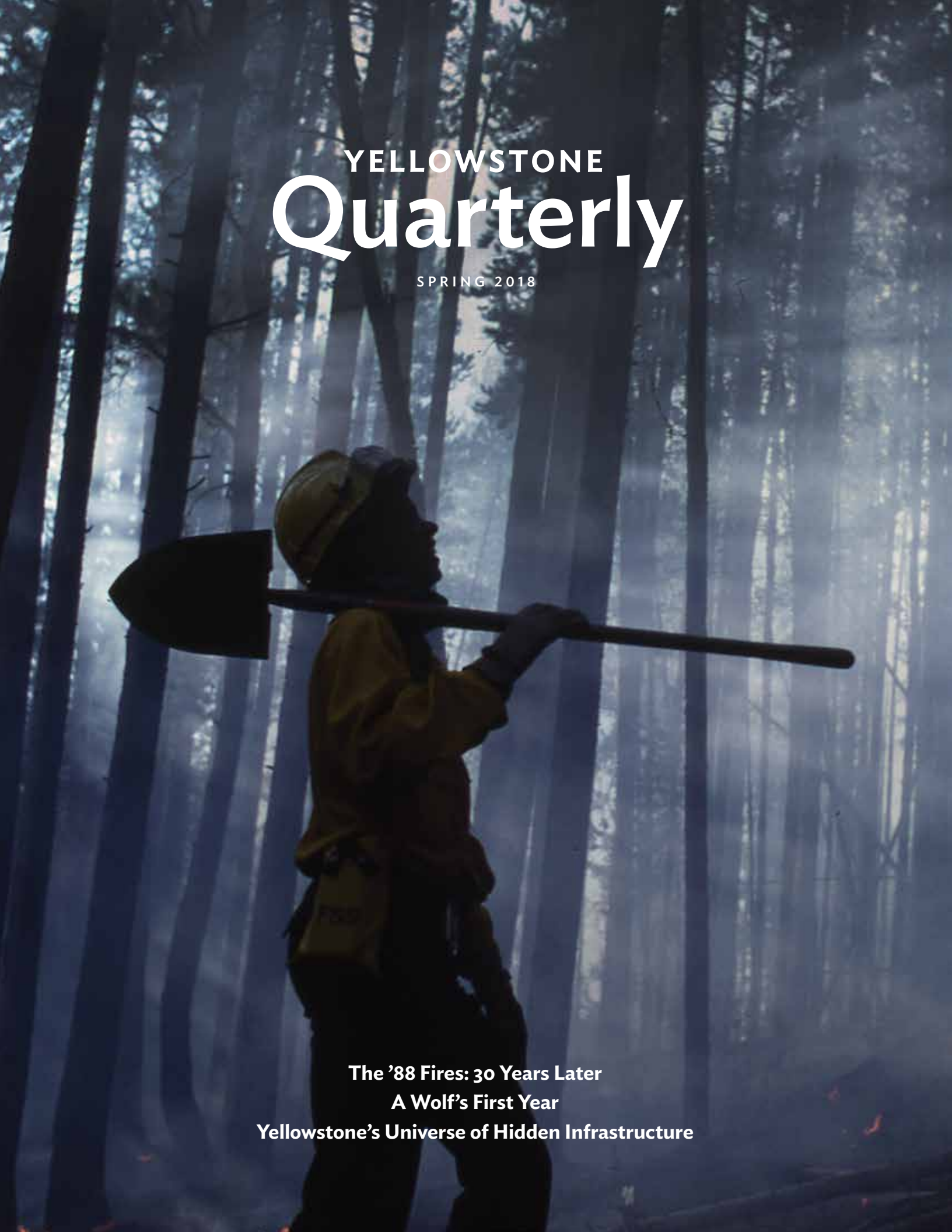

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The ’88 Fires: 30 Years Later

A Wolf’s First Year

Yellowstone’s Universe of Hidden Infrastructure

By Stephen Camelio

The ’88 Fires: 30 Years Later

“It was impressive.” That ultimate understatement about the 1988 fires comes from Roy Renkin, who fought fires in Yellowstone while in college before spending the last 40 years in the park as a vegetation management specialist.

Renkin spent much of the summer of 1988 either flying above the flames or inspecting the plants right in front of them. "I hadn't seen anything like it and haven't since," he adds.

Not many had. The fires in the Greater Yellowstone Ecosystem that year that burned 1.4 million acres, including 793,880 acres of the park, were the result of a perfect storm of environmental and human factors. You name it: whatever Mother Nature needed to create a large-scale fire event was present during that summer 30 years ago.

