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CAPTIVE WILDERNESS

In the wildest place in the continental United States, visitors flirt with untrammelled nature, while scientists try to study, defend, and preserve it

BY JEFF WHEELWRIGHT

Just three gutted shacks remained in Forney, a ghost town on the eastern edge of the Frank Church–River of No Return Wilderness in central Idaho. When I step out of the car to look around, nothing stirs but a grasshopper buzzing in the hot breeze. On the dry foothills, scattered conifers come together in dark lines of vegetation where the water runs down in the draws in the springtime. “If there is anyplace in this guide where you are truly on your own,” I read in my traveler’s handbook, “this is the place.”

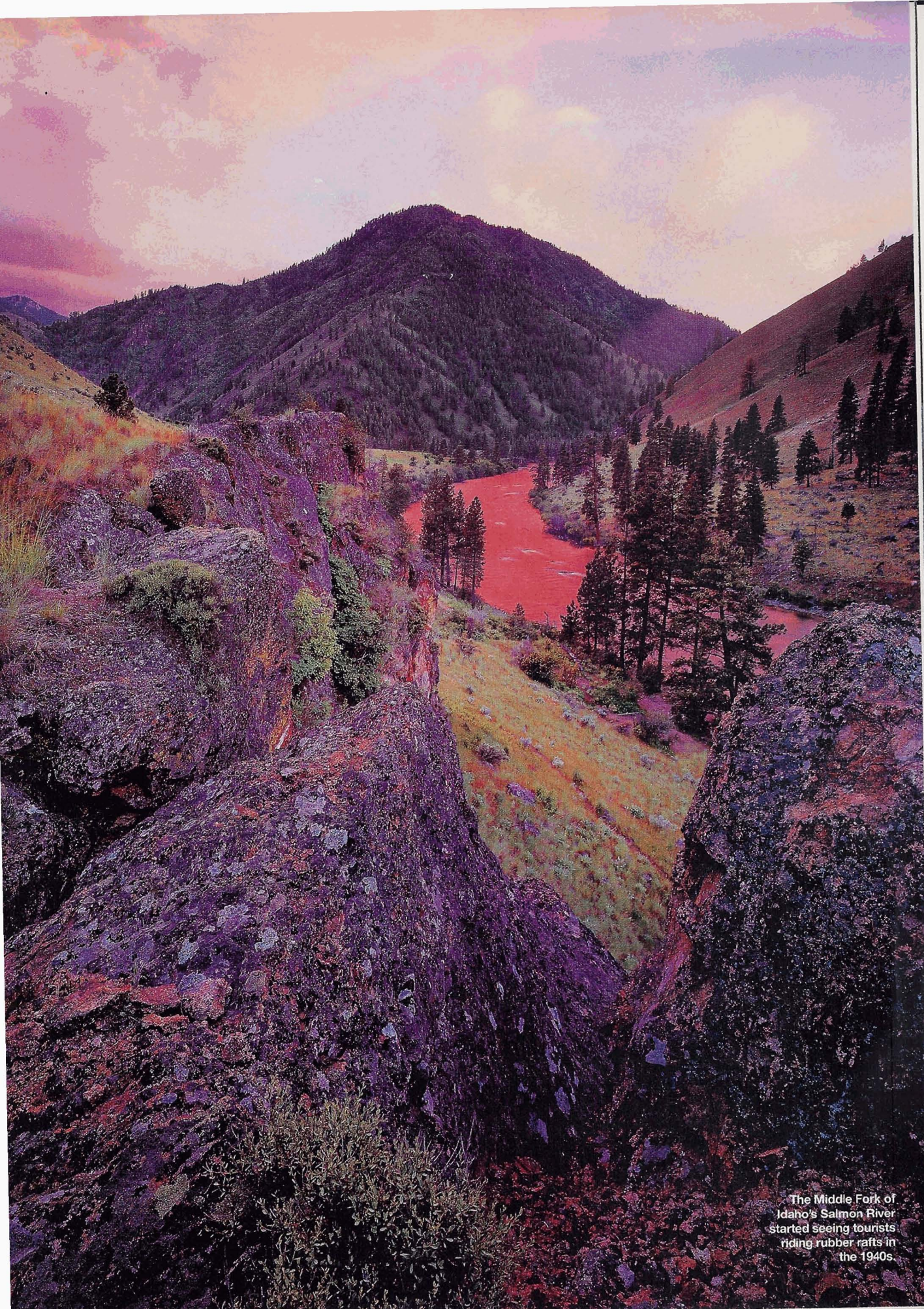
At 2.4 million acres, “the Frank” is the largest undivided wilderness area in the Lower 48 states. An additional 10 million acres of national forest surround the Frank, making central Idaho the least developed tract outside of Alaska. Wilderness, by definition, is supposed to be uninhabited, uncultivated, unspoiled terrain. The National Wilderness Preservation System has 680 chunks of such terrain, varying in size from a six-acre island in Florida to a nine-million-acre park in Alaska. About 2.5 percent of the land of the Lower 48 is designated as wilderness, the great majority situated in the West.

