

“Fireproof”

By: Molly Mancini

Honors GNED 400  
June 28th, 2019

*“I have neither given nor received help on this work, nor am I aware of any infraction of the Honor Code.”*

Eleanor Robinson was not like most children her age. Unlike most of the other girls in her class who were fascinated with baby dolls and playing house, Eleanor belonged to the outdoors. She was born in Cody, Wyoming and after two short years living there, her parents moved her small family to Gardiner, Montana. Her parents were wildlife biologists who worked for the National Park Service. As such, Elle frequented the park quite often as a child. It was a normal occurrence for her to wake up at 5 a.m. to go wildlife watching in the park. She would peer through her small pink binoculars, along with her parents every weekend, quietly searching for any creatures in the park. She thought this was what every child did. Her mother was particularly interested in the plant life and biodiversity available in Yellowstone. They would often go on hikes together where they would observe the plant life in its natural habitat. Her father, on the other hand, was more interested in the wildlife of the park. He, along with his research team, would keep tabs on the elk and bison populations within the park.

Despite her parent's background in biology, Eleanor had other interests. Elle was fascinated with fire. This was most likely due to the increased number of fires in the West as compared to other parts of North America. She had grown up with them all her life and had seen their effects firsthand. She even remembered the first time they were evacuated because of the approaching flames. It had been a normal day, until her parents came home rushing through their front door. They explained to Eleanor, who was 5 at the time, that she must pack all of her things as an approaching wildfire had made a sudden turn and was heading straight for them. Eleanor packed all of her things but then realized she had left her favorite teddy bear outside in her clubhouse in the woods. Like most children in her situation, she was completely devastated. She decided, against her better judgment, to run to the clubhouse to grab her bear. Carefully

sneaking through her front door and past her parents, Elle made a mad dash, sprinting through the woods surrounding her house to the clubhouse. She could smell the smoke as she ran through the wood, the scent filling her lungs and nose. Eleanor coughed. "I'm almost there," she thought to herself. In the distance she heard her mother and father calling her name, desperately calling for their lost child. She sprinted even harder nearing the clubhouse. She could see the flames licking at the edge of the forest. Eleanor opened the clubhouse door and ran inside. Grabbing the bear and a couple of her drawings, Eleanor packed her small Barbie backpack and got ready to leave.

That's when all hell seemed to break loose. The fire began to engulf the clubhouse and Elle screamed. She grabbed her bag and ran out of the clubhouse. She sprinted with all of her might as the forest around her burned. She screamed as the trees around her began to crackle and fall consumed by flames. Suddenly, without warning, a large pine fell directly in front of Eleanor and a branch hit her square in the head, rendering her unconscious. There she lay, on the forest floor, unable to call for help.

Luckily, her father had run into the forest to find her. He scooped her up from the forest floor and ran to safety as trees burned all around them. Eleanor walked away virtually unscathed. The doctors were so surprised as she had no visible burns or lasting effects from the fire. She believed that she was fireproof. As such, Eleanor became somewhat of a pyromaniac. She constantly lit matches, but unlike the teenage arsonists that plagued her local community, Elle didn't light fires to watch them burn and do damage. She wanted to know how to best put the fires out to prevent these kinds of problems from happening to more people.

College did not offer a program in fire management, so she settled for an environmental science major and in her spare time, she was a volunteer firefighter. She faced some criticism because she was female. Some of her superiors at the volunteer firefighter program felt that she wasn't strong enough, but Eleanor did not let that discourage her. At school, she excelled in her courses involving fire and its effects on the ecosystem. She was at the top of her class. After graduating, she immediately became a fully-fledged firefighter and opted to work in Yellowstone National Park as it was her favorite place to be. Making a difference in the fire containment in her own backyard made the most sense.

Her first summer fighting fires was in 1987. It was a relatively normal year for the fires except for the park was becoming increasingly dry. The biologists were becoming increasingly concerned as the next year could have problems because of the increase of dry plants and soil. They were right to be concerned. Nineteen eighty-eight brought the worst fires Yellowstone has ever seen.

