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Examining the History of Forest and Fire Management: A deeper look at how the Milli fire affected the Sisters Oregon community

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By
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Abstract

Forest management is an ever-changing process. With new research and technology, forest management has dramatically changed over the last few decades. In 1995, 16% of the US Forest Service's budget was devoted to firefighting, in 2015 it was more than 50% of the budget, and estimates say that it could be as much as 70% of the budget by the year 2025 (Struzik, 238). This raise in cost is due in part to the lengthening of wildfire season. Over the last 40 years, the average fire season in the US has gone from 23 days long to an average of 116 days (Davis, p. 92). This compilation will review important literature related to forest management, explore fire management based on differing geological areas, assess how forest fires impact communities using the 2017 Milli Fire as an example, and interview professionals in the field of forest and fire management all in hopes to bring awareness, prevention, and increased social responsibility to readers.

Introduction

Wildfire has been a natural part of the world's ecosystem long before humans had the ability or desire to do anything about them. Globally an area the size of New Zealand burns each year, this is about 1% of the world's forest that burns every year (Spilsbury, 2018, p. 5). Over the last few hundred years, human involvement in forest and fire management has dramatically changed the course of wildfires. Over the last 40 years, the average fire season in the US has gone from 23 days long to an average of 116 days (Davis, 2019, p. 92). This in combination with increased population, expansion of dwellings into forested areas, and climate instability has led to a new kind of wildfire that is bigger and more destructive than previous years' wildfires. A Megafire is a fire that burns at least 100,000 acres and over the last three decades, the number of Megafires that occurs each year has been on the rise (TEDx Talks, 2017). This change over time can be attributed to a combination of warmer and dryer climate contributing to less precipitation and enabling more frequent, bigger, and hotter forest fires to occur (Davis, 2019, p. 91-92).

Another reason for this new kind of fire is due to the urban-wildland interface or WUI (Struzik, 2017, P. 3). With a growing population, new homes are being built in places prone to wildfire creating more kindling for a fire when one does occur. In the US about 9% of land area is considered to be WUI with around

39% of all US housing units are in this fire-prone area (Radeloff et al., 2005). This means that when a wildfire happens in these areas it's even more important for it to be dealt with quickly to protect the people and homes that are there. This has led to a rising cost of forest and fire management. In 1995 16% of the US Forest Service's budget was devoted to firefighting, in 2015 it was more than 50% of the budget, and estimates say that it could be as much as 70% of the budget by the year 2025 (Struzik, 2017, p. 238). This compilation will review important literature related to forest management, explore fire management based on differing ecological areas, assess how forest fires impact communities using the 2017 Milli Fire as an example, and interview professionals in the field of forest and fire management all in hopes to bring awareness, prevention, and increased social responsibility to readers.

Literature Review: Forest Management Prescribed Burning

Prescribed burns and forest management are critical aspects of forest health and preservation. Recent research has shown this to be true. An overall theme from some of the research shows how forests have been managed over the past 100 years. In this timeframe, fire management strategy was focused on instantly extinguishing any fires. It can be seen now that this strategy has led to a massive build-up of fuels, creating the potential for larger forest fires later. Over the last 15 years, large wildfires seem more rampant due to poor management years before. The following section will provide an overview of what research literature has shown in the field of forest maintenance in a variety of different areas of the world. Research surveyed forests in the United States, Australia, Spain, Texas, Canada, and a variety of other places.

An article from the Journal of Environmental Management, "The role of prescribed burn associations in the application of prescribed fires in rangeland ecosystems," surveyed people's perceptions and attitudes toward fire management and how changing that could impact prescribed fire strategies being implemented (Toledo, et al., 2013). This study was conducted by a team of researchers out of the Department of Ecosystem Science and Management at Texas A&M University, the Department of Forest Resources and Environmental Conservation at Virginia Tech, and Sonora AgriLife Research Station also at Texas

A&M University. The study was conducted in 12 counties in Texas, made up of groups of four counties in each of three ecoregions, areas with grasslands, savannahs, and those impacted by brush encroachment. A self-administered questionnaire was mailed to 1187 landowners to collect data about landowner attitudes and perceptions toward the use of prescribed fire as a management and restoration tool. Mainly a 7 point Likert-type scale was used in which participants were asked to convey agreement or disagreement with statements about prescribed fire. “Perception of the risk of using fire relative to that of using other woody plant management options, perceived constraints of applying fire including lack of skill, labor, knowledge and equipment, and whether or not they are a member of a PBA (Prescribed Burn Association)” (Toledo, et al., 2013). They found that the reintroduction of fire is essential to restore degraded grassland and savanna ecosystems and to reduce fuel load build-up. The challenge to carrying this out is the perception from landowners to intentionally ignite fires on their land. When they do this, landowners are taking the risk of starting a fire without professional advice. They found that human-influenced changes of fire systems have significantly contributed to “brush encroachment and degradation of many grasslands and savannas” (Toledo, et al., 2013). They emphasize that Prescribed Burn Associations could reduce risk perceptions regarding the use of

prescribed fire and their importance for restoring brush-encroached grasslands and savannas.

Secondly, a team of researchers published an article titled, “Wildfire fuel management: network-based models and optimization of prescribed burning” (Matsypura, et al., 2018). The study was conducted out of the University of Sydney, University of Pittsburgh, and the National Research University Higher School of Economics in Russia. They used mathematical programs and computational experiments with test examples created based on real-life data to try to get an idea of potential fire spread. From this and an overview of the history of wildfires across all continents, Matsypura and their team believe that the intensity and severity of wildfires can be reduced with fuel management activity, particularly with prescribed burning. Prescribed burning has been utilized as fuel treatment more recently in Australia since the 1950s (Boer et al., 2009; McCaw, 2013). They’ve discovered that prescribed burning “decreases fire intensity by reducing fuel levels and disrupting the horizontal and vertical continuity of fuel in the landscape” (Matsypura, et al., 2018). The study described how this method can be supported by numerous other studies. It was also noted that prescribed burning can have a greater impact on things like “maintenance of biodiversity; control of weeds, insects, and diseases; site preparation for tree regeneration and improvements of silvicultural practices” (Matsypura, et al.,

2018). In the end, this team proposed a “multi-period optimization framework based on MIP techniques” to find the best geographical allowance of prescribed burning activities within limits (Matsypura, et al., 2018). Basically they believe that if they can mathematically predict the spread of fire, it can be controlled and the effect can have a larger impact on forest preservation.

Another study reviewed prescribed burning effectiveness in fire hazard reduction. In Portugal, Paulo M. Fernandes and Hermínio S. Botelho conducted this study at the University of Trás-os-Montes e Alto Douro. Methods of computer simulation, review of case studies, and investigation of the fire system within currently working prescribed burning programs. Their results indicated prescribed burning makes fire suppression efforts possible by “reducing the intensity, size, and damage of wildfires” (Fernandes, Botelho, 2003). They believe previous approaches are limited, and that more appropriately designed research needed to understand effective fuel management and fire suppression. What these researchers found was that all the details of the effect prescribed fire has on large wildfires is not concrete, but the current data supports the conclusion that it does limit fire spread and “will result in a less homogeneous post-burn landscape” (Fernandes, Botelho, 2003). Concrete things known, however, are that prescribed fire balances wildfire severity, can increase the safety of the suppression personnel, and can decrease the kind of and amount of fire fighting

resources. It also changes the long-term suppression tactics, reduces inherent burn risk, has less amount of mopping-up, and equips better access for suppression implementation. They found that the best way to get results about prescribed fire implementation is within “heterogeneous landscapes” and in climates with a low likelihood of extreme weather conditions. In all, the effectiveness of prescribed burns depends on the larger system and “efficiency of the entire fire management process” (Fernandes, Botelho, 2003).

In 2009, a literature study recorded the ecological effects of prescribed fire season (Knapp, et al., 2009). This study was conducted by the United States Department of Agriculture Forest Service, Pacific Southwest Research Station, in Redding, California. By analyzing and comparing historical, prescribed fire systems and literature on the season of prescribed burning for different regions in the continental United States, they were able to get a comprehensive examination of the effect it has on plant vegetation and wildlife. This research explains that “most species in ecosystems that evolved with fire appear to be resilient to one or few out-of-season prescribed burn(s)” (Knapp, et al., 2009). Yet prescribed burns at various times of the year could mitigate the risk for unwanted changes and provide the best opportunities for biodiversity. One significant finding was that a frequent yet divergent fire regime, as well as a variety of fire seasons, might be fundamental to maintain biodiversity or to

benefit individual species to the greatest degree where different parts of the life cycle are alternately impacted by burning season.

Looking at European forest management, a study in 2017 was conducted on the effectiveness of mechanical thinning and prescribed burning on fire behavior (Pique, Domenech 2018). This research was done in Solsona, Spain at the Forest Sciences Centre of Catalonia. A study site was set up in the Pre-Pyrenean range in northeast Spain, with a Mediterranean climate. In this area, methods of four different mechanical treatments were used, along with a control group. This research analyzed thinning intensity and the type of slash management impacts on forest fire behavior, and they found that the best treatment to reduce the potential of crown fire is thinning first and then prescribed fire. Ultimately, researchers here believe that a reduction in the impact of present and future climate change, mitigating fire intensity, and severity, can be seen by using fuel treatments. These treatments allow better fire suppression opportunities and a higher chance of tree survival. This research suggests that fire behavior criteria should be included in the growing and cultivation of trees in conjunction with fire management. All of this is used in order to help determine the best-fitted treatment for “each species and forest structure in each stage of their ecological succession” (Pique, Domenech 2018).

Another article detailing how prescribed burning is used for forest treatment was written from research Forest Ecology and Management conducted. This article entitled, "Fire Scar Growth and Closure Rates in White Oak (Quercus Alba) and the Implications for Prescribed Burning," was published in 2017. They looked specifically at fire ecology and treatment of oak forests in the eastern United States. The intention of this study was to assess growth and wound closure rates of white oaks with quantitative data. Researchers set up a site in Missouri where samples of a variety of tree sizes, fire scar sizes, and fire scar ages were taken. This method was done in order to discern factors related to closure rates with trees and environmentally. Using the dendrochronological technique damaged woundwood regions were shown within tree rings. They found that “frequent burning is likely one approach to reduce scarring since fires would potentially be lower intensity and smaller scars would be expected that also require less time for wound closure” (Stambaugh, et al., 2017). Contrary, it's expected that less recurring burning would have a larger potential to create bigger wounds requiring “greater time for wound closure” (Stambaugh, et al., 2017). They believe that future research would be helpful to keep understanding tree wounding and wound closure due to fire behavior.

In April 2017 a TEDx talk hosted in Bend, Oregon, introduced Paul Hessburg with his talk titled “Living (Dangerously) in an Era of Megafires” (TEDx

Talks, 2017). Hessburg received his Ph.D. in Botany and Plant Pathology Ecology and Epidemiology of Forest Pathogens from Oregon State University in 1984. Since then he has spent his time researching forest landscape and has published over 50 articles and books on the topic. In his TED talk, Hessburg explained how our past management of forests has led to an epidemic of bigger and hotter forest fires. In the past "The forest patchwork provided a natural mechanism to resist the spread of future fires across the landscape. Once a patch of forest burned it helped prevent the movement of future fires across the landscape." Over the decades, however, forests have grown differently due to roads, railroads and cattle on the land eating the grass. These along with fire suppression tactics and logging have vastly changed both our forests and the fires that go through them. Due to these factors forests have grown so much they are now unhealthy and the landscape is no longer able to properly support them. Over the last 3 decades individual fires bigger than 100 thousand acres, called Megafires, have been on the rise. Hessburg says that "If we don't change a few of our fire management habits we are going to lose many more of our beloved forests, some won't recover in our lifetime." So what do we do? Hessburg says that we need to fix our forest by putting good fire into them to help restore the patchwork and once again have healthy forest. He suggests methods of using prescribed burning, mechanical thinning where appropriate, especially near

urban areas, and utilize already burning fires as a tool. This can be done by herding an existing fire where officials want it to go to help create the needed patchwork in the forest. He concluded by saying that this is a social problem that takes us humans to solve. He suggests we need better support for prescribed burns and makes the point that there is no future that doesn't involve lots of fire and lots of smoke. However, it's up to us if we want it to come from Megafires or controlled burns.

In the article “Burn Out” by Michelle Nijhuis, Nijhuis looks at the Jemez Mountains of northern New Mexico and interviews Ecologist Craig Allen, who has been studying this forest for more than 30 years (2012). He details how due to the past 100 years of total fire suppression, the forest has been left to build up and is prone to hotter fires that kill everything, even seeds, strip the soil of nutrients leaving a higher chance of landslides and burns the whole forest leaving nothing untouched. This is evident in the Jemez Mountains. Allen explains how unlike in previous years when patches of the forest remained untouched and allowed for regrowth, these new fires leave the forest almost completely dead with little hope for regrowing. They have found that the types of plants that have been able to grow after these fires are plants better adapted to warmer and dryer conditions but when a new fire comes they also burn hotter and faster than the original forest. Allen explains that if this trend continues soon there will be a

"new normal" with a completely different ecosystem and forest than in previous years (Nijhuis, 2012). Nijhuis details how similar things are happening in the Great Basin and Sonoran deserts of the American West, with invasive species growing quickly after a fire but providing easy kindling for the next fire. Allan and 19 other colleges from around the world found that this event is common in forests around the world and "found that no type of forest or climate zone was immune" (Nijhuis, 2012). Allen goes on to explain that one of the best ways to help these forests and prevent such large intense fires is to do prescribed burning, however, there is a lot of resentment due to the smoke produced from such burns. Allen also says that funding and people to do such projects are very limited. Another option is choosing to speed up the already natural landscape transition that is happening by planting more trees prone to the new climates. Whatever is decided, one thing that we can't change is the fact that our forests will never be the same again.

A research paper conducted by three different research centers and universities in Western Australia published a paper in 2009 titled, "Long-term impacts of prescribed burning on regional extent and incidence of wildfires—Evidence from 50 years of active fire management in SW Australian forests." They looked at the history of a eucalypt forest region in south-western Australia over a period of 52 years in an attempt to observe the impacts of prescribed burning

over a period of time. It was found that by utilizing prescribed burning in this area the time in between wildfires doubled to about 9 years. They determined that the forest required about 4 prescribed burns a year to achieve the best results. The study concluded that implementing prescribed burns mitigated wildfire hazards for this particular Australian forest and said that more research needs to be done in wildfire management and its environmental factors.

Sean Davis started fighting wildfires back in 1993 in Hawaii while serving in the military. When he retired from the military, he joined a private contracting company fighting wildfires. In his 2019 book, *Oregon Wildland Firefighting: A History* Davis outlines the history the United States has had with wildfires, its different organizations, and the people who have fought these fires. Davis also covers some of the science behind fires and compares different fires over the last 100 years. He explains how important and critical fire is to the growth and health of forests. By utilizing controlled burns we can help improve a forest's health and prevent the chances of larger wildfires occurring (Davis, 2019, p. 67). Some logs and debris on a forest floor can take up to 100 years to decompose and pine needles take up to a year to decompose (p. 67). A controlled burn helps speed up the decomposing process leaving behind lots of nutrients and soil to help the forest grow healthier (p. 19). Davis continues by showing how over the last 40 years the average fire season in the US has gone from 23 days long to an average

of 116 days (p. 92). In his book, Davis quotes the Oregon Climate Change Research Institution saying that this change over the years can be attributed to a combination of warmer and dryer climate contributing to less precipitation and enabling more frequent, bigger, and hotter forest fires to occur (p. 91-92).

In Edward Struzik's 2017 book "Firestorm: How Wildfire Will Shape Our Future" Struzik discusses some of the environmental and political effects of fires in the United States and Canada. Struzik currently works at the Institute for Energy and Environmental Policy at Queen's University in Kingston, Canada, and has been studying and writing about a variety of environmental issues for over 30 years. In his book, Struzik introduces a word that has begun to be used in recent years to describe these new kinds of wildfires, "Megafire" describing a fire that burns at least 100,000 acres (p. 2). He details how over the years the amount of money spent fighting wildfires has increased drastically in both the US and Canada taking money from other parts of the budget that pay for things (p. 238). He goes on to explain that one reason for this new kind of fire is due to "Urban/wildland interface" (p. 3). With growing population, new homes are being built in places prone to wildfire creating more kindling for a fire when one does occur. Struzik outlines three things we need to understand when it comes to these new fires, first the warmer the temperature the dryer forest will become (p. 13). Second, warmer temperatures lead to conditions that favor stronger

storm development producing more lightning which is a common fire starter. And third, the warmer the weather the longer fire season will be. He concludes his book by saying that when it comes to forest fires and forest management there needs to be a new normal, we can no longer continue with “business as usual” (p. 241).

Forest management over the last 100 years was done with the best strategies known at the time. With new research, forest management needs to be shifted and history learned from. Funds need to be designated to research in an attempt to learn from and solve our growing wildfire problem so that one day soon we can begin to spend less on simply fighting the fires that do occur. It seems clear that our current best solution for forest management and preservation, with the problems at hand, is forest treatment including thinning and prescribed burns. In the future, management strategies will need to change again and will need to learn from research that will come out of this season to manage the integrity of our forests. For now, we as individuals need to be patient, trust our forest management that they are doing the best they can and learn to be okay with having smoke in the air because whether it's from prescribed burning or “Megafires” there will be smoke one way or another we simply need to decide what kind we would prefer.

Forest Fire History around the World and the USA

Forest fires happen all over the world on 6 of the seven continents; every year somewhere between 457 million and 5,006 million acres of land burn (Larsen, 2009). Globally an area the size of New Zealand burns each year, this is about 1% of the world's forests that burn each year (Spilsbury, 2018, p. 5). Wildfires can occur in traditional forests but also grasslands, savasanas, and other ecosystems (National Geographic Society, 2019). There are many different kinds of fires depending on the landscape and environment. A surface fire occurs when there is dry or dead vegetation on or near the ground. A surface fire can remain low to the ground but if a forest is overgrown or unmanaged a fire can spread up trees into what is known as a crown fire. Crown fires can be deadly for a forest, burning into the canopies of forests and leaving nothing behind. The other kind of deadly wildfire is known as a ground fire. This is when a fire occurs within the soil. Things such as plant roots can spread the fire underground for miles and can burn underground for months with little outward evidence until conditions are right for it to turn into a surface fire.

Some of the different forests around the world that experience forest fires include boreal forests. These grow in colder, windier, darker regions of the world like Alaska, Canada, Scandinavia, and Siberia (Spilsbury, 2018, p. 14-15). Eastern United States, Western Europe and parts of Asia have Temperate Forests with

both evergreens and deciduous trees. There are also tropical forests that experience lots of humidity, with high temperatures and high rainfall. These reside in parts of Africa, South America, and Southeast Asia.

Some examples of large wildfires that have occurred in different parts of the world include Russia. In 2010 they experienced an unusual heat wave in the summer, with temperatures up to 111 degrees Fahrenheit (Spilsbury, 2018, p. 12-13). This led to over 600 large fires that put much of the country in a cloud of smoke for weeks, trapping citizens indoors. The fires burned more than 1,920 thousand acres and required more than 200,000 firefighters to manage them and eventually put them out. A reported 65 people were killed and more than 1,000 were injured along with an unknown number of health-related deaths and injured due to smoke conditions. In 2019 Australia recorded one of the hottest years on record. Between September 2019 and January 2020, more than 24 million acres were burned (Phillips, 2020). As of January 2020, 32 people had been recorded killed by the fires, and over 2,000 homes had been destroyed. Firefighters from around the world, including the US, Canada, and New Zealand ended up flying in to help the country control the blazes (“How Did Australia Fires Start and What Is Being Done?”, 2020).

The United States has been exposed to fire for centuries, even before the pioneers landed on the east coast. American Indian tribes commonly practiced

using fire as a means of controlling the environment and circumstances around them (Blazing Battles: The 1910 Fire and Its Legacy). Both human and natural fires have affected the forests for centuries. When European settlers began to build homes in these forests the threat of fires was a very real concern and the people of this new America began to think of it as a force of nature they should and could control.

In the late 1800s, US conservationists began to become concerned over protecting the forests for timber resources against forest fires (U.S. Forest Service Fire Suppression). In 1891, the US government began creating national forest reservations and in 1905 the US Forest Service was created taking over those forest reservations. Soon after in 1910, A series of devastating fires burned over 3 million acres, completely destroying many communities and killing 85 people (Worst U.S. Forest Fires). Smoke from these fires reached as far as England and soot from the fire reached Greenland (Blazing Battles: The 1910 Fire and Its Legacy). The forest service was convinced that the only way to protect the forest from future tragedies like this was to implement total fire suppression tactics (U.S. Forest Service Fire Suppression). This required more funding, more staff, and more equipment. This policy had two goals, keeping fires from happening in the first place and second, the 10 am rule. If a fire did start it was to be put out by 10 am the next day. In 1917 forest service employees were to focus on

prevention and one of their tactics was to remind visitors that "... leaving a campfire without completely extinguishing it constituted trespass and under the Act of June 4, 1897, was punishable by a $500 fine or 12 months' imprisonment, or both" (Baker, 1988, p. 158). In 1909 the fine was raised to $1,000.

Educating the public became an important goal for the forest service and in 1944 Smokey the Bear was created to help spread their message about burn prevention. Their first ad was a drawing of a fictional bear putting out a fire with a bucket of water. The poster read, "Care will prevent 9 out of 10 fires" (The Story of Smokey Bear). In 1947 the bear's slogan changed to "Only YOU Can Prevent Forest Fires!" and in 1950 a living bear was given the name. After a fire in New Mexico in 1950 firefights discovered a bear cub who escaped the fire by clinging to the top of a tree. He was named Smokey by the firefighters for his bravery during the fire. He was then taken to the national zoo in Washington DC where people from around the county could come see the real-life Smokey bear and learn about wildfire prevention.

Not everyone agreed with the new total fire suppression tactic. Many ranchers, farmers, and even timbermen favored the practice of light burning in areas to help promote the growth of the forest (U.S. Forest Service Fire Suppression). However, the new forest service regulations limited them from doing so. The new forest service program also began building networks of roads,

communications systems, lookout towers, and ranger stations to help with firefighting tactics. After a few devastating fires in the 1930s, the federal government implemented the Civilian Conservation Corps in 1933. This new group hired thousands of men to build fire breaks and help fight forest fires. With new technology came new tools to help fight fires such as airplanes and smokejumpers as well as chemicals that suppressed a fire.

In the 1960s scientists observed that fire was a healthy thing for many forests. In the 30 years since strict fire suppression tactics had been in place, scientists noticed how forests were turning into hazard zones due to the build-up of decaying material. This, in turn, began to limit the type of vegetation that could grow, decrease ecosystem diversity as well as aesthetic appeal (Baker, 1988, p. 167). This led to new policies in the 1970s which allowed some natural fires in designated wilderness areas to burn without interference. By 1967 fire policies began changing to recognize the usefulness of fire. Under certain circumstances, fires were allowed to be used in forest areas to help modify vegetation life, to dispose of large fuel build-up, to reduce fire hazards, and/or to help with the forest natural beauty (Baker, 1988, p. 167). However, after a Megafire in Yellowstone National Park in 1988 that burned over 1.2 million acres (Worst U.S. Forest Fires), the let burn policy lost popularity.

The years of aggressive fire fighting tactics in the United States during this time period led to many forests experiencing a build-up of debris that is now causing extreme fire danger. This in combination with changing climate has led to intense fires in many parts of the US. One such area that is experiencing extreme fires is California (Little, 2018). After experiencing a 5-year drought many trees in the Sierra Forest in California died leaving these forests vulnerable to fire. Once root rot sets into the tree they become destabilized and begin to fall, bringing even more trees down with them and creating a build-up of tinder prime for a fire. By 2018 more than 1 million of these trees have already been removed by forest management but an estimated 127 million more dead trees are still in the forest, prime for one of the most intense wildfires. Scientists have estimated that if these areas were to burn the temperatures could reach up to "World War II firestorms at Dresden and Tokyo" (Little, 2018).

After years of debate between different agencies, they have come to the conclusion that for this particular problem in California "setting prescribed fires in areas of high tree mortality is the best option to lessen future fire danger" (Little, 2018). Historically millions of acres in this area burned every year, the goal of Federal agencies is to return natural fire to these areas, in a safe and contained way before wildfires can occur and become too much for them to handle.

Through prescribed burns, forest thinning and logging officials hope to accomplish just that.

California isn't the only state doing this, in fact, "All states but Hawaii are now using it as a tool to reduce wildfire danger and to enhance biodiversity by restoring habitat for fire-adapted species" (Little, 2018). The goal of these prescribed fires is to "balance public safety with ecosystem benefits" (Little, 2018). However, one problem forest service management teams have run into with regard to prescribed burns is that the season in which it is best to do prescribed burns is also wildfire season. So often this means that those who would be doing the prescribed burns are instead busy out fighting wildfires leaving less time to utilize prescribed burns.

Another problem forest service management teams have discovered is that with city and urban growth in the twenty-first century, the forest service and fire suppression tactics have to take into account what they call "wildland-urban interface" (U.S. Forest Service Fire Suppression). Wildland-urban interface or WUI can be defined as, "the area where houses meet or intermingle with undeveloped wildland vegetation." (Radeloff et al., 2005) As cities and towns grow they spread out into more wilderness areas creating more WUI. In the US about 9% of land area is considered to be WUI with around 39% of housing units in this area. Some problems with WUI areas includes the risk of homes

destruction due to wildfires as well as other problems like increased invasive species in these areas, habitat fragmentation and destruction and biodiversity decline.

California has one of the highest WUI housing units with over five million homes in wildfire-prone areas of the state (Radeloff et al., 2005). This leaves residents in a difficult situation. When firefighters do prescribed burns it creates a lot of smoke, although it is significantly less than when an actual wildfire occurs (Little, 2018). This is often disruptive to homeowners in the area who can and often complain to city officials regarding the smoke. This is understandable as a study produced by the American Heart Association found that a person is 42% more likely to have a heart attack on smokey days than on clear days (Little, 2018). Thanks to progressing technology, fire technicians can now look at weather patterns and satellite modeling to predict how and where smoke plumes will go. This allows firefighters to adjust how they manage a fire to help keep air pollution low. This new technology along with prescribed burning efforts helps significantly less the air pollution produced by wildfires.

Oregon Forest Fire History

Like much of the rest of the United States, native people lived and worked on Oregon land long before European settlers found Oregon (History: Connect with Your Roots). They often used Fire as a way of clearing out forests to improve forest health in an effort to keep deer and other animals close by for hunting. In 1805 Lewis and Clark discovered Oregon and by 1827 the first sawmill was opened (History: Connect with Your Roots). The timber industry grew and Oregon forests continued to be cut down with no regulations until 1897. In 1897 the federal government recognized the power of Oregon and implemented the Organic Act, which limited timber sales and allowed for the implementation of fire protection.

In 1911 Oregon created the Oregon Department of Forestry. Like the rest of the country in the early 1900s Oregon began implementing strict fire prevention policies and put fires out as soon as possible (History: Connect with Your Roots). While this helped keep most fires small between 1900-2000 Oregon had 7 wildfires that grew larger than 100,000 acres. Three of these fires were in the Tillamook forest between 1930 and 1950. 355,000 acres of Oregon's best timber was destroyed in these three events and after the last fire. After the third fire many workers refused to go back to work in the forest saying that it was cursed.