If I’d arrived a century ago, miners and ranchers would have been pecking and nibbling at the basins and ridges. Central Idaho’s forest is wilder now than it was in 1900 or 1940 and is actually getting wilder as the landscape recovers from exploitation. The danger to places like the Frank has shifted from low-tech and dispersed human activity to high-tech, focused fascination. In the vision of the 1964 Wilderness Act, human beings are temporary visitors. As more Americans take advantage of better gear to travel deeper and stay longer, though, they threaten to overwhelm the crown jewels of the backcountry.

“Even the largest wilderness areas become partially deranged,” wrote Aldo Leopold, who helped found the conservation movement in the United States in the early part of the 20th century. In the Frank Church–River of No Return, the derangements include nonnative plants, missing fish, and the tremendous and growing popularity of rafting trips on the Salmon and Middle Fork rivers. Wilderness managers—the oxymoron suggests the delicacy of the problem—have turned to science for help. While one body of researchers analyzes damage to the wilderness, another looks to its pristine aspects for tips about restoring natural systems elsewhere. Still, there’s a paradox inherent in such work: Landing in this unique place with their stakes, scopes, shovels, and laptops, the researchers help change the very phenomena they wish to preserve. I imagine the Frank, despite its gigantic size, becoming entangled like Gulliver in the snares of teams of well-meaning Lilliputians.

The road into the Frank climbs through steep forest on a single lane of scraped rock. On this August day, at the height of tourist season, there is no other traffic. South of Cobalt, I pass Porphyry Creek coming down Quartzite Mountain—proof of prospectors past. The raw volcanic material of central Idaho lies over the slopes in haphazard heaps. Called talus, the jagged, burnt-colored slabs look like tailings from a massive mine. As I go higher, big-bellied ponderosa pines give way to slim lodgepole pines and firs, and blooms of white yarrow and blue larkspur border the roadway.

At the ridgeline, the mountaintops of the Frank roll on and on, their canyons folded deeply between them. When Lewis and Clark came here in 1805, they stared



The Middle Fork of Idaho's Salmon River started seeing tourists riding rubber rafts in the 1940s



The waters of the Middle Fork are pristine because the watershed is protected from development.

I make camp at a site where the computer model predicts I will have an “encounter”—hear, see, or meet people—about six times

glumly at the “immense ranges of high mountains still to the west” and decided to alter the route of their expedition to the north. Today almost 2,500 miles of trails traverse the preserve, but many are scratchy and treacherous, and 1.5 million acres of wilderness have no trails at all. “Tons of wilderness never see a soul,” says Sheri Hughes, who manages the Middle Fork of the Salmon River for the U.S. Forest Service.

Second only to the white-water rivers, the alpine lakes and granite outcrops of the Bighorn Crags are probably the most striking features of the Frank Church–River of No Return Wilderness. When I arrive at the Crags Campground, having traveled through Forest Service land to the official border of the wilderness, I am dismayed to see a dozen cars parked at the trailhead. The campground is flush with brightly colored tents.

A couple of years ago, the Forest Service, the agency in charge of the wilderness, commissioned Randy Gimblett, a professor at the School of Natural Resources at the University of Arizona, to analyze the stresses on the Crags environment. In 2003 Gimblett’s assistants offered surveys to parties of hikers and riders entering the Crags at the main trailhead. The participants were asked to drop off or mail in “trip diaries” that noted their daily whereabouts in the wilderness, the paths they took between lakes, and the number of other people they ran across.