THE PAST

Unusually high winds. Drought conditions. Heavy, dry, fuel accumulations. Low humidity at night. A higher-than-usual number of fires caused by lightning—39 fires compared to the average yearly total of 26—plus 6 fires caused by humans. Another 5 fires originated outside and burned into the park. With all these factors in play, it's easy to see why it took what was at the time the largest fire fighting effort in U.S. history to battle these blazes. Appropriately, the environment that created this inferno also put it out when snow blanketed the park during the second week of September.

During and shortly after the fires, as images of one of the nation's most revered natural landscapes being burned to a crisp captivated the world, National Park Service (NPS) officials, including those at Yellowstone, were heavily criticized in the press and by politicians for basically letting nature take its course.

Even President Ronald Reagan weighed in, calling what everyone dubbed the "Let It Burn" fire policy "a cockamamie idea." Still, while the public and un-initiated were taken aback by the size of the fire, not everyone was surprised.

Renowned Yellowstone naturalist Paul Schullery noted that only months before the fires of 1988, fire ecologist Dr. William Romme and NPS plant ecologist Dr. Don Despain had reported that the Yellowstone area historically "involved many small fires interspersed every 200–400 years by massive fires that swept across large portions of the park." Romme and Despain concluded that the last major burn had happened in the 1730s, meaning Yellowstone was ready for "another major burning cycle."

It didn't take long for the basis of the park's fire policy, which had been in place since the early 1970s to "maintain the ecological role of fire by allowing natural processes to occur with a minimum of human influence," to be proven right—as anyone who came to Yellowstone would soon see.

"There was a lot of rhetoric about the park never being the same," Renkin remembers. "But the people in the park who understood fire history had expectations about what would happen next."

These folks knew, as the public would soon learn, that the positive results of fire in Yellowstone include opening up the serotinous cones of the lodgepole pines, allowing for new trees to grow. Plus, fire opens up forest canopies to allow new plant communities to flourish. The burn also served to limit trees in grasslands and released nutrients from fallen trees and dead vegetation, which increased the productivity of soil.

Some folks theorized that such an all-encompassing burn would create a homogenizing effect, but the landscape of

Just as the fires continue to make a lasting impression on visitors, they also remain integral to fire management in the park. Though he came to Yellowstone long after the fires, Cataldo says he quickly got to know all about '88 because, though the fire was 20-plus years old, it still determined how new fires were fought.

"One of the first things we do when we get a new fire start is look at the fire history map of the park," he says. "When I first got here, the fire scar left behind from the '88 fires was treated as a really dependable, natural firebreak for us."

That is until 2016, when close to 90 percent of the 70,000 acres that burned in the park were inside the '88 fire scar. "For us, that has huge management implications because we have almost 800,000 acres of '88 fire scar in the park," Cataldo says. "That's almost a million acres of fuel that is now somewhat in play, as far as new fires go."

THE FUTURE

In 2017, smoke filled the skies from Seattle south to Los Angeles and from western Montana down to Kansas, Oklahoma, and Texas. In total, around 9.1 million acres burned in the U.S. during the calendar year, and with many places experiencing their hottest and driest summer on record, the discussion of forest fires has become intrinsically linked to conversations about climate change.

Yellowstone quickly returned to its familiar diverse makeup, and research showed that the post-fire communities were "similar in composition to nearby forests that did not burn."

It was also noted the animals in the park were largely unaffected by the flames, and many—save the moose which prefers old growth forests—benefited after the fact. The burn created new feeding opportunities for birds and grazing animals as well as the species that prey on them.

THE PRESENT

In 1989, a then-record 2.7 visitors flocked to Yellowstone to learn how the fire had affected the park, and learning more about the area's ecology actually increased the public's interest in the park.

"The '88 fire was a reaffirmation that fire was what this landscape needed, and it was a great opportunity to get that message out," says John Cataldo, Yellowstone's fire management officer who came to the park in 2011 from an interagency hotshot crew in northern California.

"Today, we get a more informed visitor in terms of fire ecology, and we still get a lot of good questions about keeping fire on the landscape—what it provides to the ecosystem, and how it functions in a natural environment."

So far, in Yellowstone, where average temperatures are higher now than they were 50 years ago, warmer weather hasn't translated to more and larger fires. "In the seven years I've been here we had a 70,000-acre fire season in 2016, but we also had a year with half an acre of fire, and a year with a little less than one acre of fire," Cataldo says. "It's not like we can draw any direct lines right now between climate change and what's going on with fire in Yellowstone."

But others are making the connection. In a 2016 study published in the *Proceedings of the National Academy of Sciences*, researchers found that the total area burned in the western United States over the past 33 years was double the size it would have been without any human-caused warming.