In 1941 Oregon implemented new laws requiring replanting trees after timber harvest (History: Connect with Your Roots). In 1971 Oregon Legislature created “The Oregon Forest Practices Act.” This act was the first in The States that created a comprehensive set of laws regulating how forests were to be managed. More laws followed, and in 1973 the Endangered Species Act was passed further protecting Oregon forests. In 1976 a new act, The National Forest Management Act, limiting clear-cutting was passed. However, in 1987 another devastatingly large forest fire occurred, burning 245,000 acres with a loss of $92.3 million for the timber industry. In 1996, Oregon experienced a number of fires that burned hundreds of thousands of acres in Oregon’s national forest. Little did firefighters and the state of Oregon know that this would be just the beginning of a new kind of forest fire.

The last 100 years of forest fire suppression has caught up with Oregon’s forest. The overgrowth of the forests has led to the last 20 years of forest fires in Oregon burning more frequently, with hotter temperatures and burning larger areas. This causes many issues including soil erosion, destruction of forest habitat, poor air quality, road closures, trail closures, economic impacts on surrounding communities, destruction of property and so much more (Fire in Oregon’s Forests). Between 2006 and 2016 Oregon spent over $226 million fighting forest fires on state-protected land. State and federal government along

with local Oregon stakeholders, including people from both the conservation community and the timber industry, are working together to create better ways to help manage these forests in an effort to keep large forest fires from occurring as frequently (Fire in Oregon's Forests). Some of these efforts include implementing tree thinning, mowing dry brush, and prescribed burns. Through this process, they hope to get forests back to a more natural state in an effort to prevent larger fires from occurring.

Not all forests are created equal though and each kind requires unique care. About 47% of Oregon is forest but within that 47%, there are 12 different types of forests with varying trees, plants, and wildlife (Oregon's Diverse Forests). These differences occur due to varying climate, elevation, perspiration, soil types, and sunlight. Oregon forests are divided into three different sections when it comes to forest fire management, dry forest, wet forests, and southwest forest (Fire in Oregon's Forests). See figure 1.

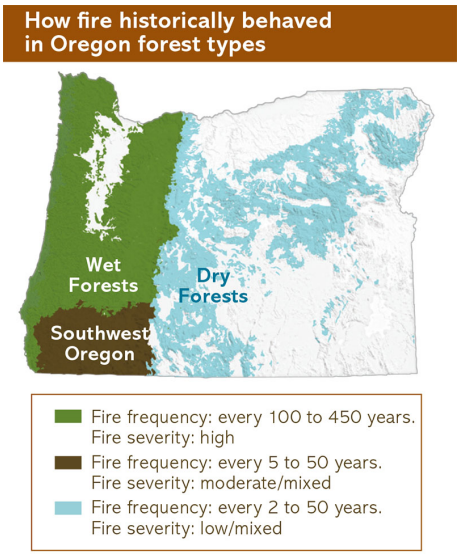

Figure 1 (Fire in Oregon's Forests).

Central Oregon and Eastern Oregon are considered dry forests (Oregon's Diverse Forests). Historically natural fires would burn through these areas every 2 to 25 years. This would help keep the forest healthy by eliminating dead or overgrown brush and make more room for other things to grow. Small fires like these were also necessary for certain kinds of seeds to germinate. The west side of the Cascade Mountains and the Coastal region of Oregon have wet forests. Historically fires in these regions would burn more like every two hundred years due to the wetter climate. Oftentimes these fires were more destructive and would burn down entire forests. And the bottom left corner of Oregon is the southwest forest section. This section is a mixture of the other two. It experiences more dry weather like central and eastern Oregon but with trees similar to western parts of the state. Historically this area would burn every 25 to 50 years with a mixed-severity of fires.

All three of these forests require different kinds of forest and fire management. It's important to remember that every forest is different and will require different ways of managing it. There is no one perfect solution to preventing and putting out forest fires. This is why it's so important to have well-trained forest and fire management crews who know the best way to deal with situations in all different types of forests.

How Forest Fires Are Fought

Basic firefighting techniques have remained the same over the last ~100 years, a group of people with hand tools set out to help slow down and stop a fire (Davis, 2019, p. 20). Of course with new technology, there have been new tools and machinery created to help aid firefighters but the basic principles for firefighting techniques remain the same. Some of the new technology that has emerged over the last 50-60 years include helicopters that help carry large amounts of water to fires as well as drop off special fire jumpers into secluded hard to reach areas. Bulldozers are also helpful when they can access an area, to help clear away larger areas and make fire breaks. Personal protective equipment for firefighters has also improved.

However, despite all these tools, Davis feels that a firefighter's best tool against fire is their brain, "A good firefighter tries hard to predict fire behavior by taking in the weather, wind direction and speed, the terrain and many other aspects" (2019, p. 20). Davis continues by explaining that the most important tool for a firefighter is a weather belt kit and an Incident Response Pocket Guide. With these two things, a firefighter will be able to predict weather and plan accordingly (p. 26). While some may want to rely on weather apps on technology devices, Davis points out that these are not always as accurate and oftentimes there is no service when they are out fighting the fires. Instead by using the

weather belt which includes items such as a sling psychrometer, an anemometer, a compass and more, firefighters can then uses these items to determine “the relative humidity in the air, the speed and direction of the wind, the dew point, the probability of ignition and more vital information needed to predict fire behavior” (p. 26).

Fire requires three elements, fuel, oxygen, and heat; this is called the fire triangle (Spilsbury, 2018, p. 8). By removing one of these three elements firefights can manage and put out fires (Soles, 2014, p. 1). Fuel means anything that burns (Davis, 2019, p. 19); this can include things such as wood, bark, leaves, roots, and other parts of trees and shrubs. But Fuel can also include things like houses and other buildings, plastics in cars, and other organic materials like animals and even humans (Spilsbury, 2018, p. 6). The heat from fires can buckle metal sheets, bridges, telephone poles, and railroad tracks as well as melt asphalt from roads. This is one of the best ways that wildfires can be fought is by limiting the fire’s access to fuel. One way this can be done is by creating fire lines or breaks (Davis, 2019, p. 77). This is when hand crews go into an area and dig down to the bare soil in lines about 5 feet wide in an attempt to limit fuel for the fire and keep it from spreading. If it's accessible, tractors can also be used in certain areas to do this.

The second element of a fire is Oxygen. When fires roar through areas they consume most of the oxygen in the air in order to continue burning (Davis, 2019, p. 11). When a person is near a large fire oftentimes there is not enough oxygen in the air to breathe because the fire is consuming it. The common way for firefighters to control the oxygen available for a fire is by smothering the fire (p. 77). Crew members will go in and break up burning logs and stumps and try to smother them with dirt to put out the fire. This technique is called dry mopping and it can be used while the fire is active and by the cleanup crew after a fire has gone through an area.

The final element is heat. You can reduce the heat by spraying the flames with water (Davis, 2019, p. 72-73). However, water needs to be conserved whenever possible when fighting a wildfire as it is often very difficult to get water out there since transport of water to the fire location is typically limited. Individual firefighters can carry five-gallon water bladders on their backs and small fire engines may be able to reach some areas but are often very limited. The best way to get water to a fire is by using hundreds, sometimes thousands of feet of hose. Hoses are statically placed along the fire with splits in the line to allow other hoses to come off of it. Water is then directly sprayed on the fire but again firefights must conserve water when possible. They must take into consideration “the amount of water in the tank, the size of the pump pushing the

water through, the diameter of the hose, how many feet of hose there are and the terrain" (p. 73-74).

When a fire is spotted it needs to be evaluated in size and severity to determine the type of support that will be needed. Fires are categorized into 5 types according to the Incident Command System (Davis, 2019, p. 57-64). Type 5, the smallest and requiring the least resources, to Type 1 the biggest and requires the most resources. A type 5 fire, the smallest kind, is often started due to an unattended campfire or a lightning strike (p. 58). They are small and usually put out within a matter of hours requiring only two to six firefights from a local crew. A type 4 fire also only utilizes local resources. There may include briefings for incoming crews but no daily meetings or reports. It is important to remember that type 4 and 5 fires can turn into bigger fires that require more resources and help, however, only local resources are devoted to these kinds of fires.

A fire will be classified as a type 3 fire when it takes up most of the local resources and requires a command staff to organize things and hold daily meetings called incident action plans (IAP's) (Davis, 2019, p. 60). A type 3 fire will have an incident commander and several division/group supervisors. They are responsible for holding morning and evening briefings and dividing up resources into task groups. There will be hand crews, engine crews and possibly heavy equipment and hotshots dedicated to putting out this fire. This requires more

people so a fire base will be set up locally to hold meetings, provide supplies, food and shelter (p. 62).

A fire is moved to a type 2 classification when leadership determines that the fire is going to last a while (Davis, 63). When this happens crews can expect to be working on this fire for a two week period. During these two weeks, there are no days off for crew members and everyone works a 12 to 16 hour day. Shifts are divided into day and night crews so that the fire is always being managed. After two weeks it is mandatory for them to take a day off whether it's hand crews or members of the leadership. Each crew decides if they will take one day off then return for a week more of work or take two days off and return for another two-week stint. Crews will continue to work on the fire until it is put out, maintained or is directed into the wilderness to continue burning until the weather puts it out.

The largest classification for a fire is type 1 incidents. These fires will often include between 500 and 1,000 personnel working on the fire (Davis, 2019, p. 63). To help maintain order the fire is divided into multiple divisions and has crews and personnel assigned to each. Different people and equipment assigned to this fire may include "aviation operations, heavy machinery, hotshot crews, engines of different sizes, laundry services, mobile food services, equipment exchange services, and more moving parts than most people can count" (p. 63).

Fires of this size are often only contained when the weather changes and rain or snow put it out.

History of Sisters

Central Oregon and the area where Sisters Oregon currently resides began as a military camp from 1865-66 and before that was home to many Native Americans (Hatton, 2017). Then in 1870, Samuel M. Hindman started a homestead on that land. Hindman eventually built a post office called Three Sisters in 1888 which is how the town of Sisters Oregon received its name (Hatton, 2017). The town grew due to “its location at the intersection of the McKenzie and Santiam roads'' and in 1901 the town of Sisters was formally established. The town became known for its sawmills and lumber industry, by 1946 the population grew to around 500. In 1940 the first official Sister’s rodeo was held (Sisters Timeline...). Since then it has become an annual event that draws hundreds of tourists to the area every year. The city continued to grow until 1963 when the last sawmill closed down (Hatton, 2017). Once the sawmills closed there was little work in the area and the city began to decline. However, when the Oregon state highways went in, Sisters became a stop for tourists due to its natural beauty and outdoor activities leading to the growth of the town. In 1974 the Sisters Chamber of Commerce was formed to help preserve the history of Sisters and to help it grow and maintain its tourism. In 1975 the first annual Sister’s quilt show was held, the show is now a popular yearly event in Sisters

that helps bring in many tourists (Sisters Timeline…). Today the population of Sisters is around 2,000 and growing (Hatton, 2017).

Just as the town has grown and changed over the years so has the sounding forest. The Sisters landscape has been altered due to over 13 large wildfires. Between 2002 and 2012, 43 percent of the Sisters Ranger District was burned (Pajutee). “Historically, small wildfires frequently swept across the Cascade Mountains, clearing forests of underbrush. That cycle was halted through a policy of putting out virtually every wildfire” (Urness, 2018). When the US Forest Service implemented its practice of putting out all fires it affected the Sister’s forests the same way it affected the rest of the country. Forests became overgrown and unhealthy leading to dangerous situations for bigger and more intense fires to occur.

In 2002 Sisters experienced one of these big fires. The Biscuit fire burned for 4 months, burning a total of 500,000 acres (Davis, 2019). The fire started as 200 individual fires from 200 different lighting strikes, and then morphed into one big fire. When the Biscuit fire started most Oregon firefighters were in other states fighting other fires delaying the ability to effectively fight the fire from the start. The areas burned were a mix of old-growth protected forest, and sections that had seen a fire the previous year, therefore, they had lots of new, little growth. This created the perfect conditions for a fuel ladder leading to a crown

fire. This meant the fire was able to climb up into the canopy of the trees and spread from tree top to tree top. This mixture of the forest also meant that there was fuel for the fire much longer. Parts of the fire burned up to 600 degrees Fahrenheit. By the time the fire was put out it had cost about a total of $150 million.

The next year Sisters experienced another massive fire called the B&B which burned 90,000-acre, the largest fire in Deschutes National Forest history. It shut down parts of highway 20, caused multiple evacuations, and cost $38 million dollars not to mention weeks of bad air quality due to smoke (Urness, 2018). The fire was literally hot enough that it started to change weather patterns. Thankfully no homes or lives were lost due to the fire. The fire was put out thanks to a rainstorm that lasted for two days. Without the rain, offices weren't sure when they would have been able to contain the fire.

The B&B fire along with the Biscuit fire showed that this type of fire is the start of something new and more common. They are ushering in bigger, hotter, and more destructive types of wildland fires. The B&B fire burned so hot it killed almost everything, even seeds (Pajutee). That meant that seeds had to be brought in to replant the area. Fire managers quickly realized that the history of fire suppression and changing climate led to this new type of fire that required new types of management (Urness, 2018). Since the B&B fire Deschutes forests

have seen many more prescribed burns, thinning, and other management in an effort to reduce fuel loads and keep larger fires from occurring. Doug Johnson was a fire manager for the B&B fire and has fought fires in central Oregon for over 32 years. He says that even though they have started to change their forest management efforts, there are thousands of acres of forest that need help and it's going to take time. One thing that he feels would help in this effort would be more legislation allowing more prescribed burns to help keep forests healthy and safe from large fires. He concluded by saying, "We have to learn to live with more fire. Whether it comes in the form of more prescribed burning or a giant wildfire like B&B ... it'll come either way." (Urness, 2018)

Another large forest fire that affected Sisters was the Pole Creek Fire in 2013 which burned more than 26,000-acre (Pajutee). Within that area, 6,800 acres experienced serious erosion, pushing sediment into nearby water systems, and causing road damage. The fire also burned down two homes. This helped increase the publics' understanding of the forest urban interface. "In the past 10 years (2002-2012), seven times more acres have burned in Sisters than in the previous 100 years (1900-2000)" (Pajutee). For every decade from 1900-2000, fires in Sisters Ranger district burned less than 5,000 acres total. But between 2000 and 2010 more than 100,000 acres burned.

Milli Fire

The year 2017 was a dry year for Oregon. The state had experienced above-average temperatures and a lower snowpack than most years (Stafford, 2017). This resulted in an early melt around May rather than June, leaving much of Oregon east of the cascades dryer than normal with low water levels. This in combination with hot 90-degree weather during the summer led to increased fire danger. On the evening of August 10th, the Sisters Oregon community experienced a thunderstorm. Lightning strikes that night caused around 6 fires each under 35 acres large (Burgers, 2018). At the time nationally there were 127 new fires, 31 large and only 6 contained. Nine of these were type one fires, level one being the most dangerous and highest priority and level 5 least dangerous lowest priority. Around the US there were 19 type 2 fires with more than 15,400 firefighters on fire lines. All of this led to a lack of available resources around the country, including in Central Oregon (Stafford, 2017).

On August 11th smoke from the Milli fire was reported but regional haze made sighting it difficult. Fire lookouts were unable to spot it calling it a false alarm and sending resources to the other 5 fires reported in the area (Burgers, 2018). The next morning strong winds came through the area pushing smoke out as well as causing Whychus fire (one of the other small reported fires) to grow from 34 acres to over 2,000 acres, taking priority. At the same time, the Milli fire

grew to 50 acres and was spotted by aerial patrol. Milli had begun to burn into the old burn scar of the Black Crater fire from 2006 making it dangerous for resources to reach the fire. That day a type three fire team was assigned to the Milli fire but due to the growth of the Whychus fire to about 2,000 acres and the danger of the fire reaching buildings, resources were diverted there instead, leaving Milli fire to continue growing and spreading (Stafford, 2017).

August 13th brought in a cold front and some moisture allowing teams some time to regroup and implement a plan of attack for the fire (Burgers, 2018). Aerial firefighters were sent to the Milli fire and were dropped off but further help was grounded due to poor weather, smoke conditions and low clouds made visibility hard (Stafford, 2017). By that time the Milli fire had grown to 110 acres and the forest service had closed some campgrounds and roads in the area due to the fire danger ("2017 Pacific Northwest Fire Narrative", 2017). At this time nationally there were about 30,000 wildland firefighters and 21,000 were out actively fighting fires leaving only 9,000 in reserve (Stafford, 2017). On the 14th the team of aerial firefighters were working on indirect attack strategies in an attempt to slow down the Milli fire and in anticipation of fire growth but were unable to get to close to the fire due to the danger of entering the old burn scar of the 2006 Black Crater fire ("2017 Pacific Northwest Fire Narrative", 2017). Hand crews, 4 dozers, and two excavators were also brought in and started

working on indirect attack strategies using minimum impact suppression tactics. As the fire grew to 150 acres with only 2% contained, a type one fire team was requested for help fighting the Milli fire. The next day a team from the southwest came to assist with fire management in this and other central Oregon fires ("2017 Pacific Northwest Fire Narrative"). The 15th was also supposed to be the first day back to school for teachers in Sisters but due to poor weather conditions they were told by the district to stay home ("Sisters Community Affected by Smoke from Milli Fire", 2047).

Over the next few days, weather conditions cleared up enough for aircraft to be able to get out and help with fire efforts (Burgers, 2018). Firefighters continued creating fire lines and boundaries to keep the fire from entering the town or burning down any structures but were ultimately pulled back due to worsening fire conditions. By the 18th the fire had grown to 7,000 acres with 0% contained and began moving toward town causing 600 residents to evacuate their homes (Quintana, 2017). A level three evacuation, meaning go now, was issued for the crossroad subdivisions in Sisters and other neighborhoods were in a level two; get ready, evacuation level due to Milli. Highway 242 was also closed at this time. Evacuated resident Julia says they are pretty used to this after living in town for over a decade. They had been warned and were prepared to leave before the call came in. They had talked with neighbors the day before and

everyone seemed prepared. But they still say it's unsettling having to leave their home. Many Sisters community members dropped by the middle school looking to help in any way they could with the evacuated people. Fire Engines were very active in the surrounding neighborhoods in an effort to help keep structures safe. Meanwhile, wildland fire crews with approximately 300 personnel were now assigned to the fire. They began work re-established containment lines to keep the fire from spreading into town.

That night winds of over 22 miles per hour blew through the Sisters area causing multiple spot fires to pop up. Due to the fires increased growth and severity, fire crews received the help of three air tankers and one VLAT (very large air tanker) allowing them to reach more inaccessible areas (Gabbert, 2017). Highway 242 was still closed causing many people delays in travel plans. Another major concern for the town of Sisters during this time was that the fire, specifically the smoke, interfered with the ability for people to see the upcoming 2017 eclipse. Sisters was just south of the path of totality for the eclipse and had been expecting a large influx of people for the event. However, with smoke conditions, people would not be as likely to see the eclipse let alone wish to come visit Sisters. By the 20th of August, the fire had grown to 9,331 acres (Fisicaro, 2017). That day due to the amount of smoke in the air an air quality advisory went out advising the elderly, children, and people with asthma to stay

indoors. At this time the Milli fire was about 20% contained with 500 personnel assigned to the fire who continued to build and maintain the fire lines. Several helicopters and air tankers were also provided for support. At this time fire managers switched their tactics. Using direct dozer lines and indirect hand lines, in less accessible areas, “Firefighters were successful in preventing further spread east into private lands and communities, largely due to several years of aggressive and strategically placed hazardous fuels projects” (“2017 Pacific Northwest Fire Narrative”, 2017). However, resources were divided as another set of crews were also fighting a fire in Prineville that had started the same day as Milli but at this time was about 75% contained.

August 21st, the day of the much anticipated total eclipse arrived. While the town had been expecting an influx of about one million people for the event they were disappointed not only to have less tourism than a normal summer but also with the discovery that most of Sisters was unable to see the sky that day due to think smoke conditions (Burgers, 2018). There were also residents in the Black Butte community, just west of Sisters, who had to evacuate their homes that day (“2017 Pacific Northwest Fire Narrative”, 2017). This along with sections of hwy 242 and 20 being closed down due to the fire made it difficult for anyone in the area to enjoy the eclipse event. The next day Milli fire had grown to 11,236 acres. Crews were still having a difficult time accessing much of the Milli fire so

efforts were put into fuel reduction in other areas and plans were made for burnout operations. The Sisters community continued to suffer from poor air quality as smoke from not only the Milli fire poured in but also smoke from fires in southwest Oregon and northern California. The local news channel interviewed Sisters shop owners asking how they felt their business had been affected by the fire so far. Many Local store owners said they noticed a drop in sales and business over the previous week commenting that it's been their slowest week all summer. They were also worried people may have thought the community was closed. Some even said that residents were concerned about being in town due to such harsh smoke conditions ("Sisters Community Affected by Smoke from Milli Fire", 2017).

A few days later on the 23rd the evacuated areas were returned to a level two meaning people were able to return to their homes ("2017 Pacific Northwest Fire Narrative", 2017). Firefighters continued with burn out activity to reduce fuel load for the fire, they also conducted vegetation removal and built a line of defense against the fire before it could reach houses. At the same time, the Milli fire continued to grow and spread into the old Pole Creek fire area. Crews widened and reinforced fire lines and continued with mop-up of burned areas. The next day aircraft were able to come back into the area to help alleviate the

fire due to cooler temperatures and the wind blowing smoke out of the area for better visibility. By the 26th Milli was at 13,485 acres and still growing.

Over the next few days, fire crews conducted burn out operations in an attempt to keep the fire contained and from spreading into town. Tim Phelps, a fire spokesperson, describes how they go about lighting strategically placed fires at the tops of hills and push them down to burn at a low intensity so as to not damage the forest but also to leave no fuel for the Milli fire to burn that area (Lerten, 2017). While they were successful at keeping the fire from spreading into town the extra burning added more smoke and ash into the air and by the 28th aerial support was forced to ground due to worsening conditions. The Sisters schools were scheduled to have their first day of classes that day, but due to bad air conditions, they pushed the start date back to the 30th ("Sisters Community Affected by Smoke from Milli Fire", 2017). At this time the fire had grown to 18,067 acres and was 32 percent contained with 651 personnel assigned to the fire. At that time the Milli Fire was declared a type one incident, meaning it was one of the highest priority fires for the country (Hamway, 2017). Support began coming in from the municipal, state, and federal fire crews across the west. There were even crews from New Mexico and Canada.

August 30th school started. The fire had grown to 21,703 acres ("2017 Pacific Northwest Fire Narrative", 2017). While the fire continued to grow on the

west and northwest side fire crews worked on mop-up in the east and south side of the Milli Fire. Crews also worked on cleaning up areas where the fire had gone through and was now contained. This involved knocking down berms, mounds of soil, and returning control lines and dozer lines to a more natural state. Crews also worked on OR 242 to remove debris and hazards to help keep roads safe for divers. During the first week of September, the fire grew another 3,000 acres. Crews were able to contain the southeast and south side of the fire but the southwest side continued to grow and spread. With the help of a helicopter to drop water in that area and a rainstorm, crews were able to get the fire 60 percent under control. While all evacuation notices for the area were dropped many forest closers remained in place.

By mid-September fire crews were able to get all fire lines under control and with 60 percent containment many crews were able to return home, leaving only 59 personnel assigned to the fire (Stafford, 2017). Most crews were now continuing on mop-up of burned areas and started repair work (USDA Forest Service, 2017). This included Tree removal along the burned area of highway 242 and the continued maintenance of fire lines. By the 18th an issued fire report stated that Milli was well contained but would continue to burn until rain or snow completely put it out or until it ran out of fuel to burn. Until the end of September, the community continued to be affected by smoke from the burning

areas even after the fire was 100 percent contained on September 24th (Stafford, 2017). A few days later on September 28th fire crews began taking down fire lines (Hamway, 2017).

The total estimated cost of the Milli fire was around $16,000,000 (Burgers, 2018) and at the peak of the fire, there were about 900 personnel assigned to and fighting the fire (Stafford, 2017). It was estimated that about 6% of 24,000 acres that were burned was private land, with the other 94% being USFS land ("2017 Pacific Northwest Fire Narrative", 2017). This led to a loss of both private and federal timber/logging income of about $20 million (Burgers, 2018). During that summer Oregon experienced a total of 1,903 fires which burned about 678,400 acres and cost $340 million (Urness, 2017). Thankfully all loss from the Milli fire was limited to economic, health, and loss of forest and wildland with no injuries and no structural loss (Burgers, 2018).

After a fire is contained the BAER (burned area emergency response) team goes into the affected area to help restore the area (Burger, 2018). They do things such as storm-proofing and patrolling, trail stabilization, put up road/trail hazard signs and traffic safety signs, install drainage features, monitor, and remove invasive species, make sure roads are able to handle extra dislodged dirt and debris from fire that will be displaced by storms, remove dangerous snags near campsites and trailheads and use boulders to block unsafe areas that can no

longer be accessed (Hamway, 2017). The Milli fire affected many recreation areas that the BEAR team had to go through and work on. There was burning through Lava Camp Lake recreation and camping area, Whispering Pine campgrounds, and trailheads, and Black Crater trail (Burgers, 2018). Fifty miles of trails were burned. Three trails were part of the PCT as well as some emergency access trails. There were also 4 campsites closed due to Milli. While some areas were able to open back up the next summer, the Black Crater trail will remain closed for a few years due to snags, standing dead trees, which pose a danger to hikers and cannot be removed because they are in a wilderness area (Urness, 2017). Highway 242 was also affected by the fire as 7 miles of highway overlapped with the fire area; tree removal was required in the area for safety reasons (Burgers, 2018).

Some of the wildlife that was impacted by the fire included the Northern Spotted Owl. Much of their roosting and foraging habitat was in the area burned, creating a moderate loss to nesting and food for them (Burgers, 2018). Other wildlife that was affected by the fire was the snag population, including woodpeckers, bugs, and small mammals. When Milli burned through areas that had seen fire in the last 10 years it burned up old snags that provided food and shelter to many small creatures. In its places were left areas of nothing, setting back first regrowth a succession and snag deficits for a period of time in those

areas. River beds and fish were also disrupted due to the increase in sedimentation into the rivers due to a lack of vegetation holding the soil.

How Firefighters Lived While Fighting the Milli Fire

Fighting a fire is a lot of work and requires a lot of crew members. While fighting a fire, crews work 12-hour shifts, and when they get back from the fire they require food and sleep before getting back to work (Hamway, 2017). During the Milli fire crews stayed at the Sisters Rodeo Grounds. People involved in the fire activities stayed in tents and portable homes/city base camp on the rodeo grounds. During the peak of the fire, there were 700 people staying there.