For a broader gauge of tourist traffic in this area, the researchers implanted battery-powered counters just outside the wilderness boundary, a few hundred yards from the campground. Hikers and horse parties were chronicled coming and going all summer. Gimblett’s team then went out and rated the compression of the soil, amount of erosion, loss of vegetative cover, damage to trees, volume of litter, and the like.

“We’re asking, which areas are getting hit?” Gimblett says. “How do people distribute across the landscape? We modeled between 400 and 500 trips—simulated parties of backpackers moving in and out of the landscape.” His software can even predict how often a hiker will encounter another hiker on a given trail or at a given lake on a particular day. The model is not meant to be a tool to limit hiking, but it might help the Forest Service respond to changes in traffic patterns without having to be out in the field verifying the impacts.

At dusk I reach the top of a ridge; the altitude at 8,000 feet affects my breathing. Through the pines I can see silhouettes of the famous Crags, a troupe of cones and knobs sculpted against the sky. The next day I head for nearby Wilson Lake, one of the most heavily frequented overnight spots in the Crags. On any night during the summer, an average of 1.2 parties stop there, according to Gimblett’s data. Unwittingly I decide to make camp at a location where his computer predicts I will have an “encounter”—that is, I will hear or see or meet other people—approximately six times during my stay. That turns out to be a good call. I have repeated encounters with a middle-aged couple who are hiking with their dog. Their tent is located across the lake, and we end up disturbing each other’s solitude for 12 hours.

The framers of the Wilderness Act, believing that automobiles led to the ruination of nature, prohibited anything related to a road or a motor in designated areas. When Congress established the River of No Return Wilderness on Forest Service land in 1980,

commercial and private boating was in high gear and couldn’t be rolled all the way back. Motorboats may still operate on sections of the Salmon River. Outfitters of rafting trips are permitted to fly their parties to launch points deep within the woods. More than two dozen landing strips were grandfathered into the legislation creating the wilderness, along with numerous private lands belonging to individuals, outfitters, ranchers, and mining companies. All of that explains why the Frank (the name of Idaho senator Frank Church, a champion of the Wilderness Act, was added in 1984) is not the fortress of solitude that it might have been. But outside of Alaska, few parts of the National Wilderness Preservation System are.

The act exempts the managing agencies if they need motorized devices to do their jobs—if they have to deploy helicopters to rescue a hiker or to fight a fire, say. But the law says the exceptions must be “as necessary to meet minimum requirements for the administration of the area.” When scientists seek permission to conduct studies, the agency interprets “minimum requirements” to mean that the studies should be performed with as little mechanization as possible. Experiments are frowned upon, because the wilderness is supposed to be left alone—“untrammeled,” the act says, free from human constraint or manipulation.

“The image that comes to mind is that the wilderness is there and that you just go out and use it,” says Ken Wotring, the wilderness coordinator. A Forest Service employee, Wotring is the first and only such coordinator in the Frank’s history. “But there are requirements because of that designation, for management and for science.”

One of the management problems thrives in the Middle Fork, the famous white-water tributary of the Salmon River. As a result of the popularity of rafting, noxious weeds have spread along the river corridor, and recreationists have left their own unwelcome traces in the soil. On a plane chartered by the Forest Service, I fly about 65 miles down the 100-mile length of the Middle Fork. My destination is the Bernard landing strip, where a Forest Service crew is working on weed eradication and human-waste disposal, two responses to threats borne from the outside.

The primary targets of the spraying are spotted knapweed and rush skeleton weed, two exotics from Europe that are common in the rangeland of Idaho and Montana. The state government has listed these species as noxious because cattle and wildlife avoid eating them and because the plants tend to outcompete the native grasses, especially after a fire or grazing has disturbed the soil. The seeds hitchhike into the wilderness on airplane wheels or hikers’ boots, in stock feed, or by various man-made vectors. Seeds may also be blown in or washed in naturally from the lands surrounding the wilderness area.

Keeping spotted knapweed and skeleton weed and a dozen other foreign plants out of the Frank entirely is impossible, however. The agency has decided to focus its efforts on the narrow strips of land lining river corridors, where the invading weeds take hold.

Wotring and I climb into a rubber raft, the pilot taking the oars. We nose into the current, three other craft following behind. Sun pours down on the canyon. Brooding stands of Douglas fir parade

by, followed by open slopes with long ravines and grass so dry it looks baked. We pass a fractured wall of black rock, pierced by pale granite and powdered by yellow-green lichen.