The fire was spreading quickly. Flames jumped from tree to tree, inching closer and closer to the Old Faithful Inn. It had come to the point where the park had decided to fight the rising flames that were closing in on the well-known attraction. Naturally occurring fires, like “lightning-ignited fires” were allowed “to burn” within the park as the fires would burn dead vegetation, and thus allow for the creation of a new ecosystem ("Fire Management", 2018). Despite Yellowstone National Park’s stance regarding fire management, they decided to intervene in this case as the fires were starting to cause damage to human property and could potentially harm human lives.

Elle, already sweating in all of her gear, used the nearby fire hose in an attempt to put out the flames. Rather than trying to spray the fire, which was futile at this point, she and some of the other firefighters had moved on to spraying down the buildings. The logic was that should the fire pick up, and the wind carry the flames to the buildings, at least the buildings would be wet and would be less likely to catch fire. This was only her second year fighting fires in the park. Still considered a rookie, she was just starting to get the hang of it. At the age of 23, she was the youngest member of her Squad and the youngest of all of the other firefighters trying to fight the flames. She was afraid, but she just wanted to help save the park.

It had started with the Storm Creek Fire. One strike of lightning ignited the fire, destroying hundreds of thousands of acres as it spread across the vast wilderness that was Yellowstone National Park. Then, in rapid succession over a period of about two weeks, a series of fires broke out across Yellowstone National Park. The largest fires were named Fan, North Fork, Clover-Mist, Hellroaring, Storm Creek, Mink, Snake, and Huck. They grew so large they were no longer fires but “complexes,” according to a 1994 report issued by the U.S. Department of the Interior. During the summer of 1988, the natural fires destroyed 683,000 of the park’s 2.2 million acres and about 1.2 million acres total within the greater Yellowstone ecosystem (Whipple, 2015).

Her long, dirty-blonde hair was thrown up into a bun on the top of her head, underneath her helmet. Flames danced around in the forest as she did her best to combat them. Somewhere overhead a helicopter flew by, spraying water from above in a desperate attempt to quench the fire's thirst. Days went by and Eleanor continued in vain to try and fight the fires, along with hundreds of other firefighters.

Weeks passed and Eleanor was physically and emotionally drained. At this point, the fires had raged out of control. Human lives were in jeopardy and the involvement of hundreds of firemen was doing little to stop the advancing blaze. Rick Gale, a commander on the fires “remembers telling higher-ups that fighting the fires head-on was futile. The best option was to play defense, protect buildings and people, and otherwise stay out of the way” (Stark, 2003).

Much of the press covering the fires was often uninformed and uneducated about the effects of fire in the park. The *New York Times* report noted, “stretches of charred, lifeless landscape left by the months of fires”. Due to the increase in coverage and limited time constraints for these news outlets to post their stories, they made some jarring mistakes in their reports. For example, on July 21, 1988, the Yellowstone National Park abandoned its policy of letting the fires burn naturally without containment and started an effort to extinguish the flames. However, the *New York Times* reported in September that the fires that remained were allowed to burn without interference, in accordance with the old Yellowstone policy. Also, on September 10, the *New York Times* wrote a report expressing criticism on the Wyoming senators, Alan Simpson and Malcolm Wallop, regarding Yellowstone’s natural burn policy even though the policy had been discontinued to protect the public since July. Perhaps the biggest miscommunication of information came when ABC television held an interview discussing fire management with “Stanley Mott” the director of the National Park Service at the time. The only problem, it seemed, was that the director National Park Service was actually William Penn Mott. ABC had actually interviewed a tourist, who was just there to visit the park (Whipple, 2015). The blatant mistakes in reporting led to more outrage among the American public and confusion on what was actually being done to stop the fires.