When fighting a large fire like the Milli crews are divided into two shifts, the day shift and night shift. Members in the day shift are up at 5 am. They eat a breakfast of oats or grits, sausage, bacon, or other protein and sometimes pancakes before heading off to morning briefing at 6 am. There they receive information about the fire, weather conditions, planning updates, safety reminders, and more. Then they separate into their crews, usually in groups of 10-20. They grab water, Gatorade, sack lunches, and other supplies before heading out. From the sisters rodeo campground to the Milli fire was about a 30 minute drive. Crews would then work until around 8 pm before heading back to camp and letting night crews take over. The night crew shifts are mostly the same as day crews but they wake up at 6 pm and work till around 8 am before returning to camp to sleep. Some only sleep a few hours once getting back to camp due to the sun coming up making it difficult to sleep.

Each camp also has a supply tent staff that makes sure each group has the equipment they need to succeed that day, replacing what's been lost or burned (Hamway, 2017). Officials left at camp attend meetings and continue to develop plans of attack and wait for any updates from crews out on the fire. During the day the camp chef prepares 220 pounds of veggies and 315 pounds of meat for dinner, as well as smoking around 2,500 chickens for day shift fighters' dinner each day.

Most people involved in the fire activities commented on how the Sister's community was very supportive of them (Hamway, 2017). Residents donated socks and other supplies during the Milli fire to help support crew members. The Sisters coffee co. also provided free coffee to the fire crews, a tradition that started with the B&B fire in 2003. The community members recognized how hard the firefighters were working to protect their homes and communities and tried to do all they could to help show their support. During the firefighters' shift changes, there were often people standing on the main street corners with signs of appreciation for the firefighters and all they were doing.

Economic Effects on a Community

Fighting fires cost a lot of money and with the growing fire season and number of fires that need to be put out each year the cost of fighting fires continues to increase. In 1995 16% of the US Forest Service's budget was devoted to firefighting, in 2015 it was more than 50% of the budget, and estimates say that it could be as much as 70% of the budget by the year 2025 (Struzik, 2017, p. 238). The millions of dollars used toward wildfires every year covers the cost of suppression tactics, structural losses, and economic and natural resource damage (Harbour, et al., 2014, p. 7). If this trend continues other programs within forest management such as "programs that support fisheries, tourism, timber harvesting, and wildlife conservation" will be neglected and lose funding (Struzik, 2017, p. 232).

One way to help with the rising cost of fighting fires is to teach proper wildfire prevention. This can help reduce the number of human-caused wildfires that occur. A 2009 study conducted in Florida reviewed wildfire prevention education programs and found that for every dollar spent on wildfire education it reduced spending on wildfire-related cost by $35 (Harbour, et al., 2014, p. 18-19). A similar study conducted on tribal lands found fire prevention education to be a highly effective tool that dropped the number of human-caused fires in one tribal unit by 93% (p. 18-19).

Not all financial costs associated with wildfire are bad, however. In one study conducted by the University of Oregon in 2012, it was found that when a large wildfire went through a county the area experienced a decrease in unemployment rates and an increase in wages as jobs were created due to suppression activities related to the fires (Moseley, 2012). Large fires bring in opportunities for community vendors to work within the fire camps for services such as janitorial, laundry services, and food catering. Communities who had the ability to house and feed the large influx of firefighters had less economic impact due to receiving funds for helping supply services to the people there to fight the fire. The study found that each town's ability to capture contracted costs from the fire depended on their preparedness and ability to provide services themselves rather than having to contact outside sources. The average across all towns studied was 12% spending captured by local communities. However, some towns were able to get up to 62% money captured while others received 0. The study goes on to explain that while short term effects on most town economies were positive the long term impacts were not as great for affected communities. They even found that some negative economic impacts on a town due to a large wildfire could last up to two years.

During the Milli fire Sisters, Oregon experienced this twofold economic impact from the fire. In my interview with James, he explained that people

fighting the fire would spend money at the gas stations and the grocery store. However, because of the increased smoke, from both Milli and fires across the west, the tourism rate was quite low. Meaning much of the town lost income. One store owner said she lost 6 weeks of business/income due to bad smoke conditions (Foster, 2018). Another, Rhonda Barney owner of grizzly Ridge UpCycle, said that not only does her business rely on summer income to get her through the winter but that she was expecting an even bigger crowd in August due to the eclipse but instead business dropped (Foster, 2018). Jeri Larrance the general manager of Snow Cap Drive-In said they have had people canceling events and some weekends they didn't even have a single customer. They were hoping to get enough business over the summer to be able to afford a remodel in the winter but realized that that was not going to happen. Business owners in town who were affected by the fire had the opportunity to apply for a low-interest federal disaster loan for small businesses offered by the US Small Business Administration who declared the Milli fire a disaster, therefore, making the town of Sisters small business able to apply for the loan. (Vulcan, 2017)

Another part of town impacted by the fire and smoke was the Sisters farmers market. In an article about the town's farmers market, one vendor had this to say, "The town was dead. It was really sad. The last market of the season had four vendors; we started out the year with 18" (Brown, 2018). Another event that

was severely affected by the fire was the Sisters Folk Fest. During my interview with Brad, the manager of the Folk Fest, he explained the impacts the fire has on the Festival. He described what a difficult process this was for the organization, both the decision to cancel the event but also dealing with the financial fallout. As a non-profit organization they needed to make sure they had enough to stay afloat but also wanted to respect both the musicians and the ticket holders. In the end artists were paid 50% of their fee and were invited back the next year. And ticket holders were given the option of getting a 35% refund. While the Folk Fest was not the only event that had to cancel that summer they were one of the biggest. Brad also commented that another affect canceling had was on the number of tickets sold the next year. He explained that for the first time in five years the Folk Festival did not sell out. Other industries affected included the lumber that lost in total, about $20 million (Burgers, 2018).

Prevention

When it comes to wildfire prevention, education is the key. Not just learning what to do when there is a fire but how to prevent a fire from happening in the first place. This is especially important in our current society as, “An estimated 72,000 communities are located in wildfire-prone areas” (Harbour, et al., 2014, p. 9). Wildland-urban interface (WUI) happens as cities grow and spread out into more wilderness areas. As of 2014 32% of houses in the US were located in WUI areas and this number continues to grow every year (p. 30). These areas are more prone to wildfires and residents should be aware of the dangers of living in WUI areas. However, it is important to remember that no matter where a building is, given the right conditions, wildfire can affect anyone.

In 2014 the US Department of Agriculture released a comprehensive report detailing different strategies for individual homeowners and communities about how to keep their property and homes safe during a potential forest fire (Harbour, et al., 2014, p. 9). In the report, it explained that communities need to be fire-adapted. This means accepting the risk of wildfires and preparing in advance for fire in order to minimize damage, this reduces both risk and cost to the community (p. 30). This also means that communities don’t just wait until a fire starts before they do anything. Instead, communities are proactively

preparing to have less of a risk of property damage and loss of lives when a fire does happen.

While this will look different for every community it is an important step and requires the cooperation of the entire community including individuals, businesses, emergency responders, landowners, and government agencies. There are many different programs that communities and towns can use to achieve this. The most important thing is for residents to be knowledgeable and prepared to act if and when a fire does occur, allowing communities to safely co-exist with wildfire.

One popular program that many communities, including the town of Sisters, have implemented is The Ready, Set, Go program (RSG) (Harbour, et al., 2014, p. 13). It teaches and encourages residents how to be, "Ready with preparedness understanding, be Set with situational awareness when fire threatens, and be prepared to Go, acting early when a fire starts" (p. 13). Another program that helps do this is the "Firewise Communities Program" which teaches residents about the hazards of wildfires and how they can implement simple concepts around their house to prepare for and reduce the risk of damage from wildfires (p. 25). This program teaches that embers from a fire pose more of a threat to a home than the possibility of actual flames from a fire (p. 29). The program helps teach homeowners the best way to limit the types of ignitions

near their homes to reduce the structure's potential ignitability and reducing flammable vegetation near any structures (p. 25, 32).

There are lots of tools, programs, and websites available to see how fire-prone a part of the country or area of a particular state is. These are all designed to help decision-makers when it comes to preparing for a fire and implementing fire prevention. Individuals should check in with their towns to see what programs might be available and what strategies and tools their towns have in place in case of a wildfire. Signing up for your town's emergency alert system is a great way you can have the best up to date information ("Wildfires", 2020). For people living in central Oregon, including the town of Sisters, the centraloregonfire.org website is available. On it, residents can see what fires are prescribed fires and wildfire. During my interview with Jenny, she said that this website is managed and updated daily to help provide the most up to date information for residents. She said that on the website residents can sign up to receive alerts about wildfires. Jenny also mentioned the Oregon smoke blog where residents can be updates on air qualities due to smoke.

Knowing ahead of time and having a plan for what to do in an emergency cuts down on stress and vulnerability for when a wildfire does occur in your town. Other things individuals can do to help prepare for a fire is to have an emergency kit packed and a checklist of things you need to grab before

evacuation. Having an evacuation plan and route out of town is very important. Jenny ended her interview by saying, “The best time to plan for a wildfire is before it occurs.”

What to Do When There Is a Forest Fire

Now after all the preparation in the case of a wildfire both the town and individuals should be well prepared for when a wildfire does happen. Follow your steps to secure your land, house, and family. Listen to your town's instructions and be prepared to leave if and when you are told to. Call 911 if you see or smell a fire, especially after a thunderstorm. Grab your evacuation pack and checklist and get out ASAP. During evacuations oftentimes there can be a lot of traffic so leave as early as you can. Different states have different education levels and notices, but if you are asked or advised to, leave and leave early. Fires move fast and you don't want to be stuck at home or on the road when it comes.

Before you leave, make sure you prepare your home to prevent the fire from affecting it as much as possible. This can be done by removing combustibles including firewood, yard waste, barbecue grills, and fuel cans, from your yard (“Wildfire Safety Tips”, 2019). Make sure to close all windows, vents, and doors to prevent a draft as well as smoke from entering your home. Shut off natural gas, propane, or fuel oil supplies. As these are combustible, it’s important to store them away from any approaching flames. Fill any large vessels in your houses such as pools, hot tubs, garbage cans, or tubs with water to slow or discourage fire. These can also be used if you get stuck in your home when the fire comes.

It is also important to be aware of different evacuation levels and their meaning so you can act accordingly when the time comes. The USDA put out a description of the evaluation levels which are as follows (“General Descriptions for the Three Evacuation Levels and Necessary Actions by Residents”). A level one is considered an evacuation alert letting residents know that you may need to evacuate later so be prepared by gathering belongings and preparing to move livestock or persons with mobility or medical issues. A level two is an evacuation warning or notice. Here residents are advised to leave if possible. Move livestock and peoples with mobility issues and if you decide to stay be prepared to leave at a moment's notice. And the final level, level three is a request or order of evacuation, depending on the state. Some states have the power to arrest or fine residents who refuse to leave at this level of an evacuation. In Oregon, however, you can choose to stay in your home but emergency services may not be available to you if you do so. By this point, there will often be roadblocks and specific routes to designated areas for people. Take everything you need with you and once you leave don't turn around and go back. Drive carefully and with lights on in case of smoky conditions. Check-in with your town's shelter even if you don't intend to stay there. They will have important information and tips for you.

Summary

In summation, forest fires intensity and duration have been increasing over the years. Around the world, countries have been seeing fires and fire seasons growing larger, hotter, and costing more money each year. This is due in part to changing climate, but also to poor forest management in the past. For years, many organizations viewed fire as a negative occurrence and strived to put all wildfire out quickly. What people at the time failed to realize was that fire was a natural and healthy part of these wildland ecosystems and without it these wildness areas became unhealthy. These policies, of putting out all fires, have led to an increased fuel build up in wildland areas creating wilderness regions prime for Megafires. Recent studies have found that forest thinning, prescribed burning, and “Let it Burn” policies greatly improve forest health and decrease wildfire intensity. However, because of all the years of poor forest management, it is a slow process of getting these wildness areas back into a more natural state of health.

With the growth of the wildland-urban interface (WUI), it is even more important to get these wildness areas back to a healthy and more natural condition. Doing this will protect the people and homes in these areas. This will, however, require the people in WUI to take more responsibility and ownership of the fact that they live in wildfire-prone areas. Towns and individuals need to

manage and prepare properties to help prevent wildfires from spreading to their buildings. It is also important to have a system and plan in place for when a fire does happen so that everyone knows how to proceed. There are many programs designed to help communities do just that such as the “Ready, Set, Go” program.

People who live in WUI also need to understand how important forest management is and realize that that will include prescribed burns that produce smoke. Instead of being upset about the smoke from prescribed burns, residences can be happy and grateful knowing their wilderness areas are being well maintained and treated so as to prevent larger and more destructive wildfires. In the long run, these prescribed burns will help restore forest health, prevent Megafires and the destruction of residential areas, decrease the amount of smoke in residential areas during fire season, and keep towns from experiencing economic setbacks similar to what the tourist town of Sisters Oregon during the 2017 Milli fire experienced. Due to our changing world, there is no longer a way to escape wildfire. We as individuals and decision-makers now simply have to decide what kind of fire and smoke we want to live with, raging out of control infernos or smaller healthy fire that will help restore wildness areas back to health.

Appendix

Interview with Brad from Sisters Folk Fest

Morgan (02:22): So, okay. So I guess one of the starting points is I just would like to know a little bit about, um, the Folk Fest, and your involvement in it. Um,

Brad (02:33): well, um, I guess going way back, the Folk Festival started in 1995.

Morgan (02:40): Okay. I didn't realize it's been around that long.

Brad (02:42): One of your questions was how am I involved? I was a song contest finalist the first two years as a songwriter and a singer. And so I got to know some of the people involved in the festival. Um, I used to come down to Sisters as a kid cause we have a place out in Black Butte Ranch. So I was familiar with the area but I went to school and lived in the Rocky Mountain West for about 12 years before coming back and I came back to Oregon. Instead of going to Portland, which is where I'm from. I came Sisters, um, in 2000 I was asked to start the Americana project. And in 2002 we added a songwriting camp. In 2003, we added a big fundraiser. And so I've been instrumental in helping develop a lot of our programs from ramming fundraisers and I'm now the creative director of the Sisters Folk Festival, which is a nonprofit music and arts education organization. Our mission is on this, on the website, but we, um. I book all the music for uh, the three-day event, the winter concert series, the summer shows, any offseason

shows. Um, I help run our biggest fundraisers, my own two hands and I do all the programming in the schools and so.

Morgan (03:56): Okay. Wow. You are totally all in for it.

Brad (04:00): I'm all in for it. and I've been in for 18 years.

Morgan (04:01): All right.

Brad (04:03): Um, but we have, I mean, presently we have, and I'm happy to just say this so that you don't have to type it, but we have a kindergarten through fourth-grade art teacher that we've been instrumental in developing a fifth through eighth-grade art teacher. We build ukuleles and handmade guitars in the high school woodshop.

Morgan (04:21): My mom was telling me about that. That's so cool.

Brad (04:23): We have a middle school Americana class for eighth-graders. Learn to play guitar and write songs and learn about history. We have a fifth grade piano lab where everybody learns to play and learns music theory through that medium as well as some history. We have a high school Americana project class, which teaches to write songs and record performing an engineer. We record a record every year with high school students of original music. Um, we have an afterschool strings program, which is grades three through six. So there's, our

community involvement is deep, but also our, um, music education program and arts education programming is really deep in the schools. We've been a very important partner with the school district, for that many years as well. Um, three-day festival utilizes 11 venues throughout town, so it's spread out all throughout town. And we book about 50 acts, 50 artists to perform from all over North America and Europe.

Morgan (05:19): Wow. I didn't realize it was that far. Okay.

Brad (05:23): So we run essentially three of the venues. The other eight are in established businesses, which helps to promote economic, uh, vibrancy, and development. Um, that's about it at this juncture.

Morgan (05:39): Okay. Um, I actually attended some of the stuff this last summer.

Brad (05:44): What did you attend? The free summer shows?

Morgan (05:50): Uh, well, no. So because my mom had an extra ticket and she was volunteering and everything like that, I ended up getting a ticket. I came in and um, the one I specifically remember for the festival itself. Yeah. For the festival itself. Um, there was a group who were like three really young kids, um, probably my age I would say. And they had already written albums together and they were like,

Brad (06:13): The Accidentals?

Morgan (06:13): Yes. Oh my gosh. That was them. They were so good and they were just really cool to listen to and hear, um, I really enjoyed it. I thought it was a lot of fun.

Brad (06:24): Yeah. You're right there're awesome.

Morgan (06:26): And also just to know how young they were and how something so passionate they had turned into something that they could actually like do the rest of their lives and be successful at, um, I thought it was amazing.

Brad (06:37): They went to an art school.

Morgan (06:39): Okay.

Brad (06:39): They went to Interlochen I believe. Which is an art, music school.

Morgan (06:44): Okay. Yes, that is helpful. I was curious if anyone that has, um, been a student in town and like used some of your guys' programs and stuff like that has been a part of any of your Sister Folk Fest or anything like that?

Brad (06:58): Um, so I think the short answer is yes, for sure. Well, we do a songwriting camp every year for high school youth and most of the instructors are people that came through our programs. So that's one way. And we've had

two different people that came through our program, become employees of the organization. They're no longer working with us, but that's happened twice. And then quite a few like young artists are now professional musicians and or pursuing things professionally, mostly in music. But Slater Smith is in a band called the Weather Machine and Laura Curtis for a long time was recording and moved to Nashville and there's people out there doing really impressive music that came through our programs.

Morgan (07:39): Yeah. Um, okay. So I guess you kind of touched on this a little bit, like the impacts that the festival has on the community. Um, and I guess the main thing is like what, how that the community missed out on that when it had to be canceled that summer. Um, is there anything specific that you can think of or,

Brad (08:00): Well, I think without knowing exactly what we do, I think, I think the festival acts as a celebration of the end of summer and the economic boom to the town after a very busy summer tourist season generally. Um, we established it directly after labor day to try to work in the shoulder season to bring another event that would bring money to the town. But then from an artistic standpoint, there's a lot of folks that, that use it as like the beginning of their creative year. And I especially mean the people that come to our songwriting camps. So we have about 160 people that attend to songwriting camp up at caldera right

before the festival. And for those people, it was like a, it is often a beginning. It's like the new year for them because they get all this inspiration and creativity and then they use that inspiration and creativity throughout the year to write and record and connect with and stay networked with. And we ran the camp in 2017 but we canceled on Thursday of the camp. So it was cut a little bit short because everything else had been canceled. And that turned out to be a very difficult, very difficult decision. And one of the hardest things I've ever done professionally just cause it was really disappointing to people. Um, and then there was like this lost sense of all these creative types going, where do I go and what do I do? The festivals canceled, the camps canceled, there's nowhere to breathe clean air. So our instructors, like many of them went to the coast to try to get out of the smoke. But the whole state, you know, was so filled with smoke that it was really challenging. And we have like young kids up there like really young, like one-year-olds and instructors that were parents were concerned for the wellbeing of their one-year-olds. And so there was a lot of responsibility and accountability that we felt to handle things well and take care of people's health and wellbeing above our own priorities of hosting the event, you know? So it is a really difficult decision. It had an economic impact, but it really had health concerns that we canceled. We canceled on Wednesday morning of that week because we had so many volunteers that are older that would be helping us set up all of our venues

throughout town. If it was all indoor, we probably could have had the event. But there were also issues within the schools of really poor air quality as well. And school had been canceled two days. So it was um, it was kind of one thing after another and there were some dominoes that were falling that we just had to like honor and acknowledge. And then a big rain came in like Thursday night and Friday was decent weather. Saturday was pretty good, but we had had a month of unbelievably unhealthy air. We just felt like it was so much more important to honor people's health then than stay sort of committed to the goal of, of, of developing, you know, this score or executing and producing our event. Yeah. So does that make sense?

Morgan (11:18): Oh yeah, absolutely. So do you know possibly some of the economic effects of it? I know you said that you were mostly more concerned with the health and things like that.

Brad (11:29): Well we did an economic impact study in 2014 and it came back at like 1.2 million for the community. So to not have that, um, obviously flights in and out of town and maybe some restaurant, that kind of thing. But yeah, so I mean, there was a big economic impact that would probably be in the, in the $1 million kind of range. If you take that number and they extrapolated to the restaurants and the hotels and you know, everybody that benefits from it as far as the community and the region because people come in from all over the

country for the event. But, but I think from an emotional, spiritual experience, I think people felt like they were a little lost based on it not happening. And there was also a sense of, of, you know, there was also a sense of gratitude of recognizing what, what it is and what people really look forward to each year. I mean, I think there's something really special about the festival itself of bringing people together and having a more emotional, spiritual kind of experience that's not just musical, a music event. I mean, people really gain a lot of personal growth even out of it, especially tied to the camp.

Morgan (12:51): Yeah. It sounded like.

Brad (12:53): yeah, it's powerful. Did that answer your question?

Morgan (13:08): Yeah. Oh yeah.

Brad (13:08): I'm just rambling.

Morgan (13:08): No, and that's perfect too. I mean, I, I wrote some questions, but I really, I'm not specifically sure exactly what I'm looking for.

Brad (13:16): Sure. For sure. Well, let me, let me share a personal note, and this is specific to me and this is the part that I said is just really personal. So one thing that happened in that week was, um, and it's actually, I was anticipating having this conversation with you and I was a little, um, there's still an emotional sort of

scar for me and it's not just about the event, but it's just revisiting that time period. Um, I don't know if you've, you've probably been in, in forest fires, but it's, it's really oppressive. It's like, it's like a heavy-duty dose of depression and feeling crappy and a lot of worry and anxiety and like this responsibility of these 4 or 5,000 people that are coming into your town for this thing. But also all these people up at the camp. And so we were monitoring it every day, but we canceled on Wednesday. They canceled the camp on Thursday. We canceled on Thursday because everything else had been canceled up to that point. We have a sponsor's event on Thursday night. We were kind of like, okay, cancel the festival. We'll still have the sponsors' event. Then we looked at it and went, well we can have a sponsored event. There's no reason for it cause we're not going to have a festival. So we canceled that. But the camp was still chugging along cause it was up in the mountains and a little bit outside of the smoke. Um, but on Thursday it was like, are we kind of kidding ourselves that we're going to continue to do this? In really crappy air quality. Um, when people are kind of nervous and worried, all the artists up there know that they're now not playing the festival. And They're wondering, am I still going to get paid? I mean, there's a lot there. So I was communicating with artists from all over the country and flying here saying, is it still going to happen? Is it still going to happen? And I remember talking to one act and saying on Thursday like right now it's still going to happen. She's like,

okay, I'm getting on a plane from New York. You know, if it's going to happen then I'm coming. And I said it's still gonna happen. And then she called me later that day from Denver and I was like, we canceled. She's like, what? You know? So it's that kind of, and these are, this is a friend of sorts, you know, that I have a real relationship with, but I'm going, I'm sorry, but we were doing everything we could. So anyway, on Friday morning I sort of had it in me to still have something happen. So I started talking to a number of venues that were indoor saying there's artists in town because some artists had already traveled here. They were in Portland going, can we come down? Like what do we do? And I said, you know, if you show up, no we're not doing the festival. It's canceled. No, you're not playing the sponsor's event. It's canceled. But if you're here we'll still honor that you're here and you can stay in the hotels that we have available to you. So we had some artists in town and all the people that were up at camp were still in town obviously. Cause there's like 14 songwriters, musicians, bands. So I was on this, we're going to have something happen in town, even if it's free, you know, we're just going to have an event and a party to say thank you. Sorry, here's some music to sort of alleviate any sort of sorrow. And so I was, I was making that happen actually here and I was right outside. And um, and on the personal note, I got a call from my brother that my dad had had a stroke. And so I dropped everything and told key people in the organization, Amy Helm, Martha Scanlon,

the East Pointers, Ravi Folks. There's a number of people that still want to play and we're going to do something at the Belfry. And I was starting to work with one of our venues, the Belfry to do that. I said, but I gotta go. And I hopped on a plane and flew to Seattle. And then my dad passed away the next day. So that's the personal story of the fire and all that. So then I was in Seattle for a week, staying with my mom, trying to deal with artists' contracts, managers, agents, what are we going to do, how are we going to do it, what's the economic impact of canceling, first of all. Um, and we ultimately decided, and I mean this is pertinent to the story for sure, but we ultimately decided that we would pay the artists 50% of their fee and invite them back the next year. We didn't have event insurance, so we felt like from an economic standpoint we could take that kind of financial hit and still be okay. Then we went out to our ticket holders and said, look, this was a natural disaster. There wasn't much we could do really sorry for canceling and we'll offer you, I think it was 35% of your ticket price back if you choose to take that. That was also a very difficult decision. What's fair, how do we stay in integrity, what's the right thing to do? And we went back and forth and as a nonprofit organization, we didn't want to like there's no refunds to the tickets and we say that on our tickets and at the same time we're thinking these are the same people that love what we do. They'll be buying tickets next year. How do we treat them with respect while at the same time sort of make sure that

we don't fold or go under financially by being either too generous or generous in a way that would really hurt the ability to continue on.

Morgan (18:31): Yeah.

Brad (18:33): So there were multiple levels of decisions that had major impacts that we had to weigh throughout the week as well as the weeks after. So then what do you do with sponsors? How do you handle that for the next year? And so this last year, having this, what I considered was an awesome festival.

Morgan (18:57): Yeah. I thought it turned out great.

Brad (18:59): It was really gratifying. It's very redemptive.

Morgan (19:05): So I was going to ask if it seemed like there were any consequences this past year by having to cancel the year before.

Brad (19:11): Well, I would say that for the first time in five years, we did not sell out. We were 150 short of selling out, even though we sold as many tickets as we had sold in 2016 we thought that we would sell 150 to 200 more in 17. So we still offered that many tickets. So we sold as many as when we'd sold out two years ago. But we didn't of the, allotted numbers that we had, we didn't quite sell out. So I think that was one consequence. We had some people that didn't appreciate how we handle things. We had some people that didn't agree with how we

handled things. Um, but we also were one of many nonprofits that had to cancel that year. Cycle Oregon canceled some of the Brit festival canceled, you know. And like at the time that we were trying to figure out if we could hold the event or not, the Gorge fire broke out, you know. And then there was like two or three fires South of us and so it felt like no matter what we did there were fires everywhere. And so the idea of like moving the festival like to Redmond or to the fairgrounds or to Bend somewhere, it just wasn't an option. Does that make sense?

Morgan (20:24): Oh yeah, of course. Are you doing okay on time?

Brad (20:31): I'm good.

Morgan (20:32): Cool.

Brad (20:33): So I think it had a big impact. I really do. And it, and it, it's sort of begs the question of, you know, with changing climate, different landscape as far as the world goes. Do we need to look at our model as well as our timing and making any dramatic changes? You know, last year there was, there were forest fires but not as bad as the year before. Much, much, much better. But there was a lot of smoke in town Thursday night, last year of the event. So it's like, is September a good time in central Oregon to have a big outdoor music event? That's a big question. Do we shift it and change it to another time period of the

year? Do we move more things indoors? There's, there's a lot there for strategically as an organization to go, it was fine in 1995 is it fine in 2018, 2019?

Morgan (22:25): Yeah. Definitely something to consider. Um, so another question I was going to ask was if you felt like there was any help from like the city or anything like that, maybe not necessarily partially for the organization but also like how they just help the city in general with the fire and the smoke and things like that?