Every few miles along the river corridor the crew members stop and fill the containers of their backpack sprayers. Brandishing wands, they fan out to kill weeds on the grassy banks. The herbicide, a mixture of 2,4-D and Tordon, is dyed blue-green so that treated areas will stand out. According to the “minimum tool” strictures, the spraying of weeds by hand is permissible, but yanking the plants by hand is even better. The Forest Service and the Sierra Club have run float trips on the Salmon River with volunteers who pull out spotted knapweed by its taproot.

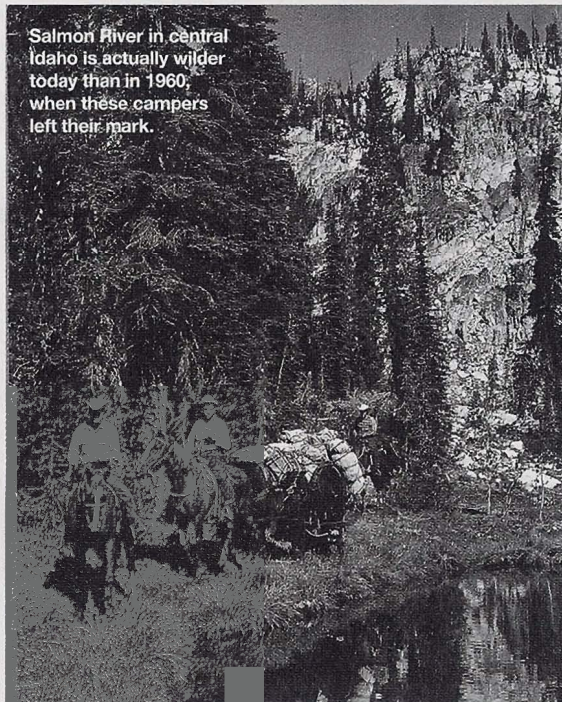
We spend the night at the Survey Creek campsite. A flat-topped bluff stands 200 feet above the water. I walk onto a rocky pinnacle and look down on the murmuring river, where an oarsman steers a blue raft carrying a red-jacketed fly fisherman. The man flicks his line into the wilderness. Meanwhile, across from our campsite, bathers from a large party at another camp are edging into the water. At discreet intervals, float parties pass along the Middle Fork as if they were chained together in an amusement-park ride.

“Wilderness and this river corridor are antithetical,” says Sheri Hughes, the blunt-talking manager of the Middle Fork. When I stop by her office in Challis, a town east of the wilderness, Hughes gives me figures showing that 11,000 people floated the Middle Fork in 2004. A yearly flux of 11,000 visitors who each spend six to eight days rafting in a tight canyon necessarily results in significant amounts of human waste. Hughes hands me a report, **“Better Bathrooms for Boaters,”** prepared for the Interagency Task Force on Human Waste Management, a national group of river managers. The report’s most arresting statistics apply directly to the Middle Fork: **“An average person produces approximately 0.5 pound of feces (moist weight) per day. On just one of the rivers in the study area, which handles 60,000 user days a year, this translates into about 30,000 pounds of human waste that could be left in the canyon.”**

When rafters were few, the riverbanks of the arid West could handle the modest amount of buried waste. The Colorado River was the first to be overwhelmed, according to the report: **“Through the 1960s and 1970s use on the river increased dramatically, and the popular camping beaches and the popular sightseeing stops began to stink. The problem was not just unpleasant odors, it was a serious health risk—one study conducted in 1972 found that over one-half of the river runners through the Grand Canyon experienced gastrointestinal illness.”**

On the Middle Fork in the 1980s, the Forest Service centralized the solid waste in pit toilets and outhouses, but these proved inadequate. Researchers learned that decomposition in the thin riparian soils was slower than they hoped. Moreover, there just wasn’t enough room. **“People were digging into the old pit toilets and finding that the stuff was dry and hadn’t decomposed much,”** said Hughes. **“It was buried too deep. . . . That’s when we said, ‘OK, we’re going to do something different. We’re going to pack it out.’”**

The first take-out toilets were old ammunition cans with watertight screw tops. Lined with plastic bags, the so-called rocket boxes could be reused, but after a while landfills refused to accept the bags of waste. **“So high-tech porta-potties were developed,”** Hughes says. When the river trip is over, the rafters take the sealed cans from the rafts to a Forest Service **“scat machine”** for emptying and cleaning. To follow the process from beginning to end, I later visit the cleaning facility, located outside the wilderness, and find it to be spanking clean, a tiny sewer plant with a fine view of the Salmon.



