon in 1968. The freshwater shrimp ended up downstream in Flathead Lake, where they directly competed with young kokanee and cutthroat trout for zooplankton, taking food from the very species they were intended to help. Kokanee and cutthroat populations crashed. "I can understand why some anglers want us to stock new forage species," says Liknes. "But the potential ecological train wreck those fish could create for the entire food web in the reservoirs and the Missouri River downstream just doesn't justify the possible benefits."

STILL A FISH FACTORY

What often gets lost in discussions about how the Canyon Ferry fishery should be managed is that the sprawling reservoir continues to produce vast numbers of game fish. Trout aren't as abundant as they were 15 years ago, but numbers are higher than in the grim years of the early 2000s, says Roberts. "And because of the larger stocking size, trout anglers catch lots of nice rainbows in the 18- to 20-inch range, with many getting up to 4 to 5 pounds. And angler catch rates for rainbows are good, averaging about .33 fish per hour." FWP still finds between two to seven walleyes per net in its annual surveys, and walleye fans can find plenty of 13- to 15-inch "eaters" from the abundant 2007 year class. Anglers still catch trophy-sized walleyes, though less often than in the early 2000s.

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Despite Canyon Ferry's steady game fish production, there's no getting around the fact that, like on many western walleye reservoirs, perch production and survival is not adequate to maintain both the walleye population and a good perch sport fishery. That keeps walleyes underfed, and it deprives ice anglers once accustomed to catching bucketsful of the tasty panfish. "We've basically traded perch for walleyes, but the problem for Canyon Ferry ice anglers is that they don't catch a lot of walleyes in winter," Roberts says. "If they did, that would solve a lot of my headaches."

To read the 2010–2019 Upper Missouri Reservoir Fisheries Management Plan, visit the FWP website at fwp.mt.gov or call (406) 444-2449.

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ON THE REBOUND Since the mid-2000s, FWP has been stocking Canyon Ferry with 8-inch rainbows—too large for most walleyes to eat. Anglers say they are now catching good numbers of adult trout in the 18- to 20-inch range.