Brad (22:50): It's a good, it's a good question. I mean, I will say the school district as a partner was very helpful in that we very quickly, I very quickly started making contingency plans to move everything indoors to the schools. High school and middle school elementary and utilize multiple spaces in different things. And that plan is still one that we kind of have for the future. But it was on the fly that we were doing that. I think the city is incredibly supportive of the Sisters folk festival and I think they've been awesome. And I really mean that because there are other communities in central Oregon where they're not as close of a partner and as adaptable and compatible as partners. And I think Sisters is hugely helpful. So I think the city, I can't speak to what their response was and how they could do anything differently, but they were right there if we needed anything in return. And we were in constant communication with them and the County and the fire and sheriffs, um, you know, we recognize that it wasn't just a Folk Festival

decision. It was kind of a region-wide. What are we going to do about this? And one of the things was, and if you spoke with our, with our finance per our managing director of the Sisters folk festival, um, there was this whole decision-making process that we were doing with the, with the head of the County health department. Could we, could we still have the event with the smoke levels that we presently were seeing and what responsibility legally what we have in that. And it was, it was when one of the people at the County said we would potentially be negligent if we hosted the event still. That was one of the biggest sort of last straws that said we can't host the event cause we will actually, the County is telling us you might be held liable if somebody were to have a heart attack because of the air quality levels that made us go okay all signs are saying don't host the event, drop the event, keep everybody's health and well being at the forefront. And it's okay. It's a three-day music festival even though we work all year for it. And then for my position, it made 2017 a little bit easier because we had invited all those artists. It made 2018 a little bit easier because we had invited all those artists back. So I already had 30 of 50 bookings done. So there was a silver lining to it all. That all these amazing artists that we wanted in 2017 most of them came back in 2018.

Morgan (25:30): Well, that's great that they came back. Very exciting. Um, so I guess that kind of leads into like if in the future there is another health issue like

that, how do you guys think, I know you kind of touched on it a little bit different options. Would you use the schools and move them indoors you think?

Brad (25:49): I think if it weren't as extreme as 2017 we would, we would have a contingency plan that we would move, move, move things. We've developed some adaptability plan that is a contingency to do that. I would also say though that it's a pretty difficult thing in the integrity of the experience and the event itself. We're a little concerned would suffer because now all of a sudden you're in a school instead of in the tent over there having a beer. At the same time bringing people together in community and music is like the focal point. So I don't think that it would be a deal-breaker for us.

Morgan (26:28): Okay.

Brad (26:29): Um, we purchased event insurance after that event and there have been a number of years that it was a close call, but it never actually gotten to that point. So I think that yeah, it would, it would give us better information and a better process and system to make a good decision after going through that. Would we do things differently? Not that differently, but we'd be better prepared for it I think.

Morgan (26:59): Oh absolutely yeah. Having experienced something similar in the past.

Brad (27:02): Yeah. Yup.

Morgan (27:11): So I guess just one of like kind of the last questions. It's just like if there's any specific information that you would like people in the community or other communities, to know and like things that were helpful in the recovery process or like the next year, how...

Brad (27:30): Well I think, you know, one thing we learned is that communication is key. And I think that through it all, you know, keeping people's health and well being at the forefront of what you're, the decisions you're making is really important. There are those that were criticized because we canceled and then it was pretty good weather that weekend, but we don't know that, and there's so much that goes into our model and setting up the event as we do it, then it's not much, there wasn't a lot of options and I would just share that being transparent with people in your communication that we're thinking about it, here's the information that we have. And on a day to day sort of updating that information is really important and then being as gracious and generous as possible, you know, canceling, something like that, explaining why you had to do it. What the decision process, decision-making process was. And, um, and that the number one goal is to keep people safe and well. I think I, I think with any natural disasters and you know, more and more happening these days, just any way that we can come together to support one another's efforts, the better. I'm thinking

about like, you know, here's the other thing, is the fires in California are taking out like 14,000 structures. Peoples homes, people are dying. You know, the Milli fire was in the forest. It burned 120,000 acres or something. I don't think one structure with burned. Nobody died. So one thing I would say, and it's not a critical note, is that the fire was burning for three days as we watched it on Black Crater and wondering if it was going to be put out. So I think policies, there needs to be a heightened response and policies could be looked at very carefully about how to respond. It seemed like this last summer if a fire started near us it was going to be put out like that [snaps fingers]. That fire was on fire for two and a half days and we watched it burning and nothing was being done. And nothing was being done because there were other fires that firefighters were responding to. So and so I'm not being critical of the response but I think the response needs to be could be seen as um, it's necessary to look at it a little more carefully and closely and respond to it quicker if that's the case. Because as we see now, the landscape has changed. I mean at one point we were concerned that the whole town could burn like Paradise. literally come through and wipe this entire area out. And I think, I think that things have changed and maybe policies and procedures of how to respond to not only natural disasters but forest fire specifically probably need to be looked at and updated. It seemed like this year they were ready to respond quicker if anything happened.

Morgan (30:59): Compared to 2017?

Brad (31:02): Yeah. Yeah. But I don't and I don't want that to come off as me being critical of the forest service or their response or whatever. Cause I don't know enough about forest fires to know. What I know is there was a lot of talk of like, why wasn't it put out sooner? And why wasn't it just responded to sooner? And I think a lot of it was state and local resources being elsewhere. Other fires at the time, wilderness fires aren't necessarily put out, you know immediately cause they can burn because that's part of the health and well being of forests. So it's a, it's a tricky and complex issue.

Morgan (31:40): Okay. Well, thank you for your transparency with that.

Brad (31:43): I don't want to sound like an expert cause I'm not.

Morgan (31:48): I mean nobody really is on anything. Right. We're always still learning. And so I think those are kind of like all the specific questions I had. Um, unless there was something more that you wanted to mention or anything.

Brad (32:04): No. I just think it's a traumatic experience for everybody that we want to leave behind, but it's a historical reference point for us to learn from.

Morgan (32:11): Yeah. I agree. A good way of putting it. Thank you.

Brad (32:15): That's probably my last quote.

Morgan (32:17): Well, it was the perfect last quote!

Interview with James from the Forest Service

Morgan (00:00:32): Um, so is it okay, first of all, I wanted to ask if it's okay if I record this conversation just for my own personal notes for when I work on my project later. Okay, perfect. Thank you. Um, okay, so I know it's been a little while since we first since I first reached out to you. So, um, I'll just kind of explain what my project is. So what I'm doing is I'm writing my thesis project for my college senior project, um, is about the Sister fire that happened two summers ago, the Milli fire and specifically how it affected community members in the area. And so one way that I'm doing that is by reaching out and trying to interview some people in the area, um, who were impacted by the fire. And so I know with you working for the Sisters forest service, that that was a big part of your life during that time. And so I thought it would be really awesome to be able to talk to you and figure out and see how it affected you and kind of your role in how you helped with that fire and how you saw it affect other people as well. Does, uh, do you have any questions so far or should I just like jump into some of my questions?

James (00:01:52): Uh, no. I mean, no, I don't have any questions so far per se. I can give you a little context in terms of like, do you understand my job, or what my role in the overall effort is?

Morgan (00:02:06): Um, actually no, that's definitely one thing that I was hoping you could kind of share with me.

James (00:02:11): Okay. Um, you want me to do that now?

Morgan (00:02:14): Yeah, sure. That'd be great.

James (00:02:16): Okay. So the way the forest service is set up uh, basically there's a forest service supervisor's office, the head of the office, head of the national forest for the Deschutes National Forest and each national forest has a supervisor's office that the forest when I say for the staff of, uh, the forest supervisor, that's the person in charge of the overall forest, they all sit with, at that location. And then there's each, each forest has different districts that are broken up into certain, uh, you know, acreages, um, that all work for the forest supervisor's office. So the Deschutes National Forest has three ranger districts. Now. They used to have a few more, but they've been consolidated over time. But there's three ranger districts that all work with the supervisor's office. And so that's the Sisters ranger district, the Bend Fort Rock ranger district, and then the Crescent ranger district which is on the Southern end of the forest. Um, so each

ranger, district, has a district ranger, that is the person that's in charge, they make, they're the decision-makers there. They are the administrators that, you know, they sign for certain projects that actually is going to affect the federal Land. Um, they're the person that puts the pen to the paper in terms of making the decision of whether to do the project or not do the project. Um, and then each of those district rangers have a support staff just like they do at that forest supervisor level. And so the support staff function is what my position is, so I'm the fire management officer and basically I'm one of the staff folks that work with the district rangers. And then there's like recreation, uh, [inaudible] culture, wildlife administration and those, those other positions there, uh, all work for the district Rangers as well. So anytime you get into those kinds of specialty areas, like if there's a wildlife issue that a district ranger gets to coordinate with that wildlife specialist to get information to be able to make an informed decision on whatever that's going to affect whatever it was done. So that's how it works for me in fire as well. So I'm the fire management officer, which is basically like, um, any fire and flues related, um, I manage in my, uh, you know, in my sort of per view to make decisions on that. And then, um, if it's going to affect the land, then I coordinate with the district Ranger to provide insight, input so they can make an informed decision. It's kinda like basically my job as a fire chief for the most part for the Sisters ranger district. Like basically in the layman's terms for my overall

title, uh, in our federal system is fire management officer. Uh, and so anytime, basically I, I coordinate and manage the employees that go out and do fire suppression, um, on the Sisters ranger district, we have two fire engines, um, and 10 person initial attack, uh, crew. Um, and then we have several other miscellaneous overhead positions, uh, that are all by the staff that, uh, support, you know, the fire operations stuff. And we also have two fire lookouts. That, you know, are up on mountain tops and reports smoke. You know, the folks that we have to go and respond. Um, and so anything that's related to a fire suppression, I manage anything that's related to, uh, fuels management. And I'm not sure if you're familiar with what that is, but, um, any of the prescribed burning any, of the thinning, uh, any of the pile burning. All that stuff is under my purview as well. In terms of the folks that do the suppression work, all the fuels work. Um, and so we do a lot of project planning in terms of, you know, treating the forest prior to the fire. And then we do, uh, you know, we do the fire suppression side when it's fire season. And so I was directly involved with the Milli Fire. Basically that I was the fire chief for the, for the federal ground. Um, and so any of the, uh, you know, sort of working with the incident management team, uh, providing, um, you know, uh, information like local, local, you know, strategic information or any sort of, uh, local factors I'm the person that provides all of that information to the management team that came in to help us manage the fire.

Um, and so any coordination with that team was going through myself basically. Um, and, and then the district ranger and the forest supervisors. So if we get a large fire, um, you know, I ended up working with the forest supervisor and the district ranger kind of in real-time to coordinate that effort with the team and coordinate getting the fire put out.

Morgan (00:08:00): Have you guys had any fires recently?

James (00:08:03): Um, we had a few small ones, but nothing major this year. Just a few initial attacks, you know. So overall, um, you know, some of the statistics that it's pretty much nationwide. It's a, you know, our initial attack efforts like 97 to 98%, uh, success rate and it's generally in that high nineties on the success rate of initial attack and that's pretty much across the nation. With all of the five, uh, land management agencies the federal government, which would be like the forest service, the [inaudible], the national park service, the Bureau of Indian Affairs, and official wildlife service. So really, I mean, all these mega-fires that you hear about that are on the TV that makes the news, that, you know, affect the economy and all those sorts of things. That's really small, like 1 to 3%.

Morgan (00:09:06): Okay. Wow.

James (00:09:09): On an, on a given year.

Morgan (00:09:12): Okay. So I know it's been a little while since the Milli fire happened. Um, but I was curious if you remember, like what, how kind of that happened and how you guys went about attacking it and dealing with that.

James (00:09:34): Um, yeah, I can go off memory. I mean, I have a full PowerPoint cause I've given a presentation a number of times. But my computer's actually broken. That's where, yeah, it broke the other day. It won't turn on and I'm waiting for our CIO group to either get me a new one or fix it.

Morgan (00:09:54): yeah. Okay.

James (00:09:57): Um, so I don't know the exact dates and all that in front of me. But based off of memory. Um, so we had other fires going on. When Milli started. There was the heavy, heavy regional smoke and regional haze across basically the whole Northwest. Uh, there were fires going on elsewhere in Oregon. There were fires going on in Northern California, fires in Montana, fires in Washington, fires in Canada. Uh, so there was pretty much heavy regional smoke. And when that happens, it's pretty hard for our lookout to see anything. It's just like looking at, you know, fog or I don't know where you live, but if you've ever endured some of that, you know, kind of that regional summertime smoke.

Morgan (00:10:45): Yeah. Well, I'm actually from Bend, so I was in Bend during the time of the fire, so,

James (00:10:50): okay. So you remember that regional smoke that was going on? Hopefully

Morgan (00:10:56): I do. Yes.

James (00:10:58): So yeah, so there was that. We had the regional, smoke from their fires all over Oregon. We had our own fires. So, well let me backup. Um, so central Oregon, is broken up into, uh, we, we, we do a service first response, that's what it's called. And that means no matter where the fires at, it doesn't matter what color the vehicles are. And when I say color, I mean, uh, you know, the forest service, we generally get called Greenland because our, that's our color for our agency. And then the Bureau of land management, the BLM, they're called yellow and their trucks are yellow our trucks are green. And then you have, uh, the fire departments, the municipal fire departments, and most of their trucks are all red. Uh, and then the state ground, their trucks are all white. So when I, it doesn't matter the color of the fire truck, it's all based off closest forces. So the closest fire engine is going to respond to the fire, no matter if it's forest service jurisdiction or BLM jurisdiction or state or municipality, it doesn't matter. And so central Oregon as a whole is broken up. So when I said, you know, based on the fire chief for uh, you know, the Sisters forest services for Sisters ranger district, I also oversee a portion of the primal District BLM. And I also see a portion of the Crooked river national grassland which is administered by the

Ochoco national forest. And so within my divisional boundaries, I have different uh, agents that I basically work for. And then there's also state grounds. And then we have a lot of fire departments that are all within my divisional boundaries. The, and the Cascade division boundary basically is the Cascade crest, so Broken Top all the way up to Mount Jefferson on the Southern end. And then we had Lake Billy Chinook on the North end and then it goes into the Deschutes River and then my Eastern boundaries and the Deschutes River all the way down basically to Bend.

Morgan (00:13:17): Wow. Okay.

James (00:13:18): Well pretty much Tumalo is where it stops. And then it cuts back up towards Broken Top. So it's, it's about 550,000 acres, roughly. And so, so with that, and why I wanted to mention that is that we had other fires going on in the nation at that time, uh, I'm not sure if you're familiar with the typing of what fires are and the management that goes into that. But basically the scale is five, through one, one being the lowest, five being the lowest complexity and one being the most complex.

James (00:13:56): So everything in our typing, if it's a type one, it's kind of like the highest complexity management team, or it's the fire resources that have the most training, and the most experience. The five type five-zone, uh, that's like

low complexity, low training, et cetera, et cetera, et cetera. Low skill level. Um, so we had several types three fires and type three is basically where that, uh, go from the low complexity to like a moderate [Inaudible]. So our type four, type five fires, that's basically like a day event. It doesn't make the news, you don't really hear about it. You know, it's people putting them, putting fires out, uh, that really the public never even hears about. And that's basically one, one initial attack. That's where that initial attack period, uh, fires get put out. And then when they get to the type three-level, that's what we call an extended attack. So anything three, two, or one is an extended attack fire. So we had several type three fires on [inaudible] going on. Uh, one of the fires was named the white shoes and they were all up in our the Crooked River national grassland area, just North of Sisters and the fuel type there is that, uh, Juniper stage and sheet grass a lot of grass. And so we had several thousand acres on fire over there and that fire was actually threatening, a home to the lower bridge area. And we had most of the large air tankers on that fire trying to stop the fire before burning into a home. The private ground that day that Milli was reported. And so we only have so many resources and then there's a lot of resource prioritization that goes on.

Morgan (00:15:58): Oh of course, yeah.

James (00:15:58): resource prioritization is what goes on in our own local area inside Central Oregon. And everything's attached to a bigger piece of the puzzle.

So the resource that we have under our control in Central Oregon that we prioritized within our own group and those resources all get, also get prioritized at the regional level in our region consists of Washington and Oregon. Um, and so there's, there's a regional prioritization piece that goes on there and those folks actually have control of our votes. And so, uh, any of our type one resources also are controlled at the Portland level. That's where the regional office is and our regional dispatches out of that location so they can control some of the purse strings on where resources go. And then we also have our own control of our engine, but some of our own forest sources where they go, anytime we need extra support, we go to that regional level and ask for resources. And then in terms of that, there's a national level, uh, that has oversight of those resources as well. And they're out of [inaudible]. So if I asked for an air tanker, it goes to the regional office and it goes to the national office in terms of priority, uh, because there could be other fires that need those critical air tankers. Right. Or other fires out there that need critical hotshot crews or other fires out there that need those critical type one type management team. Um, and those resources are all prioritized at those levels. So like there was a bunch of stuff going on in the nation, uh, and we asked for the air tankers and we got the air tankers because of the house, the housing threat that was going on.

Morgan (00:17:56): Gotcha. Okay.

James (00:17:57): Uh, at the same time, like I mentioned, at the same time, the Milli fire was started or, uh, got reported and it was reported at like roughly a day or two before. like I said, I don't have the exact date in front of me right now, but it was reported initially when we had that regional haze that there might have been a smoke report. Our, uh, lookouts, scanned the area and we also had a recon plane in the area and, uh, they, they didn't see any smoke. Uh, the day after that regional haze blew out, uh, Milli fire, we could see it, it went to 50 acres. Uh, and we put people on it. We put the Central Oregon repel group on it, which are firefighters that repel out of a helicopter and they slide down ropes into the wilderness and start fighting that fire. Um, in the meantime, while they were doing that with it? You know, there's two different ways we fight fire or the kind of the tactics or strategies, tactics that go with that. Basically it's direct or indirect, so direct is the firefighters right on the fires edge and they're digging a fire line and it's pressing that fire right next to it. And so those repellers were up there doing that same thing they were doing, going direct on the fire edge. Um, the fire edge when Milli started it started in the green and what I mean by green, it started in an area that was never burned before. It burned into an old Firescar from 2006. And at that fire scar where it burned into had a bunch of dead snags or dead trees that were standing. And those are actually a pretty big issue and a big threat to firefighters because once they've been burned before the woods dry

and there's no moisture in those trees, and fire can get into them and burn them over quite quickly. Where a green forest fire burns through it, uh, those trees stay standing and unless they get fire up in 'em and actually totally consume that [inaudible] the trees are not going to fall over, you know, in your general sense. So, uh, the repellers were, you know, working that, uh, the edge that was in the green and you know, the unburned area and fighting the fire along that, that green timber, um, and they weren't going into the area that had been previously burned just due to the safety threat. Uh, so that happened for a couple of days that they were up there trying to get an anchor point established on that edge that was in the unburned area before. In the meantime, we were still working with some heavy equipment down on the roads to the East, outside the wilderness boundary with heavy equipment trying to open up some of the old fire lines that were used in that 2006, uh, fire, which was called the Black Crater. And just trying to build in an indirect fire line in case that thing, decided to try to come out of the wilderness, uh, faster than we were ready for it too. And so we were kind of doing both. We were doing the direct and doing the indirect attack to be prepared because we've seen in our previous history, uh, fires that get up in the wilderness, you know, they started up there, uh, it's pretty inaccessible ground. We put people on it, uh, and then they ended up moving faster than we can, you know, suppress it. And then we come back to that, like I mentioned, you

know, it's the 1 to 2, maybe 3% on the high end, um, that turn into those large tires. Most of the time we put fires out in the wilderness and people never even know about. Never even hear about it. In Sisters because they have been used to uh, you know, fires and they've been used to, uh, you know, just the way the backdrop sits, your past from living in Bend. You know, you see the white peaks and you see an airplane flying if it's a heavy air tanker flying and dropping the targets. So if they don't see those planes flying, they don't think anybody's doing anything. And that's been a lot of like the talk, there's been a lot of people like, well you guys didn't suppress that. You didn't put it out. You know, we didn't see any aircraft flying, so if you weren't doing anything. That's like, well that's actually not true. There was a lot going on. Um, that you folks didn't see just because the air tankers weren't flying. And as I mentioned, the air tankers are flying on some of our other fires within the area and they were flying other fires in the nation. And the other piece to that is people don't understand that there's only so many air tankers and roughly that numbers around 20 or so for the whole nation.

Morgan (00:23:04): Oh, wow.

James (00:23:08): You can actually Google that, find out what the actual number is. I'd be able to tell you if I had my computer. But that being said, there's only so many air tankers those air tankers are spread across, you know, the Western United States when it's fire season and those air tankers fly to areas that are

needed daily, uh, that need retarded, they don't sit in a particular spot. Uh, if there's nothing going on there. You know, they're not, they get, they get position, but they don't have a home base and they go to where the fire that needs them the most. That's where they go on a daily basis and they're prioritized daily and sometimes hourly. And so when Milli broke, we had our other fires going on. We were at a, uh, what we call a preparedness level or preparedness level planning level. It's kind of the same within and are intertwined, but we were at that planning level of five, four or five, if I can remember correctly, uh, the highest scale of resource drawdown and resource commitment across the nation. And as I told you earlier, basically the type one is kind of that, that highest level of training or experience and whatnot, well on that planning level scale, um, preparing this level of scale, it's the opposite. So when we're planning level preparedness level 1, uh, and you can Google that information and kind of get the breakdown. but when it's a 1, pretty much nothing going on, the resources aren't stressed or strapped. And then when you jump up to 2 to 3 or 4, 5, 5, being the highest, there's really, there aren't any resources out there that aren't busy doing something and it requires that regional and national, uh, resource allocation and prioritization that happens. And so that's where we were at that time period when Milli was going on. Uh, we were at that, we had a 4 at that point and shortly thereafter it went to a 5 and we actually became the number

one priority fire in the nation for about a week. If you, uh, the SIT report, the national interagency situation report, you can pull that up. Uh, you know, you can actually, there's an archive one, so you can pull it up. The time period that Milli broke or you could just pull it up, they updated daily this time of year. But that's all set up as to what regions the priority, what fires the priority fire. Uh, and based the start of the page of the document, whatever's up on the top, whatever geographic area. So it's like the Pacific Northwest or the Southwestern United States or California. Uh, whatever's at the top of that list is what's like the highest priority nationwide. So we found ourselves at the very top of that with Milli, uh, and we were able to basically just prior to the bumping to that level, we actually were able to get a type 1 engine in there that came out of the Southwest out of Arizona, New Mexico to come up and help us. And they showed up a few days after the incident started. Um, and like I said, we were already doing that direct attack with repellers up in the wilderness and we were also doing some indirect attack, uh, down outside of the wilderness. You know, basically the closest road system to the wilderness boundaries, uh, where some of the snags and stuff were from those previous fires. We were knocking the snags down and getting it set up in case we had to do an indirect attack. And most of the time our indirect attack is you build a line. So the fire line with the road, using the road or using a crew or

your equipment, uh, or using that preexisting road. And then we end up doing the backfire off of it. If that makes sense.

Morgan (00:27:39): What do you mean by a backfire off of it?

James (00:27:42): So that's where we put in the control line and then we'll actually light a fighter that burns into the fire that's out of control. So basically we end up burning the fuel prior to the fire reaching it. Does that make sense?

Morgan (00:28:06): Yes.

James (00:28:06): And so yeah, we were, we were putting in those other fire lines on that indirect fashion with some equipment and with the people that we had at the time that we could get resource-wise because Milli wasn't, at the top of the list for those first few days. Once it started moving towards town and threatening the town, we started getting, uh, you know, the subdivisions and whatnot, uh, evacuated. That's when we climbed to the top of that prioritization. And we were able to get a few more resources. So there is a time delay that happens. You know, you don't instantly go to the top of the list. unless your fire, once it starts and it burns a bunch of acres and threatens a bunch of homes right away. It takes a little bit of that time lag, to get it through from the local level here in Central Oregon to the regional levels, uh, purview. And then up to that national level, then we have to mobilize the resources around either Oregon or Washington or

move the resources around the country to come and help support those incidents.

Morgan (00:29:19): That makes sense. Yeah.

James (00:29:24): And a lot of folks, you know, local folks, folks in general, you know, they think we have a bunch of people just sitting here, you know, ready to attack the largest blazes they've ever seen and that's just not the way it works. You know, put the fires out small and then like I said when we get the 1 to 3% of those fires that go to that large level. Um, there's a bit of a time lag to get people from across the country or wherever they're at to help support and they come in waves. You know, cause you'll get people from around Oregon and people around Washington that show up and then as you're further away, [inaudible] further away those resources are coming towards you, it's just that time delay. Um, so yeah, as the fire started threatening the community. Which I don't remember how many days into it, it was, a few days to do it, three or four days or something like that. Uh, if I get my computer back here soon, I could probably forward you the PowerPoint that I have.

Morgan (00:30:36): Yeah, that would be great if like you said, if your computer starts working.

James (00:30:41): Uh, well I have it on a thumb drive. I just don't have anything to plug it into.

Morgan (00:30:45): Okay.

James (00:30:48): But that's the problem. Yeah. But it has the timeline and the folks and the other fires that we had going on. And it has kind of what was going on nationally, uh, it kind of sets that stage. Um, you know, of what we were dealing with, things of that nature. So, uh, yeah, we bumped up to a number 1 fire in the nation for about a week, um, you know, as the town was being threatened and the subdivisions outside of Sisters were being threatened. Um, and then the [inaudible] fire down in southwest Oregon, uh, which had been brewing for a while, but started to take [inaudible], uh, some of the resources that we had and then it became the number 1 priority. Which was number one can change daily or hourly depending on what's going on. So, uh, long story short there, the team was here for 14 days, the type 1 management team out of Arizona, New Mexico, and at that time period, you know, it's still a bunch of smoke. Smoke off of the Milli Fire and while the Milli fire was going on the Willamette national forest was also dealing with a really heavy fire load uh, just on the West side of the Cascades. Literally on the other side of the [inaudible]. they were having fires over there that were actually large fires as well and were burning together, uh, that were producing smoke in with Milli smoke. Uh, and

then regional smoke and you know, kind of that whole western United States that was dealing with fires, the smoke that was going on. Cause the one thing that people also don't understand just because the fire's right outside your door and it's producing some smoke, the Milli fire started to wind down and we had the upper hand on it. the lines were secure and there really wasn't much smoke coming off of it, but people thought it was still Milli smoke. There were other fires in the area that they couldn't see that were producing smoke into the air shed. But they can't break that piece. They can't differentiate cause they can't see those fires. They just assume that it's the Milli fire. Where I'm going with that in terms of like, you know, when you start to talk to the other folks in the community or whatever and the economic impact that large buyers can have, there's kind of a twofold, uh, the community, uh, the economic impact when we have a large fire brings in a lot of people from the outside that spend money in the community. You know, like the gas stations, grocery stores, sometimes the restaurants, uh, things of that nature with the influx of people. Because you can get anywhere from five, six, 700, 800 people, a thousand people that come in and spend some money. While, you know, when they're off shift or just traveling to the fire edge, they stopped to get gas. They stop and get a soft drink cause they haven't had a soft drink in, you know, 10 days. They're just drinking water and Gatorade, you know, that sort of thing. But the smoke also has that negative

impact in terms of people's [inaudible]. And then it also has a negative impact in areas that have heavy tourism, which you know Central Oregon does. Um, it's a big tourist destination walk through when it's the summertime and if there is a bunch of smoke, people aren't walking around the shops looking at the antique stores and things of that nature. And so, you know, there was a heavy impact, um, from Milli and then it had the impact from the regional haze and regional smoke that we were dealing with that was settling in Central Oregon. Um, but like I mentioned, people can't, you know, they just say, Oh, it was Milli. Milli caused it all. It was definitely something that contributed, but it wasn't the end all be all. Um, and so the folk festival was also canceled.