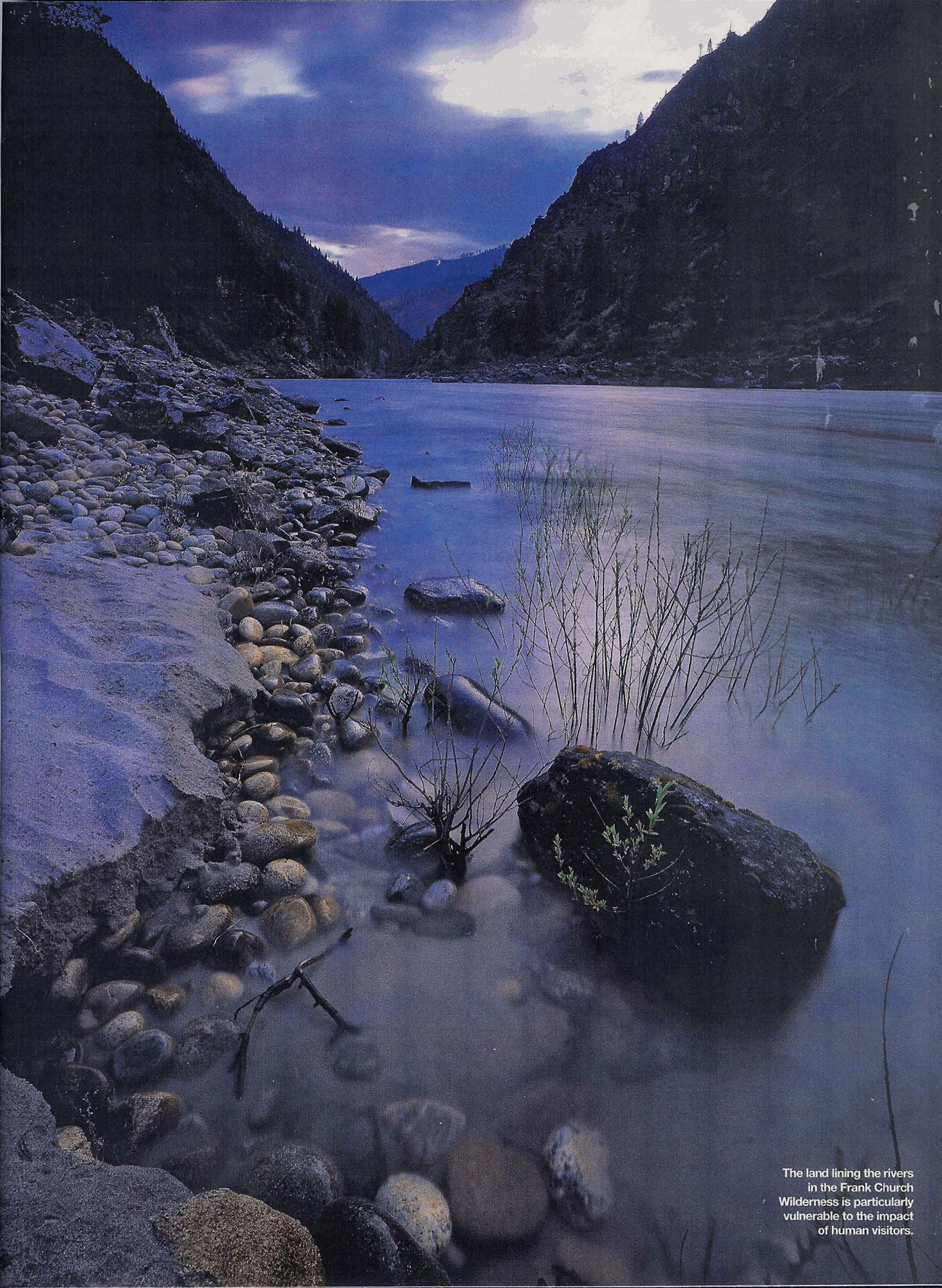
Salmon River in central Idaho is actually wilder today than in 1960, when these campers left their mark.