Although it may appear as the Great Yellowstone Fire of 1988 was devastating to the wildlife populations within the park, wildfires typically only cause harm and death to a small portion of the wildlife population. The fires of 1988 killed about “1 percent of the area’s elk population” (Singer and Schullery 1989). ((Lyon, Huff, Hooper, Telfer, Schreiner & Smith, 2000.) John Varley, Yellowstone's research chief even states "You're going to get tired of my saying this, but the fires will actually have a positive impact on the animals" ("Yellowstone Fires Killed”, 1988). “About 32,000 elk, 2,700 bison and 2,000 mule deer were roaming the park when the fires started. The deaths of about 50 elk, four bison and several mule deer have been tied directly to the fire. Officials have also found five dead moose and one dead brown bear.” ("Yellowstone Fires Killed”, 1988). Given that Yellowstone is home to over 200 species of animals and “ is home to the largest concentration of mammals” in the continental United States, much of the wildlife was able to migrate away from the oncoming fires (“Mammals”, 2019).

After the 1988 fires, Eleanor rose in the ranks of the fire station as a direct result of her bravery and ingenuity with fighting the fires. Ten years later, after fighting many fires and observing fire activities through the park, Elle decided it was time for a change. She applied for a job with the Fire Management Service at the park and she got it. After years of fighting the fires first hand, she was now going to use her ecological background to monitor the effects and help to better manage the fires.

After the fires of 1988, fire policy was reviewed and after careful evaluation, it was concluded that the fire management policies were sound. The forests would regrow and ecosystem would thrive again. After conducting a study that evaluated the forest density, “in many cases, the seedling density is greater than the original stand density," said Monica Turner

of the Oak Ridge National Laboratory. In fact, “the number of established seedlings is eight times as large as the original number of trees” as lodgepole pine cones open during extreme heat, which leads to more seeds being dispersed (Whipple, 1993).

In an average year, approximately 27 fires are ignited in Yellowstone by lightning. Seventy-five percent of fires in the park never reach more than 0.25 acres in size. The park is required by federal law to protect human life as well, as the approximately 2% of Yellowstone’s 2.2 million acres that are considered developed, from the threat of fire (“Fire”, 2018).

Eleanor, now in her new position within the Fire Management Sector, uses her knowledge of different vegetation communities as indicators of fuel load, dominant vegetation, and time since the last fire or other disturbance. With this knowledge, she is able to tell when a fire last occurred, as well as how a fire would behave if it were to encounter this area (“Fire”, 2018). With this position, she has been able to help plan and implement evacuations by predicting how a fire will spread, saving hundreds of lives.

After her time both as a firefighter and as an ecologist for the Fire Management sector, Elle, like many scientists including Monica Turner, believe that fire is helping to diversify Yellowstone’s landscape. In Monica’s study involving the aftermath of the 1988 fire, an area view of the park “showed a mosaic landscape pattern, where uniquely shaped patches of severely burned areas, lightly burned areas, and unburned areas were neighbors. This meant seeds from unburned forests could make their way to barren areas and in the years to come grow up into adult trees to replace those that had been burned” (Turner, 1994). The fires were not only helping



to create new ecosystems within the park, they were also helping to make the soil better by allowing the nutrients from the now burned trees to seep back into the ground.

Some locals have differing opinions however. A prominent rancher named Mr. Johnson who lives in Gardiner was quoted as saying that “over ten thousand elk died as a result of the fires”. This ultimately hurt his business as Mr. Johnson runs Elk Hunting Enterprise where he takes tourists to shoot the animals. A local photographer was also quoted as saying “the park did the wrong thing by letting those fires burn.” He then went on to explain that the fires came dangerously close to his own home and he and his family were forced to evacuate. He felt that the park had put his family in danger by not trying to stop the fires sooner. Ultimately, Dan, the local photographer, returned with his family to their home. His house had not been consumed by the flames due to the diligent work of many fire firefighters. He commended the firefighters for saving his home, but he remained upset with the fire policies in place.

Eleanor continues to debate the management of all fires within the park. Although it does help to diversify the ecosystem, it can also cause harm to those who live around the park and those visiting. The current policy for fire management states as follows: “All fires burning in natural or landscaped vegetation will be considered wildland fires. Wildland fire is defined as any non-structure fire that occurs in the wildland. All wildland fires will be effectively managed through the application of the appropriate strategic and tactical management options. These options will be selected after comprehensive consideration of firefighter and public safety, the resource values to be protected” (Bomar, 2008). These costs include both monetary value as well as the cost of human labor and potential loss of life due to the fires. Despite the Park’s stance, many people within the community feel that it is dangerous to allow these fires to burn.

