

LANE COUNTY MEDIA COVERAGE OF WILDFIRES AND  
SMOKE IN RELATION TO CLIMATE CHANGE

by

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A THESIS

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Forest fires have been all over the news in Oregon the past two years, especially during the dry summer months which have hit record-high temperatures and record-long periods without rain. Due to nearly a century of fire exclusion, wildfires continue to get larger and wildfire season continues to get longer each year. This already devastating pattern is accelerated by climate change due to climate scientists predicting hotter and drier summers in the Pacific Northwest. Yet, existing literature shows climate change continues to be a low priority for the public. The media is one of the main avenues through which the public receives information about both forest fires and climate change. I hypothesized that most local media coverage of forest fires does not mention climate change. My thesis project analyzed local media coverage of forest fires and smoke here in Lane County using a content analysis: keyword searching for words such as 'climate change' and 'global warming' in relevant articles from May 2017 through November 2018. It was found that only 21.3% of Lane County media coverage of wildfires and smoke mentioned climate change. The purpose of demonstrating this lack of coverage is to start a discussion about the media's role in communicating information about wildfires and climate change.

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## Introduction

Forest fires have been all over the news in Oregon the past two years, especially during the dry summer months which have hit record-high temperatures and record-long periods without rain, according to the Weather Channel. As shown in figure 1, during the summers of 2017 and 2018 the Pacific Northwest suffered from low air quality, some of the lowest in the world. These dry, hot, and smoky conditions are predicted to only become more common in the future.

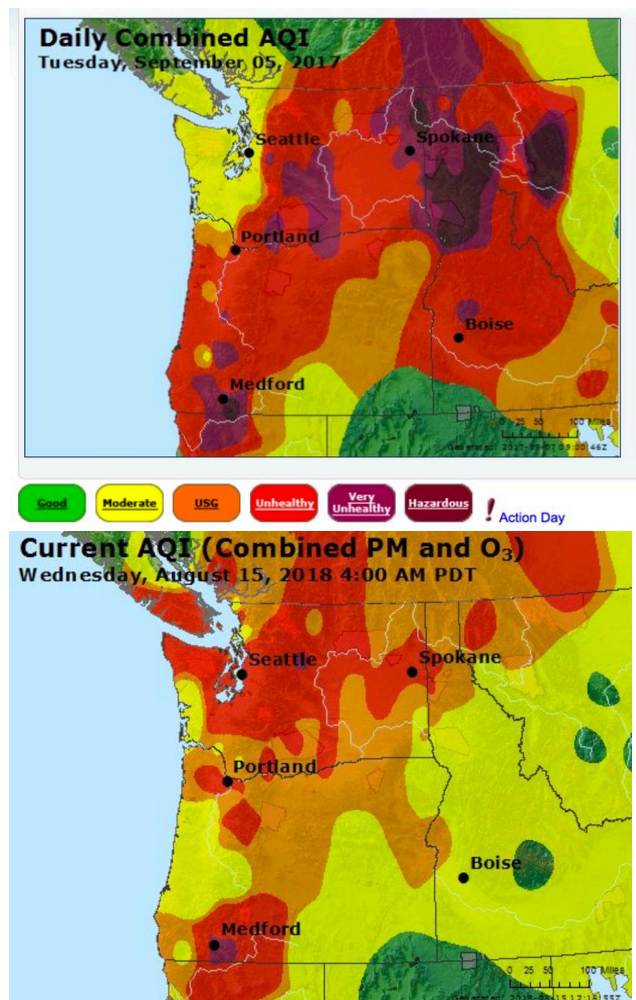


Figure 1. Environmental Protection Agency AirNow.gov maps of the Air Quality Index in the Pacific Northwest during September 2017 and August 2018.