After spending the night with the weed crew, I leave the workers at the river and backpack up the creek. My destination is the citadel of basic science in the park, the Taylor Ranch Wilderness Field Station, an inholding, or piece of private land, owned by the University of Idaho. Hints of autumn stud the trail. A large wildflower called blazing star flounces its lemon-yellow blossoms. Shrubs have turned red, and the blue berries on the elderberry bushes are reduced to bright seeds in copious bear scat. There is a whiff of smoke, like leaves burning, and the haze of sun. In mid-August the

wildfires pestering the Frank Church Wilderness are too far away to be worrisome, but a month afterward parts of this trail will be aflame, as a lightning-sparked fire leaps the Middle Fork and ascends to the Crags.

I cover seven miles in good time. The landscape opens up. Three creeks converge on what looks like a golf course but is actually the irrigated greenery of the Taylor Ranch pasture and the adjacent airstrip. An old hay rake stands in the pasture, and mules graze near some rustic cabins. Tucked out of sight, a satellite dish beams data and e-mail from various research projects.

The language of the Wilderness Act describes man as a **“visitor who does not remain”**; Jim and Holly Akenson, wildlife biologists with an exemption, live at the property year-round. Their commitment to wilderness is as fervent as any I have come across, but it pays tribute to the historical presence of human beings, from the original residents, whom the pioneers called Sheep Eaters, to the gold miners of the late 19th century, to the ranchers who strung telephone wire



The land lining the rivers in the Frank Church Wilderness is particularly vulnerable to the impact of human visitors.

along the creeks in the 20th century, to big-game hunters who used Taylor Ranch as a base before the university acquired it and turned it into a biological field station.

Taylor Ranch lies at the heart of what its Web site describes as "a large intact ecosystem" bearing "a full complement of native large carnivores, including gray wolf, cougar, black bear, lynx, bobcat, coyote, wolverine, fisher, and otter." Jim and Holly Akenson have spent two decades tracking and observing the critters in their natural state. The Akensons' research style is now being overshadowed by more abstract kinds of studies, which hinge on remote sensing and computer modeling of ecological and environmental processes.

Big Creek and the upper tributaries of the Middle Fork provide the best spawning habitat remaining in Idaho for the severely depleted Pacific salmon. The silver, or coho, salmon were declared extinct in the Snake River, and the annual returns of sockeye salmon can be counted in the single digits. The chinook, or king, salmon, which are being supplemented by hatchery stocks, come back to the Salmon River system in the tens of thousands, whereas they used to run in the millions. Downstream dams are the major barrier, external forces exerting their influence hundreds of miles from the wilderness.

If salmon are going to be restored to the rivers of the Northwest, as mandated by the Endangered Species Act, scientists will have to understand where the fish do best. Spawning habitat seems to be optimal in parts of the Frank Church Wilderness, and if these conditions can be described and quantified, they might be offered as a prescription for ailing salmon elsewhere.

A biologist from the National Oceanic and Atmospheric Administration is working on a project to tag juvenile chinook salmon at Big Creek with microchips that are scanned like supermarket bar codes when the little fish pass detectors in the stream. That allows

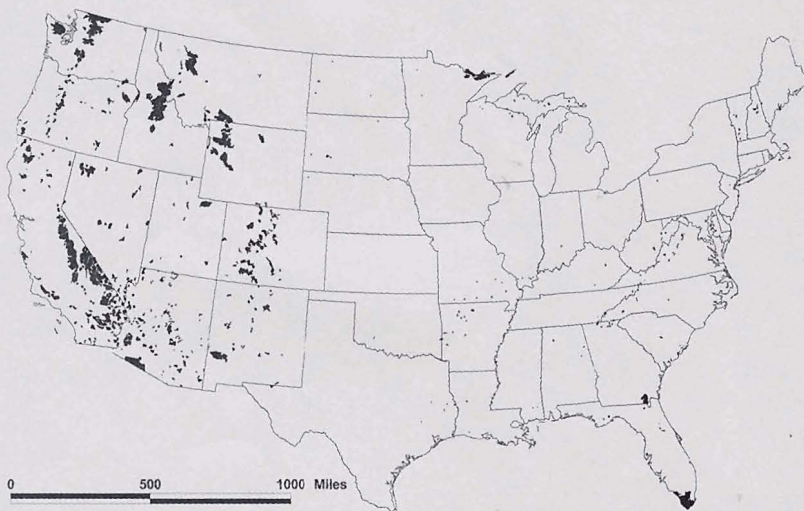
researchers to trace individual salmon during the first critical year before they head downstream 750 miles to the Pacific Ocean. The information can then be uploaded from the creek to the Internet, for real-time remote tracking.