Morgan (00:35:20): Yes.

James (00:35:20): Which is about a million dollars into Central Oregon Sister's proper economy. Um, the number that I've heard being thrown around, um, and actually the day that the weekend that the festival was supposed to go on, uh, the air was the clearest it had been, you know, for weeks. Um, but, uh, you know, the board of the folk festival and some of the city council folks and whatnot decided to cancel it prior to the event, thinking that we'd still have smoke and people wouldn't come. Um, so it's, you know, it's a challenge, you know, what the air pattern's doing and you know, what's, what's happening, how do you make a real-time, you know, well, when the wind starts blowing and the smoke

clears out the air shed, you know, it's hard to make that call. Uh, so yeah, I mean, like I said, there's definitely some economic impacts that happened, you know, positive and negative, you know, In Sister's case probably more negative. But, you know, it's, it's something that we're seeing across the Western United States and in the fire-adapted ecosystem in the forest that the forests here and most of the Western forests have fire in, it's a natural part of that ecosystem. It's inevitable. It's there, it's going to happen. Um, you know, we've been putting fires out really well for 114 years now. The forest or pack full in areas that we haven't done a fuels treatments and thin and, and uh, you know, sometimes you can have as many firefighters as you want and you're still not going to be able to put that fire out small because it grows to the point where we'd end up killing somebody if you kept in there trying to do something that wasn't gonna work. And that's one thing that, uh, you know, our agency and what we try to do is none of the trees are worth anybody's life. Um, and so there's certain situations that we don't want to put people in. Um, like I said, into a snag patch. if the fires in a snag patch and we can't control or mitigate those snag issues without them falling on somebody and killing somebody. We're not going to put people in them. Um, so we can be a little further out from that fire trying to do an indirect attack on it. Um, when the fire gets a little bit bigger. It becomes more and more visible to the public. They don't think we're doing anything, but in the overall

reality is we're out there working and we're out there managing the incident. But it's their educational level in terms of how we do things, uh, where it shows whether it shows the support they might have for our program or the support that they don't have, you know, just based on their, their education of what we do and how we do things. So. Um, and that's one of the things that's kinda interesting, the whole Sisters areas is because 50% of the ranger district proper on the Deschutes national forest has burnt since 2003 I believe. Yeah. 50% has burned. So pretty much the whole Cascade Crest, uh, you know, just west of Sisters has seen fire and there's just a few slivers that haven't. You get down into the low lying areas. Um, and there's a lot of treatments that we've done, but there's still a lot of areas to burn. And that 50% that's burned over the last, you know, 15, 16 years, um, it's ready to reburn and we're seeing fire go back into those burn scar in about five years. So we get another lighting strike that hits a snag we're seeing, we're seeing fires be able to burn in those fire scars within about five years. And so that's the dilemma that we're in terms of those fire scars that are fire are starting back in them. After the fire burns, it takes a few years for the vegetation to build back upright to where it'll actually, uh, sustain fire spread. Um, and so like I said, we're seeing it at about five years of sustained fire spread, but then we have all the stag hazards that were, uh, that are present, uh, due to the stand-replacing fire that happened, you know, when those fires happened

over the last 15 years. So we're really not able to put people in some of those areas where we have a high snag hazard. So that that entails, put this on that indirect fire suppression strategy where we're going on a boundary that's a little further away trying to make a stance to stop the fire versus putting the fire out small because it's just too dangerous for us to put people in there. We'd rather go to the road where if somebody gets hit with something or an injury happens, we can get them out. We're not putting them right in harm's way of a snag patch. You know, we'll go out to an area that we can cut the snags out or we can utilize the road that's outside snag patch where the snags don't exist or we can use equipment on the road system to get the snag down because they're older and rot, you can't physically cut them down safely with the chainsaw. So there's all these other factors that go into it. But we're, we're at that point, uh, along the Cascade Crest on the Sisters ranger district that there's just some areas that if the public sees the smoke, we're not going to put people in because of the snag hazard. It's just too high of a hazard risk to the firefighter. And so we're having to back off different control lines and things to put those fires out. Does that make sense?

Morgan (00:41:41): Yeah. Oh yeah, totally. Just things I had never considered before. So this is really eye-opening and very helpful. Thank you.

James (00:41:50): And so I actually did, uh, several presentations that I did, uh, with the Pacific Northwest wildland consortium. Um, I actually, you know, at the tail end of the Milli, I had to go in front of the city council because they didn't think that, uh, we had an appropriate response on Milli they thought we let it burn and we didn't do anything. So I went in front of them and gave a presentation that showed them the facts on what, uh, what the response was, what we had going on and kind of told them the whole prioritization, showed them that whole thing we've been talking about. But, uh, you know, showed them how we do things. Showed them the prioritization that happens nationwide and refilling in locally and how resources are distributed the whole nine yards. And went through the whole, kind of from the start to the end. And, uh, and then, you know, most of the council members were really happy and they could actually be able to present that information to the public. One individual, you know, uh, still thought maybe we were hiding something and wanted to do a foyer request. Uh, and so they did the foyer request and we provided them documentation and dispatch logs and all that sort of stuff. What we had done and showing them the responses that, you know, we were pretty forward on, uh, on the incident. But some people also believe they're going to believe or some people, you know, there's a lot of folks out there that have conspiracy theories against the government. You know, it's just this, just how it goes.

Morgan (00:43:41): So is there anything that you think would be helpful for you as working with the forest service and like fighting the fires that like you, any way that you think that things could be better related to the public or to the Sisters community or something like that? Like do you think there's a better way to get that information across?

James (00:44:02): Well, some things just aren't they're never going to fully [inaudible] basically. We've been doing a lot of messaging, a lot of public information messaging and try and get around doing more messaging around our prescribed burning [inaudible] because those will help [inaudible]. [inaudible] that's safe so we can put firefighters verses in an area that [inaudible], you know, it's like [inaudible] You know, if there's a structure fire, somebody goes to the structure fire that, you know, the house is well built there's not a bunch of clutter. It's not somebody that's a hoarder. You know, those firefighters can go in and do that direct attack a lot if you're at [inaudible] crawl around the floor, spray things out like they do versus if they went into a house, that was a hoarder. They come through the door and they hit a bunch of boxes right there. The only be those little Avenues to walk through like you see on those hoarding shows and the house would probably go up in flames much faster than a house that doesn't have a bunch of stuff in it. Same thing with the forest. Fires going to get up into the canopy and burn across the canopy [inaudible]. That's because [inaudible]

around Bend, around Sisters it keeps that fire down on the ground and you get smaller flame length and the flames don't get into the tree canopy. That's where we put Firefighters in those areas where the flame lengths are lower and your ability to get into and put the fire out quicker, faster with fewer resources. Verses areas that aren't treated. So we've been doing pretty big messaging and things of that nature. And then how do you want your smoke, do you want light doses of smoke in the spring and in the fall or do you want these big catastrophic wildfires that produce smoke for weeks and months. That means that you know that it's nationwide. It's not just a central Oregon issue, you know, I think folks forget about that. there's been fires burning up in Canada, you know, the last month or two to produce stuff down into our area has happened, [inaudible] going into the central part of the United State. And so I think, I think folks that live in the woods, need to understand that they're living in an area. You know, it's like living in Southern California, you're going to get an earthquake. Same for folks that live in the woods here. In an ecosystem that has fire that needs fire. And actually, if we put more fire in it, um, you know, on our terms and thin more and did more work, uh, we'd probably get to that point where, you know, yeah, you're living with smoke, but you're living with the different smoke and shorter durations of smoke verses, all summers of smoke. But that's, you know, we're, we're behind the curve there too, you know, we've been doing fire suppression for about the

last about 114 years. Um, you know, pre-European there were a lot more fires on the landscape cause nobody was putting them out. And the native Americans that lived here, um, they were lighting fires, you know. And that's all historical events in terms of them treaty grounds for crops and letting the fires burn and removing that underbrush vegetation [inaudible]. You know, it's like in books just like it does around sisters. But all reason It looks like that is because we've done a lot of work okay. In terms of those fuels treatments get out further into the forest and it gets really thick. But I, you know, it's one of those things we need to be doing more of it. There's a lot of folks that live in central Oregon or they've moved in from other places and, you know, they don't want any smoke, you know, they don't want their viewshed ruined, or you know, they have asthma, those sort of issues. They just don't want any smoke at all. And then it's like, that's not realistic. If we want to get fires back to the point where they're small, they're helping the ecosystem versus completely, uh, doing a standard, replacing, you know, catastrophic wildfire that, you know, hurts peoples lungs hurts people's economy and turns the forest a bunch of black sticks, you know, a hundred, 200 years to come back to where it looks like it's got, you know, nice tall trees and to the areas that we know and love. So in short, it's a major educational piece, it's a public messaging piece. Um, you know, it's the politicians in the area working with the federal agencies and state agencies to, um, you

know, support thinning, support, prescribed fire and support treatment in and around the, uh, the wildland-urban interface, in areas that are at higher risk, fire-prone areas, uh, and, and working through it together versus, you know, kind of the finger-pointing scenario. Because of all the local resources. We all live here. I mean, I live in the community of Sisters. Before I lived in Sisters, I lived in Bend. You know, we all see how the economy is affected as well as, you know, we live in the smoke and we work in the smoke, you know, you know, we don't, we don't get off work and go home and, you know, not breath the same smoke, everybody else is breathing. So most of, nothing's intentional to the, you know, to the public or make them suffer or hurt the economy. And sometimes I would say it, it almost feels like that, you know.

Morgan (00:51:06): Um, so I guess another question I had is when the fire is done, like once Milli fire is put out, like what is your guys' recovery process from that? Like do you go back into that area and do anything or do you just leave it be and let the forest regrow and...

James (00:51:26): Um, so no, we, we do a bunch of different things. So, you know, like what we did on Milli once, uh, you know, the fire was out, I wouldn't say out like specifically, but where it wasn't moving, you really weren't seeing any smoke, cause we don't call them out right away because there could be smoking interior. That's not a threat to other control lines. But when a fire is out for us,

there's no smoke coming anymore. There's no heat, there's no smokes, et cetera. So when pretty much Milli was done and the public wasn't seeing it or really thinking about it much anymore, uh, we were doing, uh, some hazard tree falling and actually quite a bit of hazard falling along our road system to make it safe for the general public. They come back into those areas, uh, we did a major hazard tree removal along Hwy 242, um, for the public safety as well as, uh, you know, forest safety and then also highway safety. meaning that highway 242 state route and one of our scenic byways in the state. Uh, and so we got that, uh, cleaned out and, and those, those hazards, uh, mitigated, uh, to set up ODOT so that ODOT wasn't dealing with a bunch of down trees when they were trying to do the snow removal on it. Uh, as well as, um, basically across that whole fire area. We were in any of the road systems through there, we were looking at, uh, mitigating those snag issues, um, for future years to come, you know, uh, and then right after the fire, there's, uh, the acronym BAER, B, A, E, R and it's basically burned area emergency rehabilitation I think is what the acronym stands for, of the top of my head. And what that looks at is erosion, uh, runoff, basically burned area stabilization. And so we'll have, uh, a team that goes out and looks at all of that burned area in terms of hazard trees in terms of water runoff, uh, you know, anything that's going to come into the stream and they'll set up, you know, where our critical areas are and that we need to do work on. Um, and then, you

know, there's a lot of soil stabilization stuff that happened. Um, in terms of seeding or haying or, uh, just like that erosion control, sprays that they do on-road construct, uh, to try to stabilize certain areas so we don't lose a bunch of soil on to the roadways or into the creeks there, in the areas that we don't want them. Um, and then so there's that piece that comes, there's a trail rehabilitated, uh, recreational areas. Um, you know, depending on, you know, the severity and whatnot. We, we, we go around and sometimes, you know, trails close for a while, sometimes trails get reopened right away, depends on funding and, uh, priority is to know where that trail ranks in the system. Uh, same with the roads, et cetera. The road trails, all those, uh, things have different priority levels in terms of funding on how they get functioning, et cetera. Um, you know, for a normal time of year when work is being done, but then also, uh, uh, you know, once a fire goes through. Um, then after that there's also reforestation. Um, so replanting the trees that happened on, uh, key acres across the fire landscape. Um, there's so many acres each year that have to be replanted. There's different policies to attach to all of that. But, uh, you know, our sylviculture folks work pretty hard trying to get, you know, those areas where we planted, um, as well. So that's, that's a pretty big effort that goes into it. Uh, and so yeah, there's, there's basically once the fire goes through the safety aspect, it's the area, you know, so the public can go back through it. And then there's a huge ecological

piece tied to all that, the reforestation and wildlife, you know, repairing areas, you know, hydrological issues because, uh, you know, obviously those areas, you know, the national forest, we're not selling timber as much as we used to. We are an area, but not like we used to our national forest are recreational for general public rights, being public lands. There are also the major water sources for our drinking water Right. And so I think a lot of people often forget about that. It's like [inaudible] water comes from across the whole United States, you know, it's like the major watershed in San Francisco national park, you know, or the feather river in central California, you know. So there's a lot of streams and rivers that all flow into, you know, our area here, but also, you know. so it's not just, it's not just the recreation but water and wildlife and all of the pieces that feed the economy and you know, our general population, you know, generally the national forest or, or federal, again.

Morgan (00:57:25): okay. More things I had never considered before. So I'm looking at my list of questions and it seems like we've pretty much-covered everything that I've, that I was interested in and needed information on. So, um,

James (00:57:48): um, you emailed me before, and that's how we started this conversation right?

Morgan (00:57:52): yah.

James (00:57:54): Um, if you want to send me an email again, just so I have it like refresh, it'll only search so far back, so if you want to send me an email just to refresh it, I can see if I can get that PowerPoint to ya.

Morgan (00:58:12): Yeah, that'd be awesome.

James (00:58:16): Because the one we did for the wildcard consortium also had, uh, you know, the after, uh, the aftermath, basically of Milli in terms of, you know, [inaudible] and culture of recreation, those sorts of things go on. Basically a couple of power points I did for the city and you know, has some economic impact numbers on sort of stuff in there and I could probably get you [inaudible] of those data two years ago.

Morgan (00:58:54): That would be great. Yeah, I'll definitely do that and I would really appreciate that information. Um, I guess another question that um, I have not necessarily related to like your work, but I was just wondering if you have a recommendation for someone I could talk to. Like that was a wildland firefighter for the Milli fire that like I could pick their brain a little bit about their experience fighting the fire.

James (00:59:20): Sure. Um, why don't you send me that email, I'll get you fired docket ya.

Morgan (00:59:28): Okay. That'll be great. Thank you so much. Um, and then, Oh, I did have another question actually. Um, I was curious like, um, when I was talking when you were talking about like, um, you're getting information out more to the public about what you guys are doing in your job and stuff. Is there like a specific website or resources or like something that someone who is looking for more information can go to or something like that?

James (00:59:57): Um, yeah, so I think there's our Central Oregon, uh, fire blog. that's local stuff. There's, I mean, there's so much out there. It's people being able to decipher what it all means.

Morgan (01:00:18): Yeah

James (01:00:19): we've had a number of [inaudible]. Obviously it's very robust, you know, what's going on nationwide, what's going on in, you know, region-wide, what's going on with Central Oregon wide. But we do have a central Oregon fire, uh, info that kind of shows everything that's going on here. It doesn't dive into how resources are allocated and all that sort of stuff. But if somebody was really interested in that, I mean they could dig into, uh, some of the policy books that are all online and they'd be able to actually, you know, be able to understand what happened and why things happened. Um, basically with one book, the red book, is what it's called. Basically it’s our inter-agency Standards for

fire operation. And if you were to Google Red Book, that's got the five different land management agencies, it's a one-stop-shop kind of definition of different things that are out there. It has the definitions of our preparedness level, the 1-5. how resources are allocated. Definition levels of fire fighting training, uh, the crews, you know, fire fighting in the wilderness, all that sort of stuff. [inaudible] where they want to talk about. But it's pretty easy to kind of dig through it, but it might be helpful in your research.

Morgan (01:02:19): Cool. Thank you. I appreciate it.

James (01:02:27): And then I can give you a central Oregon aspire.org. That's our local kind of all partner website, wildfire or prescribed fire. So we're doing a lot of information sharing there in terms of smoke [inaudible] health organization. I think people are surprised. Like oh, there's a prescribed burn and we didn't know about it. You can receive text messages on your phone that will provide precautionary mitigation, things tied in [inaudible] health department, things of that nature.

Morgan (01:03:13): Whoa. Okay. That's awesome. Cool. Um, thank you so much for talking with me for so long. I really appreciate all the information that you've had for me today. It's been very helpful.

James (01:03:30): No problem. If you have any questions call me. You know, that might make your product potentially a little better [inaudible] or whatever.

Morgan (01:03:53): Thank you. I really appreciate it.

Interview with Jeri from the Sister City Chamber of Commerce

Jeri (00:00): And at the time, probably blue spruce and whatever the lodging, I think there was five or six. So when you get, when somebody gets a room in Sisters, they pay tax on top of their room fee and that room tax that lodging tax. We, the chamber gets a percentage of that.

Morgan (00:22): Okay.

Jeri (00:22): Um, that first it goes to the city and then the city, in turn, gives us a check and that's how we market the town. That's where all the money comes from, including the Chamber's membership and so forth. But the room tax dollars. So we get a report saying, you know, lodging was up, down, whatever. And that was the only month that year that lodging was down and it was because of the fall festival. So, um, and I'm trying to remember back on, um, the biz. I'm just, um, and I'm trying to think of a good business, a couple of businesses for you to talk to.

Morgan (01:12): I would really appreciate that.

Jeri (01:13): Um, well, I mean, I know that I mean, well, any business, it was somewhat well, but the thing is, the impact we had too was the eclipse too. So that like I say, I mean we had what, a month worth of mess. Yeah. So cause I was looking to see what day did the fire start here on August 9th. Oh really? Come on. Seriously. That's sure. Well, we were on here evacuation starting about August, August 27. Wait a minute. The Milli fire [inaudible] the fire. Okay. It started on August 11th. Okay. So August 11th, uh, pictures or, Oh, from The Oregonian. Really? Yeah. This is a gorgeous picture. Well, the thing is too, and, and I mean this is my opinion okay. What people don't realize if you've ever talked to the forest service about some of these fires or why you get smoke and why, you know, I mean there's a method to their madness as far as how they fight it, temperatures, what they can do on that particular day. I mean, sometimes they have to let it burn, you know? Um, and especially in summer, you know, your smoke is going to be, it's going to be more to the ground [inaudible] because of the temperatures between the night and the day. So you know, a lot of people go, Oh my gosh, we got smoke again. Well, okay, okay. Sometimes you know, you can't, I mean it is what it is, you know, and they, one of the things when they talk about these prescribed burns around here, people complain and bitch about it. Well, they have to do that because, so fires like the Milli fire don't impact, you know, the towns and stuff.

Morgan (03:52): So it doesn't become as bad as that.

Jeri (03:54): It doesn't become as bad. Unfortunately. That's a federal thing. We don't have logging anymore. So fires have gotten worse and probably get, you know, I mean, and you might, if you, if you get an opportunity, you might want to go down and talk to Christie at the forest service. Yeah. Talk to her and she might be able to give you from that perspective since you're going to go talk to Brad from the Folk Festival and talk to the Forest Service about, you know, some of the things that they do. And my husband goes out and does fires in the summertime, so he, he's like a runner and stuff. And so, I mean he tells me about, Hey, so this day they look and go, okay, this is what the temperature's going to be, blah, blah. This is what we can do. And so, I mean, if there's a method and sometimes it makes it worse than it is, but I mean it was going over a month.

Morgan (05:03): I remember it was a long time.

Jeri (05:04): It was a long fire and you know also where they have to fight it, access to it, you know, it makes a big difference to um, better, you know, as far as, as the impacts. Yeah. I mean, yeah, it impacted the town. Um, but cause you know, people with the smoke and the conditions and what are you going to do? I mean we have, we have smoke. We, you know, this is, this is how it is here now, wasn't like this 15 years ago, but this is how it is now. But um,

Kasey (05:48): is that due to the lack of the logging or.

Morgan (05:50): Oh yeah. I mean you've got, when you don't have logging and you don't get the, um, you know, all this mess cleaned up and stuff. Yeah. It takes a toll. So, uh,

Kasey (06:08): why did they take away the logging?

Jeri (06:10): I, you know, back then, you know, who knows what the federal government was thinking, you know, but um, managing the forest, you know, there's a, there's a big talk about that in the news now about managing the forest, okay. Um, and if you go to, I mean, I don't know if I'm answering all your questions.

Morgan (06:39): No, I appreciate it.

Kasey (06:40): Um, cause they shut down the mill. [inaudible]

Morgan (06:52): Oh really?

Jeri (06:53): Yeah, there is. Um, and uh, but the, you know, maybe even the summer I saw I mean there are logging trucks out there, taking down the trees and stuff, but not like,

Morgan (07:07): Not like they used to.

Jeri (07:07): Not like it used to. Yeah. You, Oh, I know why. Because it was a bird. What was the bird? There was a spotted owl or something,

Morgan (07:54): Oh yeah, I remember that.

Jeri (07:54): Of course, they're not even here now. Yes. I knew it had something to do with some tree-huggers. I mean that's what it was. And so that why they um,

Kasey (08:42): Okay, interesting. That's spotted owl.

Jeri (08:44): It was something, some kind of a bird, I don't even think like I said that the bird is even here. You know, Bob was telling me we were talking about this the other day. Um, so anyway, but back to, you know, so the forest service is trying to manage, you know, how they're going to control. I mean the thing is like a lot of people complained about last summer. Okay. Well, last summer we didn't have any fires around here, but all the smoke from California and Washington,

Morgan (09:37): It was still affecting you.

Jeri (09:38): It was a mess, you know. Um, so yeah, I mean it's a part of, it's a part of life up here. We don't try like the chamber really stays like when people call up and stuff, maybe we try to be real positive about the, you know, yeah, there is smoke, but um, it's, it's part of life up here now. So just trying to think of who

would remember from a year and a half ago would be good for you to talk to, like say the Forest Service. Um, I don't know. I know we get hit up for, uh, the news media asking us and I know we usually decline the news media. Yeah. Because they always take what you say and turn it around, you know? Um, let's see. Um, yeah. You know, let's see if there was an art, I'm sure that we,

Morgan (10:50): I know the nugget did post, um, a couple of articles about the fire.

Jeri (10:54): Did they, um, they did update, they had updates on the website. Every single day yeah, from the moment it started. They were really good. And we get, I mean, yeah, we get the updates from the Forest Service. Okay. Here it is the City of Chamber work on fire impact. I knew we were in there somewhere. Yes, you were right. Um, it was on September 19, 2017 nuggets. Um, so here's this article. So what all I did was go in and I Googled, Googled economic impact from Milli fire in Sisters and this came up. So this will probably, this is a tough spot, um, Cedars September critical business. Um, so I wonder if I can print this. Hm. So it didn't really, we probably didn't get figures because nobody's going to tell us anyway. Um, Oh, we did. We did have a low grant a low, a low-interest grant loan the deal with those grant loans though. There was no death involved. There were no buildings lost. There was no, Hmm. I mean, you know, when people go, Oh my God, you know, some of the businesses will say, Oh my gosh,

what am I going to do? It's [inaudible]. Well there are, you know, you can get a loan from the bank or whatever, but the grant, the funds, and stuff, did that come from the federal government for this is like, you had no loss of life, no building loss. No. I mean there was nothing so devastating.

Morgan (13:15): Right.

Jeri (13:15): When you talk about devastation look at California. But so now I don't know if the governor, did the governor declare some compensation? No, they didn't? Well I thought it was offered. You have to apply for it. Did they, you have to give like a year's worth of tax record. I mean, it's like a process. If you were to apply for a grant or loan. I don't know if this was the fire that, that the governor, um, what's the date on this? November 19. Yeah, I do. It had to have been the Milli fire then. Yeah. Well, um, September 17. Yeah, I know. No, this is the Milli fire. I just don't know if I can, let me see if I can print this. Umm. And you can also go to, uh, the State of Oregon and see what fires, if this was one that the governor um, whatever they do, uh, disaster or, I mean it's some type of a declaration.

Morgan (14:42): Okay.

Jeri (14:44): And it could have been, um, yeah. So this is a pretty good article because you know, people will call us and go. Did it print? Okay. Tiny, tiny [inaudible]. Well, there you go.

Morgan (15:12): Just based off this, I can easily find it online. Thank you so much. I appreciate it.

Jeri (15:20): Yeah, yes. Um, [inaudible] small business association, federal emergency management. So yeah. So that's something that the governor has put into effect, anyway.

Morgan (15:40): Yeah, that was awesome. Thank you so much. I appreciate it.

Interview with Jinny a Fire Prevention Education Specialist

Jinny (00:00:18): Hi, this is Jinny.

Morgan (00:00:20): Hi Jinny. This is Morgan.

Jinny (00:00:21): Hi Morgan. How are you?

Morgan (00:00:24): I'm doing good. I'm glad that we're able to talk for a while.

Jinny (00:00:29): Yeah, me too.

Morgan (00:00:31): Um, so before I continue any more, I just want to check with you and make sure it would be okay if I record this just for my own notes for later.

Jinny (00:00:39): Yes.

Morgan (00:00:39): Okay, perfect. Thank you. Okay. So should, do you want me to like dive in and tell you a little bit about my project or how do you...

Jinny (00:00:51): Yeah.

Morgan (00:00:51): Okay, cool. Okay. So, um, my project started about two years ago around the time of the Milli Fire. Um, and that was when I had to decide what I wanted to do my thesis topic on. Um, and so I was home in Bend for that summer and um, the fires were just obviously really close to my heart at that time because there was so much smoke and stuff going on around. Um, and so I just kind of started to do some more research about it and just kind of decided that this was a topic that I was interested in. Um, and specifically the idea of, um, getting communication between like fire services and community members. Um, and so my project has related specifically to the Milli fire, but I've been doing a lot of research just about forest fires in general, um, and just kind of like the history of them as well as how we fight them, how we prevent them. Um, and I'm trying to learn best methods. Um, and so one way that I've been trying to do this

is by talking with different community members and people who obviously have a lot more knowledge about these things than myself. Um, and so that is where you have come in. Um, so yeah, so I'm just trying to get like a better idea and obviously to get to know you and your history with this, how you got involved with all of it and um, yeah, if that, if that makes sense.

Jinny (00:02:20): Sure. Um, so you want it, you, you're from central Oregon.

Morgan (00:02:29): Yes, I am. Yeah.

Jinny (00:02:32): Good. Then you know that we, that wildfires a frequent visitor. It wasn't just Milli. You've been through the BNB complex in 2003. I suspect you are young, young, young.