The history of wildfires in Oregon and the Pacific Northwest as a whole is extremely complicated. To the best of our current knowledge, the 1500s and 1800s were periods of extensive fire and the 1600s, 1700s, and 1900s experienced less extensive fire (Duncan, 2002). These patterns probably represent climate signals in the 1500s and 1800s as well as the actions of European settlers to increase fire in the late 1800s and suppress it in the 1900s (Duncan, 2002). 1950 was when we began to see the reduction of widespread fire with the development of forest road systems and improved fire-fighting technology along with this being a period of fuel recovery after experiencing extensive fires during early settlement (Duncan, 2002). Our current conditions in which large and destructive wildfires thrive are due in part to nearly a century of fire exclusion: trying to eliminate fires from the landscape using fire suppression techniques. "If fire is excluded for many centuries, however, dense second growth stands of Douglas fir and western hemlock (*Tsuga heterophylla*) often stagnate and succumb to root rot. As fire is withheld over time, litter and down woody fuels as well as ladder fuels continue to accumulate, setting the stage for the catastrophic fires that these ecosystems are now experiencing" (Moser, Keith, Wade, & Dale, 2005). This unnaturally high accumulation of dead material on the forest floor can cause extreme wildfires under dry conditions (Moser et al., 2005). These devastating wildfires are not caused solely by climate change, they are in large part due to this fire suppression problem. However, climate change is accelerating this already devastating pattern of extreme weather.

The Pacific Northwest can expect progressively hotter summers and loss of snowpack, which is the main water source for forests and agriculture in the summers

(Law & Waring, 2015). Therefore, we should expect drier summers and a longer fire season. A study from 2000 found that the impact of climate change on forest fires may be more substantial than the direct effects of climate change on species migration and extinction (Flannigan, 2000). The study predicted that the seasonal severity rating will increase by 10 to 50% in the United States by 2060 due to the impact of climate change (Flannigan, 2000), which will likely have an immediate and severe impact on ecosystems as well as public health (Flannigan, 2000). The impact of climate change on the future of our planet is extremely hard to predict, but scientists agree it will be catastrophic.

The 2019 Oregon Climate Assessment Report covers the current state of knowledge of changes in Oregon's climate and its impacts based on research done by a small staff at Oregon State University as well as a larger network of over 150 researchers in Oregon and beyond (Mote, Abatzoglou, Dello, Hegewisch, and Rupp, 2019). The report explains that Portland and the Willamette Valley experienced some of the worst air quality on the planet in August 2018 due to smoke from wildfires (Mote et al., 2019). During this year, ranchers reported significant economic losses caused by lack of water from low winter snowpack and a hot and dry summer and 11 counties received an emergency drought declaration due to low flows in the Siletz River (Mote et al., 2019). Globally, the concentration of greenhouse gases is continuing to rise, and Oregon is projected to warm by about 4-9 degrees Fahrenheit by 2100 depending, in part, on whether or not global emissions continue to rise (Mote et al., 2019). "Most locations, except the cooler mountains and the coast, will see an increase of about 30 days over 86°F by mid-century compared with the recent past" (Mote et al., 2019).

Snowpack will continue to significantly decline through mid-century, in the winter increasing flood risk due to precipitation falling as rain instead of snow, and in the summer, flows reducing by up to 50%, causing challenges for water rights, hydroelectric power generation, and commercial and tribal fisheries (Mote et al., 2019). Yet among all of these challenges, the report states that "The most obvious impact of climate change in the west in recent years has been fire. Recent catastrophic fires in California and major wildfires in Oregon highlight the vulnerability of the state to increasing wildfire in a warming climate" (Mote et al., 2019). Across Oregon, the fire risk is projected to increase, with the largest increases in the Willamette Valley and eastern Oregon (Mote et al., 2019). The smoke from these wildfires poses a health hazard, especially for vulnerable communities such as outdoor laborers and children (Mote et al., 2019).

One might expect that physically experiencing low air quality and extreme heat in Oregon would make climate change feel more real. Yet, existing literature shows even in the past ten years there still seems to be a disconnect. In a 2010 book titled *Science Communication* Kahlor and Stout explain how "Despite the strongest conclusions to date by the scientific community about the urgency of the issue, polling revealed that global warming still scored consistently as a bottom-tier political priority for the public." The media is one of the main avenues through which the vast majority of Americans receive information about both forest fires and climate change, yet the majority of coverage of extreme weather is not being connected to climate change. In a 2018 article that describes the limitations journalists face when covering climate change, Park explains the idea of "'Climate silence' reporting, where the news media



ignore climate change or choose not to connect its effects when covering extreme weather or energy use, also appears to be increasing." My thesis project analyzes local media coverage of forest fires and smoke here in Lane County in order to come up with numerical data showing that the local media has not connected these experiences to climate change. The purpose of demonstrating a lack of coverage is to have quantitative research to help start a public discussion, comment on how the media can do better, and suggest further research questions beyond my thesis.