Such work wouldn't be permitted outside the boundaries of the ranch. Ed Krumpe, a professor of wilderness management at the University of Idaho, says: "The Forest Service has a paranoia about doing science in wilderness. The FS policy is to do it elsewhere if you can. If you want to study a particular animal, they say, there's probably some other population elsewhere. If you want to contact people in the wilderness, say, do a survey of fly fishermen, they're negative. . . . It's a purist argument. You err on the side of wilderness so that you don't screw something up. Is it clear that there should be this prohibition?"

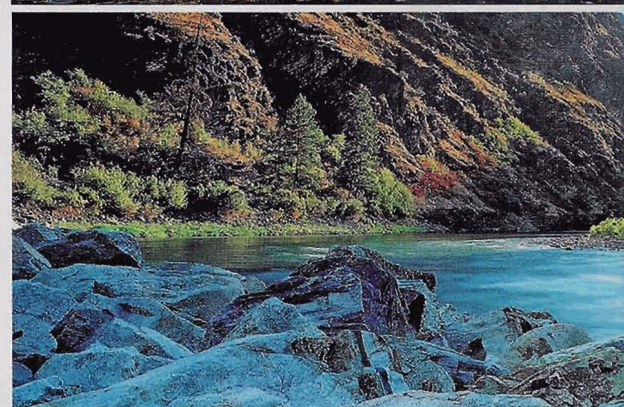
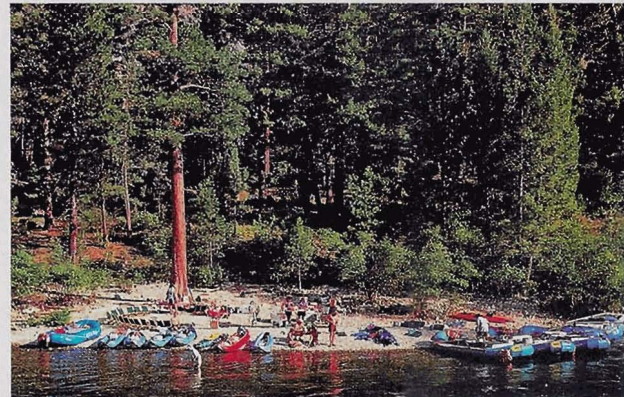
When I speak with Holly Akenson, she too is impatient with the logistical obstacles. In her opinion the biological information buried in the Frank is so precious that it should be mined for the whole nation. The value of wilderness, she says almost defiantly, "is to do research to better humanity."

My travels in the Frank end on the doorstep of an animal I never saw—the gray wolf.

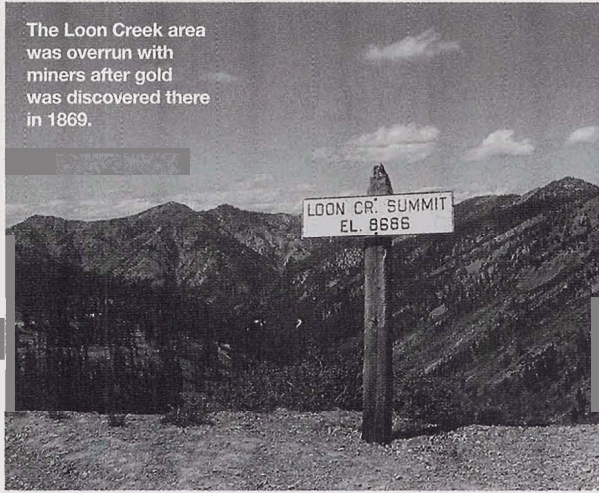
Ten years ago central Idaho had no wolves except for the occasional transient. The animals had all been extirpated decades earlier. In 1995 and '96 a total of 35 wolves were artificially introduced to the Frank, where they were least likely to run afoul of people. Since then, the local wolf population has grown tenfold. Judging from aerial surveys, sporadic reports by hunters and ranchers, and signals from the few animals wearing radio collars, state wildlife biologists think there are now more than 500 wolves here. The packs have spread beyond the wilderness boundary and also beyond the