Morgan (00:02:45): Yeah, I don't, I don't remember it, but yeah.

Jinny (00:02:49): Okay. And then we had, you know, just sort of a change in the scale of our wildfires in the early two-thousands. So, you know, the backstory is, um, climate change. You know, we weren't getting being from central Oregon. I am also from since I was born in Bend. Yeah. And my parents met at COC.

Morgan (00:03:18): Oh my gosh, that's so cute.

Jinny (00:03:20): Yeah, it is cute. My mom graduated by the time my dad graduated from Bend High.

Morgan (00:03:27): I'm from Bend High.

Jinny (00:03:27): Uh, you went to Bend High?

Morgan (00:03:29): Oh my gosh. I loved high school there.

Jinny (00:03:33): Cool. Yeah. So I used to be, yeah. So central Oregon used to be very small community and so I guess my point is, is um, you know, things have changed and working in the forest environment it's very dynamic and very complex and uh, you know, the forest service kind of hurt themselves a little bit with their 10:00 AM policy, which was put out fires by 10:00 AM the next day. You know, they were just really good. We were really good at fire suppression. And, uh, that became a sort of a, a difficult perspective once we started having larger fires, knowing that in the past we were putting out all these small fires, we could have let them burn a little bit. Um, because this is a fire-dependent ecosystem, you know, so I guess what I'm getting to is we sort of set ourselves up as we didn't know any better.

Morgan (00:04:35): Right.

Jinny (00:04:35): You know, we, we were, we were, um, doing, doing what we were hired to do, protect and serve and, and accidentally we sort of caused a ticking time bomb. And it's happened all over the country actually, except for in

the region eight where they do, you know, up to 300,000 acres of prescribed fire annually. And they've been doing it forever.

Morgan (00:05:00): Oh, wait. Where is this?

Jinny (00:05:00): In region eight, which is, uh, the Southeast. So region eight it encompasses several States. You know, it's Florida, Georgia, it's huge, it's the biggest region in terms of, uh, you know, the most States within the region. And so it's, it goes all the way up to Virginia. Region nine is Virginia, but South of Virginia, all the way to Oklahoma. Uh, Texas was part of region eight as well. It's a big region and they, you know, Loblolly pine and the Longleaf pine are fire-dependent species. And so years back they knew that in order to get their crop of trees, they needed to burn their crops. So fire became more comfortable around that part of the country. It was more, yeah, it's a, we've been really good since 2000, since 1910 putting out fires since the big burn and just maybe, cause like I said, maybe causing a little bit of a uh, uh, my words where are my words. Maybe causing a little unintentional consequences and the consequences of hurt. So what I'm getting to is, um, when the climate changed and we had this buildup of vegetation across the West, which you probably learned about. What did you major in?

Morgan (00:06:34): Uh, my major is called interdisciplinary studies, so it's just kind of like a broad range of things. Um, but this last year I have been taking a lot more environmental study classes. Um, and that was one reason why I was so interested in this topic as my thesis.

Jinny (00:06:53): And so before I continue your focus, it's social, right? More social or communicating with partners and communities.

Morgan (00:07:03): Yes. Yeah.

Jinny (00:07:05): Okay. So, so what's the title of your thesis?

Morgan (00:07:09): Um, faces behind forest fires.

Jinny (00:07:13): Oh, faces behind faces, the faces behind forest fires. Okay. So because I could talk for a long time about things and I don't want to, I'll get carried away. I guess I kind of wanted to know that so that I could maybe focus a little more on what you're really after. Um, but the faces of wildfire. Right. And so, so specifically, um, I think this helps, I think has helped a little bit to give you some background. I'm sure you've had some ecological studies. You've had some natural resource courses, curriculum, right?

Morgan (00:07:58): Yeah.

Jinny (00:07:58): We know that oftentimes humans go in and they manage something thinking they're doing the right thing and then they find out later it had unintended consequences on other species. And so the point is that four systems are very complex and very dynamic and very interrelated and um, very, um, everything relates or they're symbiotic. There's a lot of symbiotic relationships, right? And so fire is part of that symbiotic relationship. And then, and so it directly ties to wildlife. Uh, there are pros and cons for, you can list them all out for wildlife, vegetation, uh, hydrology. You can just list out all those elements of the forest, air quality. You can list out the pros and cons of fire and you'll find that in most cases fire is necessary at the end of the story. If you were to list all those elements out and do sort of an analysis of its place fire's role, you would find that it's most important, to take the risk and allow fires to occur. So, but we found that out after it was too late. So science, there's been a lot of science, science, it's very progressive. We have researched nations, internal research stations, external research stations, and they're constantly, you can look up publications all over the place. And science has come to the fact that, um, you know, it's important that we log our timber and, but we be very mindful about it and if one timber fails is gonna meet, you know, the prescription for a timber sale over here on the dryer side of the cascade. It's going to be, it's going to need to be different than a timber sale on the West side of the cascades or even on the

coastal range. You're going to have it that you need site-specific. It's different in all of these areas. So it's just very dynamic, complex. And so there's no black and white answer on why we've had wildfires and [Inaudible] many reasons. But, um, now we're faced with the era of megafires and if you want to, if you haven't already, I would recommend you look at Paul Hessburg Ted talk. It's 15 minutes and you can just, it's on YouTube, you can look at it, but it'll give you essentially what I've just talked about in a more professional delivery and it might help you understand, you know, the background of fire and why we're having these large fires. And so I think that's really important and why I bring that up is because,

Jinny (00:11:16): The hard part is educating people about forest system and unless you're a student of forestry or environment or natural resources or you hike or hunt or unless you know you're out or you've grown up in an area where you've been physically connected to nature, um, or relied on certain systems in your community, uh, it, it doesn't really click. So I think from the social aspect, that's where we struggle a little bit. Um, and that leads me to wildfires and the faces associated, the faces behind wildfires. So, um, you know, it's when I guess what I'll do is just explain a little bit about myself. I started fighting wildfires in 1988 and I work in suppression. Yeah. I worked in suppression for, for 10, 12 years. And then I quickly realized, and that wasn't quick enough, but I realized that I wanted to be a participant in a more proactive approach to fire and forest

management. So that's when I became, uh, a fire prevention education specialist. And then I would was educating young children about good fire and bad fire. And I was in first grade at smokey bear, every first-grade class, they probably visited your first-grade class. Um, but I began being, I began, um, my passion for getting the word out and trying to engineer, educate and enforce, Fire prevention. But part of that was informing them about good fire and then being that person who was going to communicate when we did have a wildfire to community members. So when we had an unplanned fire event, that's how I started. And that was around 2001. I started, um, we, we, we started getting large fires and I would be that person who would not only be fighting the fire that first initial attack, 36-hour shift, and then I would shift over into a more public service role and, uh, directly communicating community communities and helping them understand why we haven't put the fire out.

Morgan (00:13:59): Wow. Okay.

Jinny (00:13:59): The short answer is, that while we want the unplanned ignition, To be contained or managed in a more controlled atmosphere, you can't always do that. You know you don't want to lose firefighters. I want, you don't want to manage a fire at the risk of firefighters and have fatalities. And then you also don't want communities to be impacted or threatened by wildfire.

Morgan (00:14:41): Right.

Jinny (00:14:43): And so over time, Deschutes County has grown exponentially. Yeah. And it, and, and, um, you know, you have an opinion from people who move to the area maybe aren't connected to the area. And so you know its a constant that's my point is the education of how fires occur, how we suppress them effectively, and uh, why we may choose, uh, other containment strategies, you know, if there's a road or, um, topographic features that are gonna help keep the fire in check so that we're not, you know, um, putting individuals at direct risk if we don't have to. Right. And so, um, I'm going to then, I, I started, uh, working as a skills field tech, which means I help manage the forest fuel loading. And you've probably been traveling on highway 20 most of your life and you've probably seen the changes that have occurred. And, um, early in, I think it was around 2005, we started prescribed burning there and burning in that corridor and making it so, um, you know, the trees had plenty of Ponderosa pine, which are fire-resistant trees, have more space to be more resilient to fire so that when fires occur we, you know, they're not lethal, they could burn at low intensity. And that's a lot of the reason why we do a lot of, um, little fuel reduction, you know, smaller diameter fill reduction work is to preserve our old legacy Pines because most of them were logged in the forties. And so we want to keep that old

structure. But, um, part of managing it is, um, you know, protecting them from high-intensity wildfire.

Morgan (00:16:45): Yeah.

Jinny (00:16:47): And so Sister's, I'll use the example is that there are plenty of community tollgate, crossroads, cascade metal ranch, Black Butte Ranch, Camp Sherman, all surrounded by forested land, uh, where they're really susceptible to, um, wildfire, the threat from wildfire. So we've done a lot of work and wildland-urban interface to set this page for low-intensity fire when it occurs or to have a better, um, opportunity of success in, uh, you know, we don't want complete mortality in our pine stance if a fire occurs, right. We want to try to preserve it. So, um, that's when I, so I started in the field tech and then I became more of a professional, um, pyro, I guess lighting fires and, and picking the right weather conditions to actually reintroduce fire. Most of these, this landscape, it hasn't been seen a lot on a large portion of landscape. 50% of the Sisters Ranger district hasn't seen wildfire in the last hundred years, but 50% of it has burnt. And you know, the fires that we've had over the last, we've had 18 large campaign wildfires.

Jinny (00:18:17): And so, uh, so that's why I think fire is a frequent visitor because, um, we just couldn't, once we figured out that we needed to thin the

forest, we couldn't do it fast enough. And, and you know, you know, we just don't get the snow that we used to.

Morgan (00:18:37): That's so true, yeah.

Jinny (00:18:37): The precipitation and then Sisters is also unique in that the rain gradient is 11 miles long. So from the town of Sisters to the crest, the rain gradient at the top of the crest, um, you know, we get about 40 inches of precipitation at the top where 150 it used to be. We used to get a lot of moisture, you know, we see a lot of snow in the high elevation, you know, hoodoo used to always be open. It wasn't, it wasn't, no, they would be open year-round. Now we just, it just doesn't happen anymore. Slowly gonna continue that way. I don't even know if that ski hill is going to make it in the next 15 years because of change because it's just not going to ever achieve the snow to, you know, keep it open. with some of the climate change projections. That's fine. It's [inaudible]. But um, I'm getting off on a tangent. Um, so anyway, we get drier and it gets more difficult to suppress fires. Now we've had large fires in those problem areas which are on the high elevation areas. And what happens is our predominant wind comes out of the West around three o'clock in the afternoon. Most of our fires get wind-driven. You just can't put people there to fight them. They're just too intense. We have to work with our partners. Everybody has, you know, there are a lot of stakeholders and just communicating with the public about those

areas are what are, um, the concerns are in relation to how it affects the community when the fire happens. And so I do a lot of communication with people during the wildfire situation and then I do a lot of communication and education during prescribed fire. And so that might be enough background. I need to rein myself in, and let you question me with what... have I, have I tickled any areas that you want me to maybe hone in on a little further.

Morgan (00:21:03): Oh my gosh, this is all so great. I love talking with you guys about this and learning so much more. Um, so I guess one area that is, would be most helpful for me and my project is how you communicate between what you do with the fires to the public and help keep them informed and aware.

Jinny (00:21:28): Yeah. So we've come a long way with that effort, um, with technology. So it's a lot easier to communicate, which is a good thing. But at the same time, um, things change so rapidly, um, that, you know, sometimes it's still ineffective, but we do the best we can. And so how we communicate here in Sisters, we have a, we have contacts with each homeowner's association. Uh, and then we work closely with the Sisters, Camp Sherman fire department too, and Deschutes County and Jefferson County to, you know, add it to inform people in a timely manner about the progress of a threatening fire near their community and you know, keep them on alert for evacuations or, you know, try to keep them informed on how they can prepare. But mostly it's, you know, I'm sure you've

heard of Ready, Set, Go. And there's what we try to do is keep, keep people ready to go all the time cause we have so many new people that move here. They just need to have in the back of their mind. Yeah. I think there may be snow on the ground and its winter, but, um, the best time to start planning for wildfire is before it occurs and to have a little check checklist in your home. And I'm sure you already know about this stuff, right? You know, medications, what are you going to do with your pets if you evacuate, you know all this? And so what we do is we have, when it, when an actual wildfire is initiated and we bring in a team and we're working with our cooperators, um, and the red cross is involved, um, we just make sure that everything's in place for people to have a place to go.

Morgan (00:23:43): Okay.

Jinny (00:23:44): So that's, that's part of the incident management team. And so, um, we know we can't always with the amount of people that live here, you know, there's, there, we've grown in opportunity and options for people that they take their horses or, or um, you know, their domestic, all their domestic animals too and try to have people figure that out on their own and have a plan in place before a wildfire happens. Cause we can't do that part for them. Obviously it's more about constantly educating and using other wildfires as examples. You know, we've been tapping into the paradise fire a lot here this year and using lessons learned from that and conveying, even though we're in a

different area, a lot of the things that occurred there could still apply here. And so we try to, you know, take, take our time as cooperators and all the stakeholders go to these conventions and we share from people that live through that, you know, people that are in similar jobs come up and speak to us so that we can be better prepared for how we reach out to the public, how we share information. Cell phones aren't always the best answer because like in paradise they lost, they lost their texts system, you know at some point it gets overloaded. Cell phone towers don't work effectively so that form of communication can work and it can also not work. And so we have to come up with plan B. So a lot of times there is a fire threatening your community it's best to just go stay with family in another area, go ahead and go now just to play it safe. So a lot of that happens there. There's a situation where I was involved in where this family had a 90-year-old granny living with them and moving her would have been more trouble for her. And so you know, there's day to day communications on the progress of the fire with those individuals to help them make decisions to leave. So we do special, I have done special efforts. I have participated in special efforts to help people in certain situations. Yeah.

Jinny (00:26:41): But really the alert system that the County has is very useful. And just having people prepared and teaching them more about as far as [inaudible] we could have 10 air tankers here and not put out a fire. Air takers

don't put out fires by themselves and that we contend with, there's the fire, there are many fire triangles. But the environment fire triangle is, fuels whether it's part of [inaudible] all those lineups, you don't have control of any of those three Hills, weather or typography, you know, any of those that can't change or mitigate any of those three elements. You just need to wait until mother nature decides the weather is going to change so that you can actively contain portions of fire that may be threatening, threatening the community. So, proactive work is very important. It's not fail-safe, but it's very important. We don't want to be fighting fire in people's homes we want to fight it, you know, a mile away not having it rush in and take over a community. So I think that our prescribed fire program helps us, you know, just educating people about why we prescribe burn or initiating those interactions and networking with those people, having them on a call or notification list keeps them involved, keeps the fire in the forefront of their mind, keeps, you know, we have fire-free programs where we can, I'm sure you've heard of the fire free program where you can clear the needles around your home or you know, do work in the bitterbrush and take that material to the, to the, to the landfill on days where it takes, you know, dumps for free.

Morgan (00:29:13): I never knew that was what it was called.

Jinny (00:29:16): Yeah. That came after the 2006 fire. There's some history behind that too. I don't know if you want me to get into it, but we started

developing a program an insurance company gave us, can you bend fire department money to buy another truck because they thought well if they have more trucks than they would have been able to put out the fire. But really it's about people taking responsibility for their piece of property and making it fire safe on their ownership. And so, um, we have websites, we have a website called central Oregon fire.org, And I don't know if you've been introduced to that, but it's a website for people to go to, to look at where we're, and it, it also oscillates from fire season to it toggles. There's a toggle. So right now we're in a prescribed fire mode. You can go to that site and see where we are going to do prescribed burns. And then during fire season, you can see where you can get up to date reports on fire activity when there's a wildfire. So it's not really a blog site, but it's a site that's managed and updated daily when we are in fire season, if there are fires, in the central Oregon area. So people can just log on there and you can actually zoom in and see the road system, you can see the proximity of the fire to the campgrounds, you know, how close it is to the tollgate if it was here in Sisters. Even the fire perimeter maps would also be included on that website so people can get as close to real-time information as possible. There is Inci Web and I don't know if you've heard of Inci Web, it's a national database that it's managed for national fires across the country. And it doesn't, isn't as real-time as

most people would like. Sometimes it takes several weeks for people to update it.

Morgan (00:31:51): Really?

Jinny (00:31:51): sometimes it's updated daily, sometimes it's updated weekly and it's just not, it's not actively managed. It's like, so we have our own website here for central Oregon where people can just log in and check it out. And then we have, um, we have the Oregon smoke blog. Most States have a smoke log, um, sites where you can get out on is there going to be smoke tomorrow. You know, we work with the media, we have air quality specialists that work with meteorologists to help pinpoint, you know, say you have asthma or um, your children are in school or you know, there are many scenarios. But we try to update information in the smoke bog so that people can make informed decisions about activities outside. Um, we work with the school district here to make sure they have a system in place and sometimes it's safer for students to go to school and maybe skip recess or skip football practice or soccer practice for the day because of the conditions outside and they're safer indoors because they have, um, proper filtration systems in schools. Not all schools but some schools. And so we communicate with school districts, um, city managers. The list is long. And so I can, I can plug you into, um, so many things. We have a lot of places where you can get information. Um, today I received the Bend community

response plan. It directly addresses the smoking, um, how we interact with communities surrounding smoke events. Before a prescribed burn here in Sisters, we have a notification list and we email people first. So I guess what I'll say is whenever there's an opportunity to speak to people about a fire, we always invite them to join a notification list or sign up for an alert system so that they can know in advance when we're going to prescribe burn. So there's that notification. We hold we hold public meetings during a wildfire, we hold public meetings, um, or open houses preseason before a fire season or before we have a prescribed burn that maybe we're going to be actively burning thousands or hundreds of acres adjacent to a certain community lets say Black Butte ranch, we'll have an open house and invite them to come and look at our maps and learn about why we're prescribe burning. So I'm bouncing back and forth between wildfire, prescribed fire, but I think they're interconnected.

Morgan (00:35:39): Oh absolutely. I agree.

Jinny (00:35:42): Yeah. We typically use the communication lists that we build year after year for either or. So for here, if we're going to go out and prescribe burn I will send out an email, and let people know that they can expect to see smoke or a large clue because we're prescribed burning. Please don't be afraid. The planned event and then include information on what our objectives are. The clear objectives are to remove hazardous fuels and in a low-intensity fire

environment. So if we, if we, if we prescribed burn an area, when a wildfire does come, it's going to behave differently, because there will be less fuel for it to consume, less fuel for it to build in intensity.

Morgan (00:36:45): Um, so obviously you guys are very pro, um, uh, prescribed burns. Um, could you maybe give me a little bit of background about that? Um, just, I mean I am very pro prescribed burns as well, but I know that sometimes there's a lot of debate around that. So I'm just curious like what your position is on that.

Jinny (00:37:12): Well, um, so as a forest service employee, um, I take an oath to protect and serve and to manage our public lands to the best of our ability with the best [inaudible]. Um, that's really our number one mission. Um, so my, the foundation of how we strategically do our proactive work is directly associated with community and proximity. So we're going to put more effort directly around communities and then work our way up as we can, but we have to do national environmental policy act requirements. So, which means we have to analyze the effects of our proposed treatments on the landscape. And that takes two years.

Morgan (00:38:26): Oh my gosh.

Jinny (00:38:28): Maybe three years. It could take even five years.

Morgan (00:38:30): Oh my gosh.

Jinny (00:38:34): So we have the national environmental policy act and we have to have that in place before we can actively manage the landscape. And so we'll take an area of say 25,000 acres, 25,000 well the Sisters area fuels reduction project is 27 or it's 17,000 acres. And we start out by introducing what we want to do to the public and scope the public, and give them an opportunity to look at the purpose we need for the project and they can respond with no, you can't cut any trees and I'm concerned about this Jeep trail and I'm concerned about this plan. We can, they can provide input and be actively involved in that planning process. So what we're really doing is soliciting concerns associated with our management and it's typically a small tree thinning or harvesting larger trees and then following it with prescribed fire for a moment. So those are our active implementation activities. So we tell them where we showed them a map of the project area and we solicit input from them and they have an opportunity to provide their concerns and then we take their concerns and we address them. As you know, we have representatives from fuel and fire and we have a representative from fish and wildlife, and we have representatives from soil. And we all create a two or 400-page document that includes an analysis of the effects of our, of our management on the landscape. It could be an invasive species, it could be, you know, at the table, there'd be usually at the table, but all these people could take, analyze the impacts of our management. And then we have to

do this and the effort is to national environmental policy act, which is completely designed for transparency. You know, what are you doing where, and why. Um, we developed a document once the document is approved and we haven't been litigated because of certain individuals, that the public is free to litigate any project.

Jinny (00:41:01): And so our goal is to stay out of court. It's very expensive to manage. So there's the whole NEPA process, which is the national environmental policy act. So there's, that takes about three to five years and then we start on implementation and then we hold an open house. This is where we're going to start working because new people move in. So we may have signed the document and then 10,000 people may have moved in since the document is signed or even more. 33,000 people moved into Deschutes County last year. So, we, we, you know, have an open house and saying, this is, it's going to take us a while, but when we get funding and we're going to do this, we're proposing to treat this here first because of this. And people have an opportunity to interact with the forest managers, the district ranger and subtext, depending on those social and political things associated with the project. You know, you even have a forest supervisor who would attend and then public affairs officers, they would all be there so that public to ask questions, get to know these people who are managing the public lands. And so, um, yeah, we just annually plan where we

want to burn, ask for money and once we get funded then we go out and burn it after all of that outreach has occurred but can never get everyone because we have a lot of visitors as well. And people that come from other areas, they want to recreate them, they plan ahead and they spend all this money to stay here. They're like, okay, so now you have a prescribed burn and I've been planning this trip for a year and it's a family reunion and you're burning right next to where we're having a family reunion. And so there are impacts, you know, um, the more people that are in Central Oregon, the more concerns occur when we are managing, especially with prescribed fire because it's so visual. And so we just do as much outreach as we can. We post, um, with that, I invite you to look at the centraloregonfire.org site. It shows you look at, you can zoom in on the map and see all the areas that we've preloaded on where we planned to do fire as soon as the weather conditions are good.

Morgan (00:43:44): Oh, that's cool.

Jinny (00:43:44): Yeah. And so that's been out for about three years now and it's just this last year we've made it so that people can actually receive alerts. So, if I'm in a, if we're gonna do a prescribed burn, I let the public affairs office know and then they um, will illuminate a dot where a prescribed burn is and the dots are all black. When you open the map, you'll see a bunch of black dots or Brown dots. They'll be Brown I guess. And then when we're going to burn there, the next

day it will change to a red, which means there's going to be fire activity there. And then once we're done, it turns black or green. I can't remember. But there's a color scheme. So when you go into centraloregonfire.org And also [inaudible] um, the Deschutes collaborative project has created a video of fire practitioners actually doing a prescribed burn.

Morgan (00:44:51): Oh, that's cool.

Jinny (00:44:54): Yep. That's pretty good. Look at that. We can't do enough outreach. And then, um, there is a researcher who does a lot of the social, political, she does study, her name is Sarah McCaffrey, you can google her. And then putting that into a site where you can click on a tab where she has publications and there are 20 publications there of research that she's done on pointed fire incidents or just done research on social, social, oh what's the word I'm looking for, social response to our active management and there's wildfire, there's [inaudible] attached to it. Why decisions were made. Specific errors that have maybe been in the spotlight for that. Yeah, it's very, there's a wealth of information. Plenty of reading for you. I bet if you skimmed her list of publications one might pop out, this one, you might even see three or four that really apply to the work you're doing, but it's going to be so um, [inaudible] the face. The face behind fire is going to be different across the country.

Morgan (00:46:38): Right. And that's something that I've kind of been realizing.

Jinny (00:46:43): Yes, they're going to be very different in different demographics, you know, I was earlier in our conversation, I was bringing up the Southeast. I've been prescribed burning over there. People come out of their house and go get me a drip torch. I want to burn with you. You know, they want to burn their property. They're just very into fire there whereas you go to different parts of the country and people who are very opposed to it because it's, and I think it's mostly because, um, they don't understand. Uh, I mean it's a lot to understand unless you're living in it and working in it, this is my 32nd year, I still am learning, you know, I learn all the time.

Morgan (00:47:28): Yeah.

Jinny (00:47:28): I think the number one thing I've learned is you can't oversaturate information. It's just not possible. But the problem is getting out good information. Our public affairs officers have learned through trial and error. on how to just be very clear, concise. I've learned how often they need to post something depending on the movement of the wildfire. Right. And then they have a life as well. So having enough capacity to stop. [inaudible] It's a balance. When you have a very active fire season, like the year 2017 wasn't that Milli?

Morgan (00:48:26): yeah.

Jinny (00:48:26): Very active for most of the people. You know, people I am, I'm a national resource. All of all the federal employees are national resources. So I could be on a fire assignment in Montana and then wildfire would happen here. And then someone would fill in behind me, but they wouldn't have the same network and come, you know, you try to leave good tracks. That's why it's really good to have these websites. You can just plug in and make it available for everyone to look at. Everyone has access now. It's only been that way for a couple of years. Everyone has access to information. It's just you know learning where to find the best information. And for you, um, I just recommend you just have that central Oregon fire site and tap into smoke blog Oregon smoke blog, if you want information you're going to get everything you want and more. About the most up to date happenings in central Oregon.

Morgan (00:49:33): So for someone who's just living in central Oregon and is needing this information, those are the two resources that you suggest?

Jinny (00:49:42): Yeah, there's a quick dirt there. Yeah, they're quick, reliable. I mean, you can, you can dig as deep as you want and get overwhelmed with sites to look at. Those two are the rudimentary top priority managed sites.

Morgan (00:50:01): Cool. Good to know. So one of my, um, end goals of my project is to basically kind of come up with like a pamphlet that could potentially

be handed out to people kind of summarizing all of the information that I've found. Um, and just as a very easy way to try to educate people about forest fires and prescribed burns and where they can find the best information. And so those two resources sound perfect to add onto that. Is there something else that you might suggest or any thoughts that you have about that maybe?

Jinny (00:50:47): Well, I have a pamphlet that you could look at from a prescribed burn in September that was adjacent to, um, Crater Lake that could use as a, it might tickle you in some ways, but it also has, yeah I'll just send that to you templates if you wanted to look at how we do it. You're doing the more broad-spectrum pamphlet, this is more project-specific. But It might have some tidbits in it that you might want to adopt.

Morgan (00:51:28): Perfect. Thank you. I appreciate that.

Jinny (00:51:31): Yeah, it's really good. And we, you know, we post, we call them portals. So we use another thing we do for the folks that maybe aren't as connected to, um, the internet as others we have, we try to post portals and put up fire information. So we call them trap lines, both prescribed fire and wildfire depending on how big the [inaudible]. They have a trap line where we have someone physically deliver UpToDate information either posted on a sandwich board, which is wood, plywood, put staple documents too. And we typically put

those up out in the woods around the perimeter of a fire or a campground that is adjacent. And then, you know, we might go to a gas station or to a chamber of commerce and post, but that's a trap line that it's managed. And then the portals are where it's a road that's directly, that's probably gonna [inaudible] That the portal is more of a direct entry to the fire location where we have a sandwich board. I have a photo of what a portal looks like, but we post the project information about the project, about what to expect. I do have another document that we did crafting and years back about what to expect after a prescribed burn in terms of how the landscape may look, you know a chart on the Ponderosa pine, the bark will souffle and it'll become orange again. That scorch needles will in about three years will drop and you know what, yeah, what you can expect over the next post-fire what you can expect as that piece of land. Um, I don't want to say heals, but I think, evolves post-fire, what to expect visually and that, that's been pretty handy. I've used that quite a bit for prescribed burning and areas that are highly visible. Which is pretty much everywhere now. Yeah. So, um, it's another good tool. So I'll make a note, a list here, interested in the pamphlet, Morgan. Um, portal. Sample what to expect visually.