## **Research Questions**

Are Lane County publications including climate change in their coverage of forest fires and smoke? Where do we go from here/how can the media do better?

## **Hypothesis**

It is hypothesized that most Lane County media coverage of wildfires and smoke will not mention climate change.

## Literature Review

The existing literature in this area is largely on climate change and the media. There is not much specifically on the media and forest fires or smoke. Existing literature provides a lot of insight into the limitations journalists face when covering something as complex as climate change.

In his 2007 study, Maxwell Boykoff found that 70% of U.S. television news between 1994 and 2004 showed ‘balanced’ news coverage of climate change. Meaning, in an effort to stay unbiased, journalists have attempted to balance the science supporting climate change as a human-caused issue with opposing viewpoints. However, disregarding the scientific consensus actually instills bias considering the scientific consensus and the scientific minority are treated equally (Nisbet, 2010; Shanahan, 2007).

Another limitation journalists face is when media gatekeepers, such as editors, discourage them from covering climate change. They do this because many audiences have a hard time comprehending climate change in comparison to more sensationalized stories that get more views and sit better with advertisers who may have conflicting interests (Gibson, Craig, Harper, & Alpert, 2016; Shanahan, 2007). This is important because media gatekeepers and journalists influence the public agenda, meaning the media choosing to cover certain issues inadvertently tells the public which issues they should be thinking about (McCombs & Shaw, 1972).

An additional limitation is the power of the fossil fuel industry and the impact it has had on public understanding of climate change (Park, 2018). Big oil companies have funded research, politicians, books, films, and organizations to question climate

change and focus on scientific uncertainty (Oreskes, 2012; Park, 2018), thus confusing the public even more.

Media coverage of climate change is typically framed in one of the following ways: denial, despair/alarmism, small actions/individualism, financial analysis, and the most underreported of all, framing climate change as a human rights/public health issue (Futerra, 2006; Shanahan, 2007). Denial framing of climate change is essentially when coverage fixates on ‘scientific uncertainty’, typically funded by those who benefit from this type of coverage like the giant oil company ExxonMobil (Shanahan, 2007). Climate change coverage can also be framed as a financial analysis, looking at the cost of action versus the cost of inaction (Shanahan, 2007). The human rights/public health issue framing is the most underreported due to the lack of resources many of the poorer areas most affected by climate change have (Shanahan, 2007). The two most common ways the media, government, and green groups have framed climate change, according to the UK Institute for Public Policy Research, are “Alarmism (we’re all going to die) and Small Actions (I’m doing my bit for the planet – and maybe my pocket)”. It concluded that these narratives are “confusing, contradictory and chaotic, with the likely result that the public feels disempowered and uncompelled to act” (Futerra, 2006).

In chapter four of the book *Strategic climate change communications: effective approaches to fighting climate denial* edited by Jasper Fessmann, research is done to test the effectiveness of different climate change imagery. Kim Sheehan, Nicole Dahmen, and David Morris examined which type of image (melting ice, extreme drought, or forest fire), the inclusion of people (no people, group, or individual), and the locality of the climate effect (local or global) affected emotions and engagement of the

audience. They found that having a single person and a forest fire had the largest impact because people were able to empathize with the subject and directly relate to forest fires based on their own experiences (Fessmann, 2019). This shows the impact that forest fires can have in terms of resonating with the public and connecting climate change with personal experience. It also shows the effectiveness of the human rights/public health framing of climate change in a visual example.