The map shows federally protected wilderness areas. Although many additional wild public lands exist, they lack federal protection. In 1960, the writer Wallace Stegner wrote to a federal commission: "We simply need that wild country available to us, even if we never do more than drive to its edge and look in. For it can be a means of reassuring ourselves of our sanity as creatures, a part of the geography of hope."



The Loon Creek area was overrun with miners after gold was discovered there in 1869.



National Forest buffer zones.

"This central Idaho system is much bigger than Yellowstone for wolves," Dick Wenger, a Forest Service biologist, tells me. "We're up to 40 recognized packs, plus another 15, inside the wilderness areas. The Frank is fully occupied by wolf packs, but it's the least studied because of logistics."

Technically the state is responsible for managing wildlife, while the Forest Service manages only the wildlife habitat. Idaho wants to control the burgeoning wolves because the animals, though ranked as an endangered species, may have begun to make a dent in the elk population within the Frank and also in some of the cattle herds outside. The losses bother local hunters and ranchers.

The Idaho Department of Fish and Game has proposed using helicopters to help study the wolf population in the Frank. After locating and chasing down a pack, an aerial sharpshooter would anesthetize an animal with a dart gun. Then the helicopter would land, and a biologist would fit a radio collar onto the drugged wolf. Thereafter the pack's movements and territory would be on the map, just as the packs outside the wilderness are monitored.

Whatever the pros and cons of the operation, it can't go forward without Forest Service permission. Although the agency can't prohibit the state from flying over, it can deny the helicopters permission to land. Ken Wotring says that the Frank "doesn't need collared wolves." He argues that the number of packs is beside the point as long as the wolves are doing well. Wenger wonders

whether the state could research wolf behavior just as efficiently by studying the packs outside the wilderness.

Steve Nadeau, a biologist who manages the large-carnivore program for the Idaho department, ticks off reasons why helicopters ought to be used. "To get in there [on the ground] and place radios on wolves is at times overwhelming," he says. "When we get a hot, fresh report, we fly in to an airstrip or

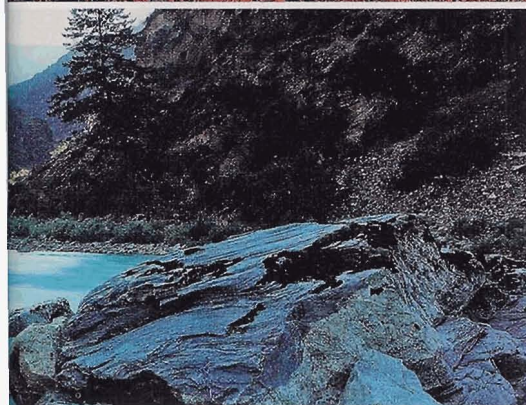
hike in with horses. But it's difficult. You've got six traps and a hundred pounds in your pack. By the time you find the wolves, you've got only a day left before you're out of food.

"We're up there anyway doing our big-game counts," he adds. "The helicopters would have less impact than if we used horses. We might land 10 times in a winter. The tracks in the snow would blow away. Nobody's there to see them anyway. Does the tree falling in the forest make a sound when no one's there?"

The more Nadeau protests, the more I am reminded of the original intentions of the Wilderness Act. Aldo Leopold, Bob Marshall, Howard Zahniser, and other 20th-century preservationists were believers in science, but they would have relished the state's predicament. To them, it was proper to be humbled by what isn't known about the wilderness. In the true scale of nature, wilderness was big and fierce, and people were weak and small.

"It's such a huge chunk of land," Nadeau says in frustration. "Are there things going on in there that are different from in the roaded forests? We don't know. We should be trying to find out." ■

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The Middle Fork of the Salmon River (bottom left) is favored for guided rafting tours (top left). The Bighorn Crags (above) is another popular destination. Middle Fork visitors must dispose of their waste at the North Fork scat station (right); after a two-minute processing cycle, the waste is pumped into sewage lagoons.