If left up to Eleanor, the fires would be allowed to burn so that they can help to keep the park alive and thrive with new forest growth, but not to the extent where it harms human lives or burns down the entire park. Other locals argue that the fires should be stopped entirely because of the potential harm to property and human lives. Since being added to the Fire Management Sector, Elle had assisted in the creation of education programs to explain to the local communities surrounding Yellowstone how important fire truly is. Educating the public has not only helped the vegetation to grow, but has also helped save lives by informing the public on the importance of evacuation planning and what to do in the event of a wildfire. Despite these education programs, people's lives are still in danger every single time Yellowstone allows a fire to burn. The question still remains: should these fires be left to burn to help Yellowstone's ecosystem flourish, or should they be stopped immediately to prevent harm to human life or property damage?

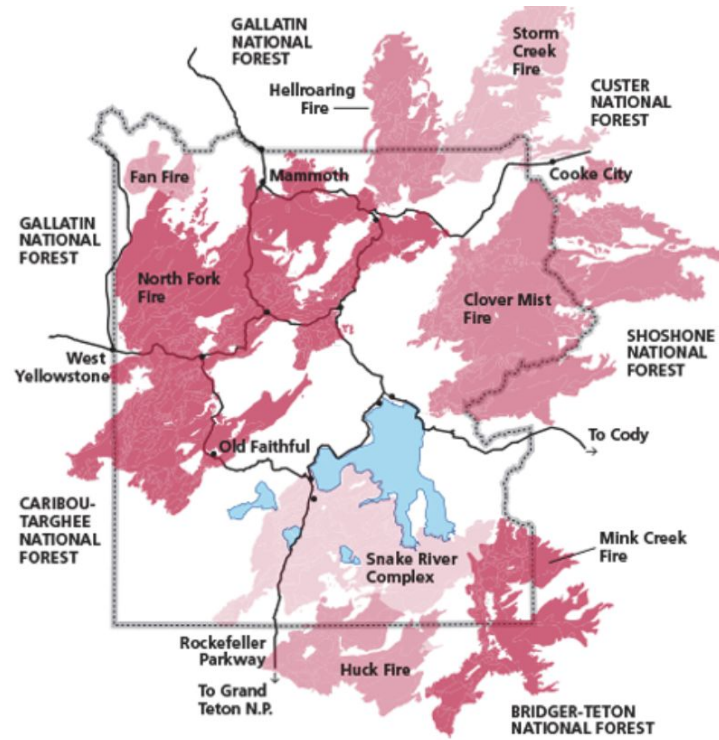
## The 1988 Fires



NPS Photo



(The National Parks Service)



*This map of fires from 1988 uses colors only to help you see fire boundaries. Colors do not indicate anything else.*

NPS





**Left Image:** Fire-burned forest right after the 1988 fires. NPS/Jim Peaco  
**Right Image:** Regrowth and pond in the same location in 1989. NPS/Jim Peaco



Mosaic fire pattern in Yellowstone National Park.  
 NPS Photo / Jim Peaco



(The National Parks Service)





Mountain in Cooke City burned by a recent fire (Molly Mancini).