Morgan (00:54:49): Yeah. That sounds so great.

Jinny (00:54:52): Post-fire. Um, you know, a lot of times we'll put up signs and near campgrounds, in campgrounds. Say we're planning to burn here. Those campgrounds have a portal that's already permanent. You know, where information about fees or how you pay for your site. We'll, we'll throw up a little piece of paper that shows we are planning to burn here. For more information go to the central Oregon website. But it's hard. People always want to know well when, when are you going to do it. That's the hard part is we have to um, play the weather game, when the winds are right and field conditions on the ground are right, such, so on, so forth. There's a lot of planning involved.

Morgan (00:55:51): Yeah.

Jinny (00:55:54): Then there's also, I have a one-pager of all sorts of diagrams of the whole planning process to getting actually lighting the burn behind the scenes.

Morgan (00:56:18): Oh, that would be great too.

Jinny (00:56:18): And then as you progress and come up with more questions, you're just going to have to call me and say, Hey, what about this? Right. Feel free to run stuff by me.

Morgan (00:56:27): Cool. Thank you. I really appreciate that.

Interview with Nate a Wildland Fire Fighter

Morgan (01:36): Um, so one of the things that I wanted to ask before we officially start is if it's okay if I record, this is just for my own personal notes so that I don't have to write down word for word what we're saying.

Nate (01:44): Sure.

Morgan (01:46): Okay. Perfect. Thank you. Um, okay. So do you want me to just dive in and kind of tell you what I'm doing and what I need from ya?

Nate (01:55): Sure.

Morgan (01:58): So, um, I know it's kind of weird because this particular fire happened two years ago, but that's when I started my project. So at the time, it made sense. Um, but my goal with this is to really just try to get to know individuals who were affected by this particular fire, um, and the community, the Sisters community that was affected by the Milli fire. Um, and just really see how the fire affected them. So one of the aspects of a forest fire, of course, is the people who help to fight it. And so that was definitely an aspect that I wanted to include in this. Um, and so I have talked with James, at the Sisters forest service. Um, and he was great. He gave me so much information, it was fantastic. Um, and then he told me and I asked if he knew anyone that would be willing to talk to me and he suggested, um, and so I'm really just kind of looking for like your

side of the story, like what you, your role in forest fires, um, what you do and just kind of like how they affect you in your life if that makes sense.

Nate (03:17): Sure.

Morgan (03:19): Um, so I mean I have kind of like a list of really general generic questions, but I mean if you could just kinda like kinda start telling me what your job description is, kinda like what you do. I know this is mostly like a summer thing, so, um, and I know also that obviously the Milli fire happened two years ago. So if you don't, can't remember the specifics from that fire, that's fine. I mean, I just, I would love specifics from that fire, but if you can't remember them, that's fine. Just kind of like generally like what you do during when you go out and fight like a forest fire too. It was great.

Nate (03:53): Sure. Yeah. So I run the Hand crew here as Sisters. Yep. So I think 2017 was my first year. I'd been the assistant on the crew prior to 2017 and then that year I was detailed in as the captain, which just meant that the captain had left that year. And so I was in the job temporarily for that summer. Um, and then the main crew or all the hand crews on the Deschutes are a little unique compared to normal in that they're all 10 person hand crews as opposed to fully staffed kind of, the standard model is a 20 person hand crew. So Deschutes hand crews are all 10 people and then that is conducive to a little bit of a different kind

of resource called the wildland fire module, which is essentially a 10 person tanker that specializes a little more and any kind of alternative suppression strategy of fire. So anything that gets outside the normal realm of full suppression kind of tactics, wildland fire modules are designed to be, trained a little more towards an eye towards fire management and treating it as a fire and, uh, you know, being at their 10 people say a 20, they're more set up for kind of alternative missions. Being logistically self-supported, uh, maybe more data collection, uh, aspects of the fire. So that's kind of the way my crew is set up or is working towards, um, more of that wildfire module model. Um, so 2017 was the first year in a long time that this crew actually was utilized in that way. Uh, so we had gone out on a couple of previous roles, um, as a crew, uh, forests and we're just coming back to sisters. Um, knowing that we're probably going to be sticking around, uh, to help the DIA and for the whole, uh, eclipse happening. So, um, yeah, we rolled in and then, you know, that first morning back, James essentially sent us out to help with the Milli fire because they were short-staffed and needed resources that uh, you know, kind of specialized hand crews, they can operate at a higher level. And I'm not sure how much your, you know, into the whole fire suppression around you've gotten, but they were having a really hard time getting type one hotshot crews, you know, specialized community get to burn out. So that's kind of where our first day back in district James sent us to

help with the critical burnout as the Milli fire maze. You know, they kind of that big first push across the 15 road ran into the East. So, um, yeah. Any questions I guess at that as far as my role or as the hand crew captain or anything about anything I just said?

Morgan (07:01): Um, I mean, no, so far that all makes sense. And, um, yeah, I like that at least in like the Sisters area and a lot of what I've heard from you guys so far, it sounds like you're really focused more on like the forest itself and like preventing fires from even happening in the first place and like a lot of burnout stuff. And um, I think the methods that you guys use, they all, they all sound really great to me and the way that you try to go about doing it.

Nate (07:32): Yeah. Again, part of the aspects of that wildfire module model is as opposed to training and bringing people up to the standard to full suppression model, where all fire is bad and tactics of operationally just putting out fires. That resource, in particular, is geared more towards how do you actually manage the land with fire, and what's the best way to do that? Kind of a long term scale. So looking for unique opportunities to utilize natural stars to treat acres as opposed to just putting it out with as small a footprint as possible. Um, which isn't to say that, you know, there's always a lot of opportunities to do that, but that's kind of the mindset model of those resources. So yeah, it's definitely a passion of mine recognizing, you know, that we're not applying fire to the landscape like we

should be and that there's more of a need to use natural starts when time appropriate and, and actively grow those fires when you're actually getting kind of resource benefit that you're looking for when talking about time and place and everything's right to be really aggressive about actually trying to treat acres and utilize fire on the landscape. So, um, yeah, that's kinda my pitch on that, but uh, the Milli fire was not one of those cases when, you know, anyway, I think we spent about, I want to say 11 straight days on it. Um, we did, uh, probably the first three shifts or so, were kind of mostly burning out or trying to figure out how to corral it once it made that big push across the 15 road out towards the 16 road. Uh, so we, I think we did about three days of kind of firing and scouting and trying to contain it there. And then we did about two or three days of mopping upright as the eclipse happened and then, uh, kind of securing a fire line there, um, down along the white shoes there about just west of the 16 road. And then, um, we got asked to switch over to, uh, night operations with the rough river hotshot and, um, a few nights burning, uh, night firing operations for about five, six shifts, kind of trying to secure a line there along highway 242 and what ultimately ended up being in a fire line on the North end of 242. So, um, and now from an operational standpoint, it was really neat. That was kind of a new tactic that I had never implemented before. And the way we did that, you know, usually when you do a burnout or a firing operation, um, the wide off of your control line

and try and get enough depth off of that burnout so that when the main fire comes impacted, you know, you have enough depth on the line that will go over it. That's kind of the standard way to burn out a line. And this was unique in that there were enough options and enough roads in those areas to the South, the 242, uh, they, the day shift would spend time blocking out different blocks of roads and kind of preparing those. And we basically, you know, up along our control line and allowed us night operations to come in and burn out blocks and really do it very much like prescribed fire unit so that when we were done firing it at night, it was only contained inside roads and that our burnout when we can kind of let it do it own thing going into the next shift, it was contained within those routed lines and blocks. Um, and that was the first time I really experienced that. It was a really neat operation. Neat idea that James, I think was kind of the primary driver of, uh, it was neat. It was basically doing like, you know, prescribed fire operations in August at night. So we would burn, burn the blocks. Um, very much like we do a prescribed fire unit as far as lining people out and having a lot of control over the effects and the intensity of the fire at any given moment. Um, and really have a lot of control to be able to apply fire to that landscape. You know, kind of the way our prescriptions are written for prescribed fire, but doing it during suppression season and being able to treat acres with those, with the intent of it meeting our suppression goals and securing our control lines and also,

but you know, putting fire on the ground in a way that it's beneficial to the landscape.

Morgan (12:46): So I guess one of my big questions is just kind of like what is like during a forest fire when you're out there, like just what does your day to day life look like? How are you, I mean, how often do you sleep? Like you said you were on this fire for 11 straight days. Like, I mean, what, how do you cope with that? Like that just seems crazy.

Nate (13:11): Yeah. This was unique because we were operating out of our home district. So at the end of the shift, you know, everyone's driving home and logistics because we're a local resource just kind of helping out. We weren't actually assigned to the fire for those 11 days. We, we're also available for IAA and we were needed for our initial attack. Um, so that was hard because, you know, usually when you're on a large fire away from home, every, all logistics are provided for you. You know, you get up and there's, there's food for you and your lunches are already made. So, you know, that's a big part of large fire operations is that all that logistics is provided. Um, and so you can work, the standard model is you could work up to a 16 hour days, you know, required work to rest. You can't work more than 16 hours in a day. Um, except for really unique circumstances. Um, so this was kind of more exhausting in that, um, you know, at the end of a long shift, especially those five or six-night shifts, you know, we were

getting off at maybe 7:00, 8:00 AM and then people were driving home or commuting to Redmond or Bend and then having to, you know, get our own breakfast provider on our dinners own lunches to some extent. So that was hard in that Avenue. Whereas, you know, usually when you're on a large fire that's all provided you sleep you up and everything's there and provided for you.

Morgan (14:54): Okay.

Nate (14:56): So that was hard. But, um, you know, kind of standard shift would be, um, you wake up and start yeah, you get breakfast and then the overhead goes to the main fire-briefing while the rest of the crews make sure everything's dialed in and ready to go through the shift. And then you roll out to the line depending on what your assignment is, um, which, you know, really could be anything. So, um, pretty common for a day shift in the summer. You know, your briefing is going to be at 6:00 to 6:30 in the morning and then, um, you know, usually getting back into fire camps somewhere between seven to nine o'clock at night, eat dinner, um, and bed down. Um, but night shift obviously being a little different just the opposite timeline, but you still, you go to a night shift briefing, um, get that briefing for the night operations and then do the same thing, roll out and pull your night shift and, and roll back into camp and go to bed.

Morgan (16:02): Okay. So, but you were saying for this specific, for the Milli fire, you guys weren't assigned to it, you were just helping with it. Is that right?

Nate (16:13): Yeah, yeah. A little different, you know, James didn't want us fully committed to the Milli Fire. Um, just in case, we broke another fire, a new start on the division. He wanted to really pull us back to help with that. So the entire time, normally you have a resource order that assigns to that fire and you're fully committed to that fire, which obviously, you know, you need to be able to do for people to plan. You can't have a bunch of resources just coming and going.

Morgan (16:41): Right. That makes sense.

Nate (16:44): So, but because we are a local resource and we were able to provide some of that specialized experience, but um, as far as being able to have the experience to do more complex firing operations, uh, initially the Milli fires having a really hard time getting those resources. So that's why we initially went, went to help with it. Kind of starting that shift. They did start getting some, um, type one crews wanting to, you know, realize that it was going to be coming as close to the dig and the Sisters and surrounding communities. At that point, they didn't have too much issue getting type one crews that specialize in that kind of thing. But nevertheless, we still stay assigned for those 11 days just on that when

lease on any given day change could hold us back if they're going to start on the division.

Morgan (17:38): Okay. So you are, are you a Sisters' local then?

Nate (17:50): I live in Redmond.

Morgan (17:51): You live in Redmond. Okay, so you were having to commute back home to Redmond?

Nate (17:56): Yup.

Morgan (17:56): Okay. Wow. Um, so then you obviously didn't have any land or house that was possibility of getting burned by the Sisters' fire. Did you know anybody in the area that was just out of curiosity?

Nate (18:15): No, no. On a personal level, no.

Morgan (18:23): Um, I'm going to go reference my list of questions real quick. So were you just on the Milli fire for those 11 days then?

Nate (18:42): No, that was kind of the bulk of the operation at the end of that 11 days they got a good wrap on kind of the critical areas of the fire line around the Milli. It was just kind of the Southern end of it Southwest end of it that was continuing to burn in the wilderness that, um, wasn't, you know, secured with

line. Uh, so pretty much the rest of the summer after that we, we did work on the Milli fire, but there was that first 11 shifts or so that, um, you know, we were associated going to the team briefings, um, and kind of heavy, heavy-handed in the operations side of things. I think like I continued to operate as a task force for, I don't remember how much longer, um, but basically after that the crew kind of blew up a little bit and when, and kind of helped staff in different ways, but we all kept working on the Milli fire, whether it was kind of miscellaneous single resource overhead tasks or my group did a lot of uh, like snagging out around developed recreation sites for the rest of the summer. It definitely was the bulk of our work for the rest of the summer. Um, kind of after that 11 days operationally things wound down from the team fire management team perspective.

Morgan (20:04): Okay. So I know earlier you mentioned the eclipse and I was just curious like if, because of the eclipse you noticed anything different that summer?

Nate (20:17): Um, yeah, the eclipse conversation had been a massive topic of conversation. Uh, you know, beginning the previous fall and winter. Um, so it had been a big ramp up. There's a lot of things in place, thinking that basically no one would be able to move because of the traffic and in clumps of people during that time, a couple of weeks.

Morgan (20:43): Oh yeah. Okay.

Nate (20:45): It was, it, uh, it was a really, really big deal from the agency standpoint as to how we were going to try and manage during our critical fire season with, you know, basically just completely complete show-stopping time or we didn't think we'd be able to drive or maneuver or get around at all. So it was more about conversation and preparation ahead of the event that actually, I think what ended up happening is the smoke was so bad from that fire season that the info I've seen said population increase didn't happen based as it was expected to. So again, the smoke was really, I'm sure you probably heard about how bad the smoke was during that time.

Morgan (21:36): I was in Bend during that time, so yeah, I was, it was, it was really bad.

Nate (21:41): Yep. So yeah. Okay. So you were here for all that. So, um, yeah, all the planning that went into the eclipse it was good that we had a plan, but the effects of it were not what was expected. It was much lessened and reduced.

Morgan (22:04): So after the fire was over. Did you help with any of the recovery processes with the forest or anything like that? Or is your job specifically just like when there's the fire, you're out there helping with it?

Nate (22:21): Yeah, my job is specifically fires specific. So as far as the Milli and when it kind of went back to normal operations. Um, you know, we, in the fall we start winding into prescribed fire season and I can't specifically remember all how much we did, but I'm assuming we did less just because of how bad the smoke had been. But as far as, you know, at that point, the recovery process goes on to the rest of the Sisters ranger district and all that different knowledge that takes over from there. And um, go through the kind of the, um, I'm not the best one to speak to that, but as far as NEPA projects to build the, um, youth projects that need to happen to recover from the fire. And then there was, you know, a big push right after the fires to get the salvage logging happening and to the recognition that highway 242 that burned out through the really high severity that was going forward can have massive problems going into the following year. So there was a big push to try and help secure that 242 corridor and get a lot of that salvage logging done before the snow flew so that, um, it wouldn't just all come crashing down to the highway over the winter. So Steve Orange actually is kind of the person, he's our main, he kinda runs, um, the logging aspect of treatments around Sisters. So any kind of landscape restoration that involves logging equipment he heads that up. That's really the bulk of a lot of our, the way we do a lot of our treatments. He gets a lot of that done. So he headed up that whole salvage logging operation and I know that now that whole department

also worked their butts off to get 242 logged and secured and along with some of the other higher severity control lines that they can log a lot of timber. Yeah. The rest of it, the non-fire department truly spearheads all that.

Morgan (24:39): That makes sense. Um, so another question and curiosity I have is like how during this time, how does the community like to respond to you guys? And like what, how do you fit in with that, if that makes sense. Like, do you notice a reaction at all from like the Sisters community during that time?

Nate (25:01): You know, I can't remember specifically any, well, I mean that's not true. So in Sisters, we're actually really fortunate and that we have, we as the forest service and fire, in particular, have a lot of support from the local community. That is unusual. I'd say in most places. You know, a lot of smaller Western communities are kind of at odds to some extent. Certain bulk of the population has been at odds with the federal government, land management, and the forest service. So talking to other people that come from places such as John Day or you know the [inaudible], you know, it really depends on where you are, but Sisters does have a lot of support in the way just as far as the forest service goes in general. Uh, I always felt like, you know, when we're doing prescribed fire, which is honestly a pretty contentious subject, we are putting smoke in the air intentionally and affecting the community in some way. Uh, there's always going to be some people that are really upset about it. But for the

most part, my interactions with the surrounding community is primarily working as a burn boss, a person that's responsible for implementing, you know, those prescribed burn. I've had probably 90% plus positive interactions with the public and we have really good support from people. Obviously there's some complaints and people want to have a better understanding of how and why we're deciding to put smoke in the air on any given day. For the most part, yes, we get degrees in there but there are fewer people that are actually upset about it than the people that understand what we're doing around here and are very supportive.

Morgan (26:51): That's great.

Nate (26:54): When we do prescribed fires, um, we do a lot of outreach. Basically, anyone that wants to be on a list, we'll get contact, to give a heads up before doing a prescribed fire and you know, any given unit that we do might be close to different populations centers and so we'll use some level of outreach to them to make sure that they're aware of what's going on. And again, I'd always felt like people around here get it and recognize the need for the fire management that we do. So, um, specific to the Milli Fire. I know people were, definitely more on edge because of the fire itself and the threat from the fire. But because again, the smoke was so bad and there was a lot of lost tourism dollars. Specifically, I'm sure this has come up in other aspects of your conversations, but um, it's still, you know, there's still a lot of support like local coffee stands or businesses offering

free coffee drinks or some kind of little incentive to local firefighters, you know, local and out of town, helping with the fire. Uh, there's a lot of that pretty common, uh, local businesses supporting firefighters in some way. But, um, I don't know that having any personal tale to tell or personal relationships with people. And that, again, I'm sure you've had more conversations than I have about how hard hit the community was from a tourism standpoint. Or all those eclipse dollars that were expected to come in, a lot of that didn't happen. let alone the Sisters Folk Festival and other aspects of the economy taking a hit.

Morgan (28:42): Well that's great to hear that the Sisters community is so supportive of you guys.

Nate (28:47): Yeah, it really, we're really fortunate. Like I said, I've talked to people that have come here from other forests and they're kind of blown away by the support that we have. And Jinny Reed, she's been a long time, um, fire fuels planner here and she's done an incredible job of, [inaudible] that community outreach from garnering support. She kinda at the end of her career, but she's someone that has kind of helped really drum that up and build more community support over her career here.

Morgan (29:19): Can you say that name one more time for me?

Nate (29:22): Yeah. Jinny Reed, Jinny with an I and Reed is R. E. E. D.

Morgan (29:30): I'll have to look her up.

Nate (29:33): Yeah, she should be around. She's a huge fire on the landscape proponent, environment proponent, [inaudible]. She very much recognizes the need and is a proponent in selling the message of needing to get more fire on the landscape in a productive way. She's always out there pedaling that message and trying to get support from the community.

Morgan (30:01): Cool. Um, so I'm pretty sure those are all like the specific questions that I have. Um,

Nate (30:11): perfect.

Morgan (30:12): I dunno if there's anything else that like came to your mind that you thought or wanted to bring up or anything, but

Nate (30:22): No, I talk a lot. So I'll just kind of funneling some of that in your line of work. I appreciate the research you're doing Morgan. To have an opportunity to talk about what I do and sell my aspect of the message.

Morgan (30:36): Well, I'm definitely a supporter for prescribed burns and I want to keep our forest safe and um, keep them from having huge forest fires like we have seen in previous summers and things. So, um, just out of curiosity, how has this summer been?

Nate (30:54): Um incredibly slow.

Morgan (30:57): Yeah, that's what I feel like. I was like, I haven't seen a lot of stuff on the news this summer.

Nate (31:03): Nope. It's, um, one of the slowest years in recent memory. I mean, well below average, even back when the average was a lot less than it is now. I mean there's just not from a national standpoint, very little going on. Um, really Alaska is the only part of the nation that has had, you know, I'd say above average, just very much generalizing, but above average.

Morgan (31:28): Why do you think that is for this summer?

Nate (31:32): What just weather, yup. That's it just, um, nationwide weather patterns just made it, you know, a less severe fire season throughout the West than the normal,

Morgan (31:45): just cause like it's not as dry this summer. Is that?

Nate (31:49): Yeah, I think, you know, all the West had a, um, pretty, you know, average to above-average snowpacks. You know, again, very much generalizing predictive services, branch of forest service and federal agencies could speak way more to this and then, you know, a little bit I know. I notoriously don't really track, you know, broader general trends, but it is just lower than average. Um,

you know, above-normal snowpack generally across the West, and then it did start drying out in a lot of places pretty early on in the spring. We were incredibly dry for about two weeks during a prescribed fire season. And then we got a ton of Rain never had that, never had the same high temperature, low RH, high wind days to really dry things out. Without, you know, even the regional center that we have received came with a lot of rain. So it's really just putting a damp on the fire season here for mid-August and it's way lower than normal.

Morgan (32:55): So would that mean that like during the fall you'll have more prescribed burns because of that?

Nate (33:02): Yeah, actually it just came up yesterday morning at a briefing that given the unique situation that we're in both locally and nationally, we dropped back down to some cooler days with some higher relative humidity. We could start doing prescribed fire and certainly is, you know, kind of, I don't know, early to mid-September potentially depending on the weather, which is almost a full month ahead of normal. And part of that is not only just as the conditions are conducive to be successful in doing it, but that we could also get, know that we could get the outside resources and not be competing with, you know, a bunch of large fires nationally. If we need to put it in order to bring in some outside resources to help the prescribed fire. We should be able to get them cause there's just very little going on.

Morgan (33:49): Oh, okay, cool.

Morgan (33:52): Yeah. Combination. It was just weather, um, you know, putting us in prescription to do prescribed fires and not having as many fires locally. So we'd have enough local, uh, resources to be able to pull them off and also nationally so that we would actually need to bring in outside help we'd get it. So yeah, just the last two mornings, actually Morgan, that that was a topic of conversation to say that we needed to make sure all the prep is down on our fall RX prescribed fire units because we might start turning the key on getting those done sooner than later.

Morgan (34:28): Okay. Cool. Well, thank you again, Nate, for spending the time to talk with me. And even just the time to email with me and try to get together. I really appreciate it.

Nate (34:42): No, thanks for bearing with me. It's been busy. We're pretty busy the last month up until now, so, but yeah, good luck with putting it all down on paper, Morgan.

Morgan (34:53): Thank you so much. I appreciate it.

Nate (34:56): Yeah, you bet. And don't hesitate to call back if you think of anything else.

Morgan (34:59): Thank you. I will. I appreciate it. You have a good rest of your day.

Nate (35:03): You too. Good luck. Bye.

Interview with Roger the Sisters Fire Station Chief

Morgan (00:00): Um, okay. So I guess just to start, could you just kind of introduce yourself a little bit and tell me how long you've been a part of the community and your role in the community a little bit.

Roger (00:11): Sure. I'm Roger Johnson, I'm the fire chief for the Sisters camp Sherman fire district and I've been with the agency about six and a half years now.

Morgan (00:22): Um, and how do you feel like, have there been other forest fires in the area that you feel like you guys have had to deal with? Or was this kind of like the first big one that you feel like?

Roger (00:33): No, we had the Pole Creek fire in 2012, which was the first year that I came here. So it was very similar to the Milli Fire and the impacts, um, really impacted the business community. There were a lot of smoke intrusions. We had some evacuations of neighborhoods with the Pole Creek fire also, and

that started in the same region of the Cascades. Um, just West, uh, just West of the city. So very similar.

Morgan (01:00): And what is your guys' response to, um, a forest fire compared to like an in-town fire?

Roger (01:06): Right. Um, our fire district includes mostly properties that have homes on them and that are outside of the National Forest. So the forest service and BLM and Oregon department of forestry, they're predominantly responsible for wildland fire protection and suppression. We work closely with them and if there are any wildfires, even if they're on forest service property or state forestry property, if they're threatening residences within our fire district, then we engage and we help. And, and we do that. Uh, traditionally, um, structural agencies like ours who are focused on protecting homes and people generally don't go into wilderness areas to extinguish fires. That isn't our specialty. And so generally in a fire like this, our role would be to support, uh, the forest service to provide staffing or manpower if they needed it more for structural protection, helping identify where structures are helping determine evacuations zones and those types of things would be our primary role.

Morgan (02:20): And so were you guys pretty involved during the Milli fire then?

Roger (02:23): We were, we were, uh, we had to at least two subdivisions evacuated, uh, as a result of that fire. And so we would work with the state fire marshal's team that is also active in those types of fires. So, um, under the state, uh, conflagration act, when those types of fires happen, then the governor authorizes resources from around the state to come and help to protect structures. And due to this fire, uh, we requested that assistance and the governor sent five or six task forces over here. So we worked with those agencies who provide a mapping, provide them support, and they actually go into the neighborhoods. They help, um, prep houses, make sure that the homes are safe, that there's no flammable vegetation right up to the structures. If they're woodpiles touching homes and they'll move those for them, they do everything they can, clean gutters, clean flammable vegetation off roofs, do anything they can to make the homes more resilient, uh, from fire if the fire comes. And so we work closely with those groups to help them and get them into the communities and coordinate with them.

Morgan (03:36): And correct me if I'm wrong, but there were no structures that were lost during the Milli Fire. Right?

Roger (03:40): That is correct. Yeah we did not lose any structures in the Milli fire.

Morgan (03:40): Okay. I didn't think so. Um, so you guys don't ever go in and actually like into the wilderness and fight the fire, then you just do everything in the city?

Roger (03:52): Correct. Uh, on the Milli Fire. Um, sometimes we do, we'll go a couple of miles, three, four miles into wilderness area or state forest protected lands. If a fire is out in that area, um, we'll go anytime the forest service requests us. So we have mutual aid, so at any time they can call and say, we need help and we're, we'll go, um, we don't automatically go outside of our boundaries unless it's an imminent threat to a structure. So if there's a fire just outside of our boundary and we've got homes all around there that are threatened, we'll go put that fire out and we'll help them, we'll automatically go do that. There are times that the public can't tell when somebody calls 911. Uh, you know, sometimes we'll get reports from in town or even in Bend and they'll say, we see smoke up here. And so the 911 center will dispatch us and they'll say, uh, there's a report of smoke on highway 242, um, somewhere around the high school. So we'll go out because that's in our area and we'll keep going until we find it. And we may be five miles, three miles outside of the fire district and when we find it, we'll put it out. But on a large fire, like the Milli fire, generally the federal teams are in managing those incidents and they try to leave the local agencies, um, within their community and continuing to serve the community. Cause that's a challenge

for us is that we also provide the ambulance service for the region. So, um, we try to maintain ambulance availability, which is important to the teams that the firefighters have quick access to advanced life support paramedic service. So it's pretty important for them that our crews are available to help, uh, provide ambulance service for them and different parts of the fire. Um, they actually contracted with one of our ambulances. They wanted it up on the fire scene where the crews were working. And so the federal government then will hire us to take an ambulance out, clear up into the middle of the fire to stand by right where crews are working if it's a high hazard type um job that they're doing. And so we did that for several days during the fire too.