In a 2013 study, Thomas Dietz talks about the importance of trust and values in science communication regarding climate change specifically. He argues that we rely on science communication for information about issues on which we make decisions. He suggests it's often difficult for us to make decisions about contemporary environmental problems due to scale, trust, and values. Regarding scale, climate change is impossible to consider on its own, as it is sophisticated and engages so many other issues. Trust is very important to most people and "for most large-scale policies, we are asking members of the public to trust large organizations (e.g., governments) and institutions (e.g., science) with which they have limited direct experience". Climate change has become politicized among the public and the US political elites, causing many people to see media coverage as political rather than scientific. Although public trust in the United States of science hasn't changed much over the past 35 years, self-identified conservatives have gone from having the highest levels of science trust to the lowest. Dietz suggests that values need to be acknowledged when communicating science to the public. "Better scientific understanding might clarify the likelihood of various outcomes, perhaps solidifying your interest or perhaps reducing your concerns. Science can also clarify whose interests are harmed by a course of action and who

benefits. Then, finding compromises and compensation could make some courses of actions more acceptable than they would be otherwise” (Dietz, 2013). This acknowledgment of values parallels the human rights/public health framing and financial/economic framing of climate change because it frames the issue around these values shared by many Americans.

In 2008, Jennifer Ellen Good published a study looking at the framing of climate change in Canadian, American, and international newspapers. Most relevant to my research, Good looked at how often the top 50 U.S. newspapers in circulation included certain extreme weather keywords along with ‘climate change’ or ‘global warming’ over one year. She found that no U.S. climate change or global warming stories included the keyword ‘extreme weather’, as few as 3% included the keyword ‘flood’, none included the keywords ‘forest fire’, and as few as 5% included the keywords ‘hurricane’ or ‘storm’ (Good, 2008). To summarize, very few U.S. climate change stories include any mention of any type of extreme weather. As Good explains, “Extreme weather - hurricanes, storms, flooding, forest fires - is the way in which climate change is obtrusive, or manifest in people’s lives”, making it a key connection for the media to make. Extreme weather has always affected people’s lives but depending on how climate change and/or extreme weather is framed by the media, these experiences can be linked to human activity.

My research contributes to the existing literature by looking at Lane County specifically, which has experienced low air quality from forest fire smoke as well as extreme heat and dry weather during the past two summers. This data tells us whether or not Lane County media is linking wildfires and smoke to climate change in its

coverage. Existing literature shows how not making this connection could be problematic to the public's understanding of climate change and urgency to act.

Although this research has limitations regarding what media I'm able to access and its small scale, it will act as a starting point for the conversation around forest fires, climate change, and the media.



## Methods

The primary research method was a content analysis. I used a variety of databases and websites to search for and collect all articles from the past two fire seasons (May 2017 - November 2018) about wildfires from the following publications: The Cottage Grove Sentinel, the Register-Guard, Siuslaw News, Eugene Weekly, the Oregonian, and Oregon Public Broadcasting. I will not be able to include the Creswell Chronicle, KEZI, KVAL, or KMTR NBC Springfield due to limited accessibility. This is because the Creswell Chronicle is an extremely small publication with limited online access to archived material. As for KEZI (owned by Heartland Media) and KVAL and KMTR NBC (owned by Roberts Media), these publications are owned by large media corporations and don't offer public access to their archives beyond the past 25 articles related to your search, which typically only goes back a couple of weeks. Each publication I searched required a different method of searching and had its own limitations.

The Cottage Grove Sentinel and Siuslaw News both required me to purchase subscriptions to the online publications. I then was able to search each publication individually on their websites (<https://www.thesiuslawnews.com/> and <https://www.cgsentinel.com/>) by going to 'menu', 'site search', and typing in 'wildfire'. These publications only allowed me to search for one keyword. I then sifted through the articles that this search resulted in that were between the dates 05/01/2017 and 11/20/2018 and collected all the articles that were in fact about wildfires in separate new tabs on my laptop. Then I did a command-f search for each article using the word 'climate' and searching for 'climate change' or 'changing climate' in the results, and

'global warming'. I then recorded the results both in a notebook and in a google spreadsheet by year and in total.