## Works Cited

- Bomar, Mary A. "WF: Director's Order #18: Wildland Fire Management." *National Parks Service*, U.S. Department of the Interior, 16 Jan. 2008,  
[www.nps.gov/subjects/fire/director-order-18-wildland-fire-management.htm](http://www.nps.gov/subjects/fire/director-order-18-wildland-fire-management.htm).
- "Fire." *National Parks Service*, U.S. Department of the Interior, 17 Dec. 2018,  
[www.nps.gov/yell/learn/nature/fire.htm](http://www.nps.gov/yell/learn/nature/fire.htm).
- "Fire Management." *National Parks Service*, U.S. Department of the Interior, 17 Dec. 2018,  
[www.nps.gov/yell/learn/management/fire-management.htm](http://www.nps.gov/yell/learn/management/fire-management.htm).
- "Mammals." *National Parks Service*, U.S. Department of the Interior, 2019,  
[www.nps.gov/yell/learn/nature/mammals.htm](http://www.nps.gov/yell/learn/nature/mammals.htm).
- Mike Stark. *A Hellish Day: Yellowstone's 1988 Fires Devoured 165,000 Acres on 'Black Saturday'*. 17 Aug. 2003,  
[billingsgazette.com/news/state-and-regional/wyoming/a-hellish-day-yellowstone-s-fires-devoured-acres-on-black/article\\_24ae148d-5fd0-55d8-88c3-9c02d8426e42.html](http://billingsgazette.com/news/state-and-regional/wyoming/a-hellish-day-yellowstone-s-fires-devoured-acres-on-black/article_24ae148d-5fd0-55d8-88c3-9c02d8426e42.html).
- Lyon, L. Jack, et al. "Wildland Fire in Ecosystems: Effects of Fire on Fauna." *JFSP Synthesis Reports*, 2000, pp. 17–18., doi:10.2737/rmrs-gtr-42-v1.



Whipple, Dan. "Nature Turns Massive Fire at Yellowstone to Its Benefit." *Los Angeles Times*,  
Los Angeles Times, 13 Oct. 1993,  
[www.latimes.com/archives/la-xpm-1993-10-13-mn-45340-story.html](http://www.latimes.com/archives/la-xpm-1993-10-13-mn-45340-story.html).

Whipple, Dan. "Yellowstone Ablaze: The Fires of 1988." *WyoHistory.org*, 27 June 2015,  
[www.wyohistory.org/encyclopedia/yellowstone-ablaze-fires-1988](http://www.wyohistory.org/encyclopedia/yellowstone-ablaze-fires-1988).

Turner, Monica G., et al. "Effects of Fire on Landscape Heterogeneity in Yellowstone National  
Park, Wyoming." *Journal of Vegetation Science*, vol. 5, no. 5, 1994, pp. 731–742.,  
doi:10.2307/3235886.

"Yellowstone Fires Killed Few Animal Park Officials Continue Hunt For Carcasses."  
*DeseretNews.com*, Deseret News, 19 Oct. 1988,  
[www.deseretnews.com/article/21659/YELLOWSTONE-FIRES-KILLED-FEW-ANIMA  
LS.html](http://www.deseretnews.com/article/21659/YELLOWSTONE-FIRES-KILLED-FEW-ANIMALS.html).

## Source Notes

Eleanor is a fictional character created by reading the cited sources above. She is loosely based off of real women who do work in the Fire Management Sector in Yellowstone. These women include Cynthia Worthington, Ellen Frondorf, and Sherry Leis. All of these women work for the National Parks Service and parts of their individual stories could be seen on the National Parks Service website.

“Women in Fire Science: Cynthia Worthington (U.S. National Park Service).” *National Parks Service*, U.S. Department of the Interior,  
[www.nps.gov/articles/women-in-fire-science-cynthia-worthington.htm](http://www.nps.gov/articles/women-in-fire-science-cynthia-worthington.htm).

“Women in Fire Science: Ellen Frondorf (U.S. National Park Service).” *National Parks Service*, +U.S. Department of the Interior,  
[www.nps.gov/articles/women-in-fire-science-ellen-frondorf.htm](http://www.nps.gov/articles/women-in-fire-science-ellen-frondorf.htm).

“Women in Fire Science: Sherry Leis (U.S. National Park Service).” *National Parks Service*, U.S. Department of the Interior,  
[www.nps.gov/articles/women-in-fire-science-sherry-leis.htm](http://www.nps.gov/articles/women-in-fire-science-sherry-leis.htm).

Page 9 contains quotes from stakeholder Mr. Johnson, a local rancher located in Gardiner Montana, and a local photographer named Dan Hartman who we interviewed while visiting his home.