Morgan (06:15): Understandably. That was a big one. And lots of smoke.

Roger (06:21): And you know, we go to all the briefings, we participate in all the community meetings because a lot of the, you know, the community when we're gathering at the high school and there's hundreds of people there, they want to know, you know, when can we get back to our homes? Is our community safe? And so that's the role we would play is to talk about, uh, you know, our availability, our what we're doing within the community to maintain, um, safety and preparedness for them. You know, we work with the Sheriff's office on evacuations and when is it safe to get people back in there? That's a collaborative decision between the County sheriff. The incident command staff for the

management team from the forest service and then the local agency folks are involved with that. So we would be involved in those discussions,

Morgan (07:10): a lot of different groups to create all these different things and make all these different decisions.

Roger (07:15): It's pretty collaborative, it is.

Morgan (07:15): Okay. Do you feel like they all work very well together?

Roger (07:18): Yeah. Yeah, I think so too. I think so. And you know, they bring in teams from sometimes out of the region. We've worked with teams from Arizona.

Morgan (07:26): Yeah, I've heard that. Yeah.

Roger (07:28): So it's, it's really common. And, and they do, that's all those teams do. So they're very used to that system. So they're very inclusive. They all have, um, a person assigned as a liaison officer. And that person's role is to work with all of the local agencies to make sure that their concerns or needs are being met by the management team. And so we worked very closely with them. Some teams, uh, we'll have a structural protection specialist and it's somebody from the forest service incident management team whose only job is, is to help protect structures within the forest area. And then they work really closely with us.

Morgan (08:12): Right. Cause you do that as well.

Roger (08:12): They'll come in and yeah. So they'll come in and say, boy, what, where do you have homes? Where do you know where there's any outbuildings or anything like that? What do you have for mapping that can help us? And, uh, you know, are these bridges safe? Um, things like that. So they rely a lot on local knowledge that they then integrate and pass on to the teams within their planning. So there's a fairly significant role for the local agency and some of that.

Morgan (08:40): Yeah. Well, and lots of communication between all the different groups, so.

Roger (08:43): Yep.

Morgan (08:44): All right. Very cool. Um, I was going to ask, what areas did you have to evacuate in town? I've worked, I'm, I'm pretty sure there were evacuations, right?

Roger (08:53): Crossroads and uh, I believe Edgington and Remuda road, if you're familiar with that, which is, if you go up 242, yeah. but if you're out 242 by Sister's high school, right across from the entrance to Sister's high school to the left just past the old elk ranch or the Patterson ranch there, there's a gravel road that heads up in the woods there and there's a lot of little side roads off that. It's a little subdivision on a couple acre tracks up in there and there's quite a few

homes up in there. So I think that community had to be evacuated as well as crossroads.

Morgan (09:32): Okay. And do you happen to know off the top of your head about how many people that was?

Roger (09:36): I don't.

Morgan (09:36): Okay. That's okay.

Roger (09:37): It will be online on any of the online stories they have. If you do just Google evacuation, Milli fire, they'll have an exact count of homes and people and you know, there was a shelter set up at the middle school I believe. Um, and they had people staying there.

Morgan (09:54): Okay. I was going to ask if you knew what the people that were evacuated, where they went, and how they felt about everything.

Roger (10:00): A lot of them stayed with family and friends and some moteled it and um, you know, in the community meetings, um, that's always a concern on any of these types of fires. Anybody that's been evacuated wants to know when can we go home, when is it safe? Because it's pretty impactful. I mean they have

Morgan (10:19): Oh absolutely, the fear of losing your house.

Roger (10:22): They have animals there. Sometimes they had to leave chickens or you know, animals they couldn't take with them. They didn't have time sometimes and you know, the firefighters will go feed them and make sure they have water and they'll do everything they can to take care of any animals that are left behind. Um, you know, we encourage people if it's a slow-moving fire, um, when we go to a level one evacuation notice, which is the earliest, that sort of a get ready. We encourage people, if you have large animals, get them out at that time.

Morgan (10:54): Especially like the horses and you know, that's a big thing around here.

Roger (10:58): It just takes so much time.

Morgan (10:59): It does. Yeah.

Roger (11:00): So again, find an alternative place. Usually at the fairgrounds or someplace, they'll establish an evacuation area for, for animals, large animals like that. So we try to work with people to get them out early. Yeah.

Morgan (11:15): Very cool. Alright. Um, I'm gonna check my list of questions real quick. So how did the Milli fire affect you and your family in any way or anyone that you know, in the community?

Roger (11:54): Um, you know, for, for me personally, it's just uh, it's just a lot more hours of work and then routine projects you just get put on hold. So it impacts, um, the workload. I mean, cause it's early morning, it's 6:00 AM briefings, it's 6:00 PM community meetings. It's all-day, little sub meetings. A lot of times it's uh, so it just eats time and so a lot of your other work just sets or, or you have to do that outside of that. So it definitely impacts, um, time, and projects. Um, not so much family other than you just don't get to go home.

Morgan (12:40): Right.

Roger (12:42): But that's sort of a given in central Oregon. If you're in this business and you're in a fire adaptive community like this, then you're going to have those events. So for us, when we have a summer where that doesn't happen, that's a great summer.

Morgan (12:56): Yes.

Roger (12:57): But it's expected that it's going to happen. So I don't go into it, go, ah, man, I believe this happened. Uh, that just isn't practical. Yeah.

Morgan (13:07): Um, there was one other question,

Roger (13:10): You know, and as far as, uh, others impacted, you know, uh, my family owns a business in town, the Sisters meat and smokehouse.

Morgan (13:20): Okay. Oh yeah, I've seen that there. Yeah. I knew that, uh, some, uh, one of the firefighter's families owned that in some way.

Roger (13:27): Yeah. So that's my brother and his wife own that and my wife works there and uh, you know, their business, as well as all businesses, just drop. I mean, it's a tourist-dependent economy and in the height of August, in the middle of August is peak tourism season. And when smoke and fires on the horizon and they're evacuating people, then this isn't a preferred destination anymore.

Morgan (13:57): Right. Yeah.

Roger (13:58): So that impacts all of the businesses in town. So, um, you know, so that's always a concern, uh, for them is how, um, how, how evacuations are promoted, how the fire is reported on, you know, so a lot of our tourists come from the Valley, so people in Portland or Salem or Eugene are making decision if they want to run to central Oregon for the weekend. Right. Whatever. And you know, when all of the headlines are, you know, Sisters threatened Sisters evacuated, worst air quality in a hundred years, nobody comes and you don't want, yeah. I mean the air quality wasn't very good at all, so it's not a great place to be during those times. So that impacts people.

Morgan (14:47): Absolutely.

Roger (14:47): Yeah. So other than that, I mean, it impacts our staffing. Luckily our emergency responses were fairly normal or not elevated at that time, so we didn't see a, uh, a real increase in emergency response traffic associated with that. So that's good.

Morgan (15:08): Yeah. So I was going to ask about your staffing here, um, how many staff members you have, and kind of what their roles are as well. Um,

Roger (15:18): yep. We have, um, about 14 full-time employees. Um, and we use a combination of full time, part-time. We have nine firefighter-paramedics.

Morgan (15:30): Oh, so they do both?

Roger (15:32): Yep. Yep. So we have three on duty every day for 24 hours. So they work 48 hours on duty. They work two straight days and then they take four days off. So they're on 48, 96's is what it's called. And then we have a college resident volunteer program. So essentially we have three college students that are studying to be paramedics and firefighters and they live in the fire station here and they're assigned to a shift. So on any given day we'll have three of them on duty and they're working right alongside our career staff learning and training and doing that. So that gives us six people on duty. And then we have 35 volunteer firefighters. And so they respond when there's a fire from home. If they're available, they carry a little pager or their cell phone notifies them and

um, they respond. Um, we have, uh, a fire Corp program with 25 people in it and they are, um, either retired business people, just people that are interested in community service and they have all types of varied backgrounds and they do a lot of prevention, public education work for us. So they do address signage, they do blood pressure checks, they do car safety seat installations, inspections, um, all kinds of just work that it would be hard for firefighters to do on duty, they do for us. And so they play a pretty important role in our fire department too.

Morgan (17:10): Yeah. Yeah. Um, so I guess that one question that I also had was how did you feel the community, um, either helped or reacted to the Sisters fire and helped support you guys or didn't or things like that during that time?

Roger (17:27): Yeah. Um, the community's always very supportive of firefighters in these events. You see signs popping up all over. They drop food and water off. I mean, the community is super supportive of the firefighters. Um, you know, they get frustrated with the smoke, they get frustrated with the impacts. People that are evacuated are more frustrated, but they're appreciative. Um, you know, in all the community meetings, um, for the Milli fire, um, the people were super supportive and they would ask good questions of the people on the panel up on stage there, but they're all respectful, all very positive, um, and very appreciative, um, but still wanted it to be out. So, you know, I think that's, yeah. Very supportive.

Morgan (18:22): Did you feel like the Milli fire was an abnormal type of fire or, I mean, I guess you kind of, you had mentioned that there was another fire your first year that was very similar to it, right? Um, I mean, how many fires are typical for around here? Um,

Roger (18:38): yeah. Um, let me pull it up for you. I see. We've got a guy that does some mapping for us and I'll try to find that. So this, this is Sisters, this is our fire district, this red boundary. So these are significant fires in our modern history, in relationship to our fire district.

Morgan (19:22): Wow. There's quite a few on there I didn't realize.

Roger (19:25): Yeah. Yeah. And, um, and there's a lot more than that. These are just large fires, um, federal fires. Um, but you can see a lot of them. This is in our district. This is in our district, these little green spots. And, um, this is vacant, um, land without developments. But these other squares have homes. This is crossroads here. Um, and then this is Tollgate. Uh, here's Black Butte ranch. This is Squaw Creek Canyon estates out in here. If you're familiar with that, if you go past the airport out Camp Polk, and you go out Wilt road.

Morgan (20:09): Okay.

Roger (20:10): This is the Sage flat fire here. Um. So it's very common here. The residents, most of the people that live here, um, they, they get it. They have been

through so many of them. If they've lived here any amount of time, um, I've got some other ones.

Morgan (20:35): And are most of those naturals that start or are they human-caused, do you know?

Roger (20:43): Um, the forest service would be the best. Mmm. This would be a bigger view here of, I mean, here's Sisters. So this takes in, uh, some of the Camp Sherman area. So this is Black Butte 1981. 2009, Lake Creek. Um, BNB, fire Cache Mountain fire in 2002 actually burned two homes in Black Butte Ranch, uh, George Washington fire. A lot of these, uh, have multiple fires. Uh, Black Crater, Trout Creek, this doesn't have the Milli fire on it. Um, so this is South of Sister's heading up towards Three Creek Lake. So I've got Peterson Mill, Squat Creek, [inaudible] Rooster Rock was a big fire, Melvin Butte. So this whole community, uh, here's Sage flat, Stephen's Canyon, Henkel Butte, if you're familiar with any of those names. Um, but again, this is past the airport. If you go north past the airport, out Wilt road, this is Squat Creek Canyon estates subdivision and this is Black View Mountain itself. Yeah. So you can see this whole community, yeah. Surrounding for years. I mean, here's 1930 fire. These are the older ones.

Morgan (22:12): Oh wow. Alright. A long time.

Roger (22:15): Right. The red ones are the more recent, you know, it's sort of color-coded. I could email you that if you would be interested in any of that.

Morgan (22:23): I mean, yeah, that would be fantastic. Thank you.

Roger (22:33): So I forward that to you.

Morgan (22:37): Thank you.

Roger (22:55): You're welcome.

Morgan (22:58): So I guess one of the last questions I kind of have is just if there's anything that you think you would like to pass on to the community or anything that specifically you want them to know regarding forest fires like this in the future? Um, or even just for me to know. Um,

Roger (23:15): right. Um, you know, I think yeah, you look at the Paradise fire, we're getting a lot of, um, concern and fear about, you know, a Paradise model and it's a, it's a real risk. We live, we're surrounded by national forest. I'd say one of the positive things, uh, that we have going for us locally here is the topography around town is a little flatter. So steep Hills, uh, fires, race up, steep Hills, canyons, really canyonous land, steep terrain will move fire really quickly. So when you look at paradise, if you look at an aerial image of that, the town was on a flat, but it's on the top of great big steep canyons. And so, um, if you picture

holding your hand over a candle, right, the heat goes straight up. So you burn your hand. If, if you look at a really steep slope and you have a fire here, what happens is this stuff here is preheated just like holding your hand over a candle. So, um, as you, as the fire works up a steep Hill like this, everything ahead of it is preheating. And so it's, it just starts churning and then it makes it hotter, which creates more fire and that creates more heat and that creates more fire. And if you think of, um, like a wood stove and a chimney, the hot gases go straight up and you open the vent on the bottom and it lets fresh air in the bottom right. And that makes a fire burn hotter and more stuff goes out the top. It's similar to this as a fire races up the Hill. It sucks more. All the heat is going straight up. It's sucking fresh air in the bottom and it, you know, in canyons and on steep train fires will just go fast. And um, so that's something that paradise had that we didn't have. Uh, another thing that we have locally here is the forest service does a tremendous job of doing fuel treatments. And that would be something you could talk to James about is the safer treatment, which is the Sister's area fuel reduction program. And essentially what they do is they go all around the community on federal property and they mow, they thin trees, they mow the brush down and then they will burn the slash and they remove fuels. And so that was really, uh, critical. And part of stopping the Milli fire was that the forest service was able to go to some of these fuel treatment areas where the fuel was

really thin and they were able to do some back burns and uh, actually, uh, extinguish the fire by removing the fuel ahead of it. So there's been a lot of fuel treatment around the community. As fires get closer, uh, the topography gets flatter and there's a lot of fuel treatment that's already been done. So it makes the community a lot safer. The fuel treatments can be controversial for the community.

Morgan (26:20): I have heard that.

Roger (26:21): Right. And that is a lot of people don't want the smoke associated with fuel treatment. So, um, you know, people that the forest service would tell you, uh, you're going to have fire. There's been fires here for hundreds of years, thousands of years. Uh, lightning will come through the mountains and it will catch forest on fire. So, um, you're going to have smoke. So it's how do you want it? Do you want your smoke in the spring in a controlled fashion that makes your community safer? Or do you want your smoke in the middle of July and August during the peak and tourist season, um, in an uncontrolled fashion, but you will have smoke. That's not an option to not have smoke. Right. So that's okay. That's I think something that the forest service could, could speak better to because that's their specialty. I would ask them about that. And uh, because they are doing thousands of acres of treatment around the community and it does make us significantly safer.

Morgan (27:28): I was going to ask if you felt like it's been working, have you seen a difference since they've started doing that?

Roger (27:33): Right. And, and James will tell you, there were points on the Milli fire where they, uh, used those, um, treated areas as an anchor point to extinguish that fire. So, you know, this fire started in the wilderness area and burned out of the wilderness into the national forest. And that's sort of a distinction too. I mean, as, as you visit with James and it could be part of the discussion, um, sometimes the community is, um, upset or just has concerns about firefighting ability within wilderness areas. We're fortunate to have a wilderness area, The Three Sisters wilderness area. Um, but it limits, you can't put heavy equipment, you can't use a bulldozer in a wilderness area,

Morgan (28:25): Can't get anything out there. You have to hike out there,

Roger (28:29): Yeah, you have to hike out there, you can't use a lot of machinery. Um, there are restrictions on what you can do in a wilderness area because the wilderness act was designed to protect these as pristine, untouched by human hands, essentially environments. So it impacts when a fire like this starts in a wilderness area, it limits what they can do. They can't put a bulldozer up there to cut a fire line around it. It's all hand lines. And it's all, you know, people with shovels and Pulaski's digging line, which is slower and it's harder to put out stuff

like that, you know, then the fire progressed into the National Forest. So National Forests, you can use bulldozers, you can use things like that. And um, but sometimes, uh, fires, by the time they come out of the wilderness are bigger and they're harder to control. So, but you have roads to work from. You can, you can bring a water tender, you can bring pumpers in there, you can, you can use bulldozers in national forests. And, um, that's what they were able to do with Milli is my understanding on, on their strategy was to some of these fuel treatment areas where they brought machinery in, had done mowing, done thinning, done some prescribed fire and the forest was thin. They were able to use that as an anchor to extinguish Milli.

Morgan (29:54): Okay.

Roger (29:55): Yeah. So it'd be a good discussion to have with James because it is, it is a really sensitive topic for people. And, um, you know, I think, uh, I think that's probably what the future needs is more treatment of the forest. Um, and I'm sure somebody has already told you that, um, our forests are sort of overstocked. Uh, there's probably more trees, uh, in the forest due to our firefighting strategies over the last 100 years. Um, there, there are more trees in the forest than what the forests before then ever had because fire was a natural part of the ecosystem. And, uh, native Americans would use fire. Lightning has happened for millions of years. Right? So without anybody here to intervene,

lightning still happened. And these forests still burn and they can tell from large trees that they do core samples they can tell you how often large fires came through these areas. Yeah. And um, so the forest service in the formative years of the forest service, um, they started extinguishing fires. So they called it a 10:00 AM rule that all fires had to be out by 10:00 AM the next day. And so the forest service was formed. They aggressively started extinguishing fires that have been very successful, uh, for more than a hundred years. Well the result of that success is that we have national forests that are overgrown and when trees get too dense, um, it's easy to transmit bugs. Um, and part of that is because it's easy for them to propagate and trees are stressed because there's too many trees for what the ground can support and so they're more susceptible to disease and infestation. So there is a school of belief that, um, due to our successes in fire suppression over a hundred years, we're creating an environment that is almost impossible to stop, um, due to the density of the forest. So, um, there's a lot of talk currently about the need to thin the forest and try to get the forest back into balance of, you know, what's healthy for the trees, what protects the environment, makes them less susceptible to infestations and disease and provides fire resilience for the communities. So it's a really, really interesting work and discussions going on on a national level about that.

Morgan (32:38): Yeah. Do you possibly think that any of that has to do with the banning of logging that's happened?

Roger (32:45): Um, I don't know. I mean, there are those in the logging industry who would probably say so. Um, I think, um, what some of these groups are talking about. Um, in Deschutes County there's a neat group called the Deschutes Collaborative and it's a group of environmentalists, loggers, fire specialists, and forest service. And these folks work together, uh, to try to find a solution to this. And, uh, I've been to some of their presentations and, um, you know, they all, everybody cares about the health of the forest. Nobody wants to see a BNB burn type scar. You know, the impacts to the environment and the river system and wildlife of a fire like that is so catastrophic that environmentalists don't like that. Loggers don't like that. Nobody likes that. So I think everybody agrees on that. Right? Um, and I think you're starting to see consensus amongst some of them that we do need to do some thinning and some treatment in the forest, um, that leaving it untouched It's growing out of control. And I think you'll see the forest service. Um, and you can talk to James about, um, how they manage fires. I mean, every fire they will look at and they say, okay, what's the risk to people? What's, is it safe for firefighters to be in? Where's this burning? Is this something we have to intervene with? Um, you know, some areas they may let there, there may be a desire to let a fire, um, sort of manage its growth in an effort to remove

fuels. And actually to bring the forest back in balance. Right. So there's a lot of really good work going on about that. But the general consensus I would say is that the forests are overstocked and it's out of balance due to a hundred years of fire suppression. And, um, yeah, really, really good stuff. Um, Dr. Paul Hesberg, have you ever seen him or heard of him? He would be a good person to look at?

Morgan (35:06): Okay.

Roger (35:06): We brought him into town. We co-sponsored it with the forest service last year and he teaches a class called the era of megafires. And he's a doctor with forest service, spent his whole career studying fires and now he's studying fires that are larger than a hundred thousand acres of what he calls mega-fires. Okay. And so he has, um, photos that they've gathered of forests, um, for more than a hundred years ago, taken from the same point. And so what he shows in part of his presentation is what a natural forest used to look like versus forest today. So he talks from a Forester's perspective of what a healthy natural forest should look like. Uh, it's an amazing presentation. He's got some on YouTube. He did some Ted talks in Bend.

Morgan (35:57): Oh, I love Ted talks. Yeah.

Roger (35:59): And uh, but he would be a good one for you to look at some of his stuff to get a feel for how we got here and, and what a healthy forest looks like.

Um, you know, some of my logging experience, I came from Douglas County, Oregon. I worked there for 28 years before I came here. And that's a timber dependent. Douglas County is, you know, a very timber dependent economy, a lot of logging, a lot of loggers there. And you know, a lot of the work that they would do in that area is sort of clear, cutting a swath of land and they remove all the marketable trees and replant and do that. But it still leaves everything around it in a super-dense overgrown capacity. And I think what, what some of the modern science or what they're talking about is more of a patchwork, more of a thinning, more of a lower the intensity where you're not getting a crown type fire where the tree isn't burning all the tops of the trees. The fire isn't as intense. It's a low-intensity ground cover fire that's burning the spare fuel, but it's not killing the trees. And that's done more through a thinning, through a fuel treatment type process. Not a, probably not a clearcut harvesting process. So, um, yeah, it would, you'll, you'll get into that. But the forest service, they have people who specialize in trees, we don't.

Morgan (37:38): You specialize in fire

Roger (37:41): Housefires, you know, brush fires and ambulance stuff that's what we do. But we're, you know, we were a very close partnership with forest service and the state, so, but they'll, they'll fill in the gaps for you. But I would definitely look at some of Paul Hesberg stuff. Yup.

Morgan (37:58): Um, I guess one last question I have is do you have any suggestions of other people that I could talk to regarding the fire, whether they're just community members or firefighters or things like that?

Roger (38:15): Well, um, um, you know, the school district is always impacted by these. Um, and they were with the Pole Creek fire and I think they were impacted on this. I mean...

Morgan (38:25): I know they had to cancel the first two days of school.

Roger (38:27): Right. But you know, it's, and I think they had to buy a new filtration system for the school. So, um, you know, when you start thinking about the health and safety of children, it impacts sports practices. Should we have a game here? Uh, which just happened in California with the Stanford game, Stanford football game due to the fires there. San Francisco and the Bay area is filling up with smoke. So they canceled the collegiate football game due to the smoke. Here, um, and it might've been Pole Creek. They moved sports practices into other communities because it just wasn't healthy here for people. And you know, people worried about going outside, sending their kids outside. You know, what's the air quality in the schools? And that's, you know, that's a big impact. And, you know, the health of children is very important to people. And, um, you know, as school superintendent, his responsibility is making sure that students

have a safe, healthy learning environment. And so all of a sudden there's a fire outside of his control, but it's impacting the entire school system. And, um, you know, the filtration system, canceling school, having school, what is the health level, what's unhealthy, what's too much, what's too little. Um, and every parent will have a different opinion. you can imagine that there's probably if you've got a thousand students, you've got 2000 opinions. so they're impacted. Um, you know, if you wanted to talk to the chamber, chamber of commerce from the business perspective, I mean, if you talk to Brad, you got the nonprofit piece and how it impacted, you know, that has a school connection to, which I'm sure he told you about that. And, um, so, and that impacted businesses too, but the chamber might be somebody to talk to. I don't know that the city, um, Paul Bertagna would probably be the most familiar person, uh, within the city with the fires. Uh, the city manager is new. And so a lot of their staff, uh, weren't as directly involved as what Paul probably was. Um, but he, he might have some interesting input on that Oregon department of forestry if you visited with them, or are they on your list?

Morgan (41:05): Uh, not yet, but I will add them.

Roger (41:08): Bend do da, Oregon department of forestry. So if you head highway 126, like you're going to Redmond from Sisters. Okay. So just about two or three miles out of town on the left side, there's a little, a Firestation looking

thing and that's Oregon department of forestry. I can forward you his email contact.

Morgan (41:28): That would be fantastic.

Roger (41:29): Yeah. And um, he would be a good person to talk to because they're a lot of these fires. And this fire did too, which made an interesting discussion with Ben, is that there's, um, private lands up here. So they're timber companies that have big swaths of private land that were surrounded by national forest. And so it's not uncommon on these types of fires that, uh, the fire starts to progress and then it comes onto private property even though there are no homes there.

Morgan (42:06): I didn't even think of that.

Roger (42:07): Right? And so that's Ben's responsibility is to protect private forest land. Okay. So his role then and on the Milli fire became an issue because they wanted to cut a fire line through a private track of newly growing, privately owned timber. And so, uh, Ben had to work with the owner of the timber to tell him that, um, they were going, they wanted to cut, bulldoze a line through his timber patch and light half of it on fire to create a fire break in order to put out this fire on national forest property. And so that's an interesting sort of political dicey thing, right? Because that can be a conflict between private owners of

timber and the federal government, right? Um, some private owners of timber, this is their business, right? And if the federal government doesn't take care of their forests, and if they don't manage their forests effectively and their forest catch on fire, then it can burn down their business.

Morgan (43:23): Right.

Roger (43:24): And so that can create conflict between private and federal forest agencies. So here we all work, um, you know, the firefighters all work very well together and administrations work exceptionally well together. But, you know, I would talk to Ben about the relationship between private forest owners and the federal forest managers and property and how, how that's impacted. Because it'd be an interesting discussion for you.

Morgan (43:57): Yeah. And like I said, it's something that I didn't even consider, just kind of always, I didn't even think about there being private land that didn't have houses on it. Right. So, yeah.

Roger (44:08): Yeah. Um, yeah, and I don't think Google maps will have, will have the fire on it. You'll be able to see it. But, um, James will be able to show you a map of all of that and where the private lands were. But almost every fire that we have like that, it's threatening private lands of some type. And so that's always a concern and always a problem for Ben. And, um, and you know, they have aerial

resources also that they help with. And so ODF, they protect a lot of land in the state and they, um, as you go into Southern Oregon, uh, they've got, um, the ONC lands, and I don't know if you're familiar with those, but sort of a hodgepodge of private and federal owned land. And that's a common concern over there is that the ONC and the forest service, their forests are so unhealthy and there is such a risk to the private timber owners that the private timber owners are really upset that their property is getting burned up due to the careless management of federal forest. I don't know that that's as prominent here of a belief, but it's, it's common on the Western, uh, Western slopes and especially in the ONC lands. Yeah.

Morgan (45:32): Well Perfect. I don't have any other questions, so unless there's something else you can think of?

Roger (45:38): No. No, I think you're on the right track. So...

Morgan (45:40): I really appreciate you, like I said, doing this on such short notice and helping me with this. It's been really great knowledge and learning so much. So, um,

Roger (45:51): Well, we're happy to help. If you end up getting back and thinking of something or wanting to clarify, send me an email or give me a call.

Morgan (45:58): Thank you.

Roger (46:00): Good luck on your project.

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