Extrapolating from current and recent trends of warmer temperatures and longer fire seasons, Dr. Romme theorizes that the 1988 fires were perhaps the last "historical" fires in Yellowstone—meaning his and Dr. Despain's timeline that predicted the '88 fires 30 years ago may already be out of date.

"The science shows clearly that large fires will likely be more frequent in the 21st century, which means the extensive old forests of previous centuries may be largely replaced by younger forests, or even woodlands and non-forest vegetation," Romme says. "Yellowstone will still be a special place, with geysers and waterfalls and wildlife, but the forests will likely not be what 20th-century visitors experienced."

For his part, Renkin also isn't sold on the fact that warmer weather will necessarily create huge forest fires. "Weather and topography are two elements of the fire triangle that determine fire behavior, but let's not forget about fuel," he says. "Fuel levels are dynamic and they change, so how, when, and why these forests burn will play just as big a role as climate."

Also, there have been changes to the fire policy since 1988, with stricter limits set on when, where, and how natural fires can burn. But it remains to be seen how climate change will affect the overall management strategy the park has in place to stay out of nature's way unless it endangers human lives or livelihoods along with cultural or historical landmarks.

"So long as everyone is safe, if 80 percent of the park is covered in lodgepole pine versus 65 percent, that's not as important as the wilderness aspect of Yellowstone," Cataldo says. "The plants and animal communities have been adapting and evolving for a millennia to different compositions of vegetation, so as long as we keep Yellowstone wild, we'll be doing the right thing."

Stephen Camelio is a freelance writer living in Bozeman, Montana. His work has appeared in *Men's Journal*, *Runner's World*, *Field & Stream*, and *Fly Rod & Reel*.

Colleen Curry
Museum Curator

Colleen Curry, museum curator for the Yellowstone Heritage and Research Center (HRC), got her start cataloging Civil War artifacts at Gettysburg College in Pennsylvania. Now in her 15th year at Yellowstone, we recently sat down with her to learn more about her role maintaining one of the "largest museum collections in the National Park Service."

What is the purpose of the HRC?
The HRC is a collection, storage, and research center for Yellowstone—one of the only depositories of its kind. Our mission is threefold: We're here to document the park's natural resources, preserve the resources, and make them accessible to the public. It serves as an invaluable resource for National Park Service staff, researchers, school groups, and the general public.

What is your role at the HRC?
As museum curator, I oversee the museum collections, the archives, and the research library. I also serve as the facility manager for the building. My day-to-day duties might involve researching items in the collection—sort of like detective work—or giving tours of the facility. I create reports that show how much cataloging we completed throughout the year, for example, or how many researchers accessed the collections. We also rely heavily on our volunteers here, and I work with them on a variety of projects.

Describe the archives collection and the library. What might someone find there?
The archives have everything from early superintendent reports to army records, things like soldier station logs and civilian scout diaries—all of which offer valuable information about the early days of the park. The museum collections encompass over 700,000 objects. This includes 21 of Thomas Moran's field sketches from the 1871 expedition, and 150 wolf skulls from the wolves that were reintroduced in '95 and '96. The research library contains information on almost anything you'd want to know about Yellowstone, like dissertations, scientific articles, newspaper clippings, and digital materials.

What is your favorite item in the collection?
Among my favorite items are the travertine-coated specimens that were made in the early days of the park at Mammoth Hot Springs. People on a stagecoach tour could buy a souvenir and put it on coating racks, and after five days the object would be completely coated in travertine. I think those are really interesting because they show something we never would have allowed today, but represent a link to how things used to be. It also shows the amazing rate of deposition at the Mammoth Terraces!

How does Yellowstone Forever help support the HRC?
When you work in a large park competing with natural resources like wolves and grizzlies, it can be hard to obtain funding through government channels. Without the support of Yellowstone Forever, we wouldn't be here. We were able to get the funds to build the HRC but not finish it, so Yellowstone Forever helped furnish the interior, from the museum exhibit cases to our desks. Yellowstone Forever funds our research library, which includes paying for the salaries of two full-time librarians. They've supported preservation projects like rehousing the natural history specimens and digitizing the collections so the public can access them remotely. Throughout the years they've also purchased museum items—such as a couple of paintings by very early artists.

How can the general public visit the HRC?
The building itself is open to the public Monday through Friday. People can come and look at the exhibits and access the materials in the research library, though the museum collection is available by appointment only. We also provide public tours Memorial Day through Labor Day that give a behind-the-scenes look at the facility—including the original Moran sketches and the wolf skulls. The tours typically run on Wednesdays, but you can find the most up-to-date information in the park newspaper and on our website.

To learn more about the Heritage and Research Center, including volunteer opportunities, contact Colleen at colleen_curry@nps.gov or visit nps.gov/yell.