For the Oregonian and the Register Guard, I was able to use a database through the University of Oregon library called 'Access World News'. For each publication I used the search: "wildfire" or "forest fire" and selected the relevant dates (05/01/2017 - 11/30/2018) and recorded the search results by year as well as total. Then I used the search "wildfire" or "forest fire" and "climate change" and selected the relevant dates (05/01/2017 - 11/30/2018) and recorded the results in both a notebook and a google spreadsheet.

For Eugene Weekly and Oregon Public Broadcasting, I used their websites (<https://www.eugeneweekly.com/> and <https://www.opb.org/>) which I searched for the term "wildfire" because the search was limited to one term. I sorted the articles by date and skimmed all the articles within 05/01/2017 and 11/30/2018, opening the articles that were actually about wildfires in new tabs. I then command-f searched each relevant article for 'climate' searching for 'climate change' or 'changing climate' in the results as well as 'global warming'. I then recorded the results both by year and in total in a notebook and on a google spreadsheet.

After completing all of these searches, I compiled my data on the google spreadsheet document and calculated the percentages of articles about wildfires that included climate change keywords by publication, year, and in total.

## Results

Table 1

*Lane County Media Coverage of Wildfires by Percent Including Climate Change*

Publication name	Year	# of 'forest fire' or 'wildfire' stories	# including 'climate change' or 'global warming'	Percent of wildfire stories that include climate change
The Cottage Grove Sentinel	2017	18	0	0%
The Cottage Grove Sentinel	2018	5	0	0%
The Cottage Grove Sentinel	Combined	23	0	0%
Register-Guard	2017	120	32	26.67%
Register-Guard	2018	111	42	37.84%
Register-Guard	Combined	231	74	32%
Siuslaw News	2017	9	0	0%
Siuslaw News	2018	6	0	0%
Siuslaw News	Combined	15	0	0%
Eugene Weekly	2017	3	1	33.34%
Eugene Weekly	2018	11	9	81.82%
Eugene Weekly	Combined	14	10	71.43%
Oregonian	2017	380	71	18.68%
Oregonian	2018	435	82	18.85%
Oregonian	Combined	815	153	18.77%
Oregon Public Broadcasting	2017	23	1	4.35%
Oregon Public Broadcasting	2018	6	2	33.34%
Oregon Public Broadcasting	Combined	29	3	10.35%
<b>Totals</b>	2017	553	105	<b>19%</b>
	2018	574	135	<b>23.50%</b>
	Combined	1127	240	<b>21.30%</b>

The results show that among total coverage of wildfires over the 2017 and 2018 fire seasons, only 21.3% of stories mentioned climate change in their coverage (see Table 1). Between 2017 and 2018 the percent of wildfire stories that mentioned climate change increased from 19% to 23.5%. Eugene Weekly had the highest percentage of stories including climate change at 71.43%, although the number of total wildfire stories published by Eugene Weekly was rather low compared to other publications. The Register Guard had the second highest percentage of wildfire stories that included climate change, at 32% (and 37.84% for 2018). The Oregonian had the third largest percentage at 18.77% and little change between 2017 and 2018. Smaller publications such as the Cottage Grove Sentinel and Siuslaw News didn't mention climate change at all in any of their wildfire coverage over the years. Other than these two publications and the little change in the Oregonian, every publication saw a major increase the percentage of articles that included climate change between 2017 and 2018, matching the overall increase between the years.

## Discussion

Based on the above results, it is clear that a majority of media consumed by the general public of Lane County is not connecting wildfires and smoke to climate change. This may cause the public to disassociate the two issues and not see the effect climate change has on them personally for what it is.

To illuminate these findings, I interviewed Lane County Extension Agent Lauren Grand. Grand highlighted the lack of education that she believes the general public has regarding forest fire ecology. One of the main gaps in public understanding of forest fires, in her opinion, is the confusion around our relationship with fire as humans. “I think one of the big issues is that fire is aligned heavily with a state of fear. Fire is very much a natural part of our ecosystem and is always going to be. I think that we have to figure out a way to understand our relationship with fire better as a human race and understand that we’ve evolved with it,” said Grand. “There’s some good information out there but I wish it was less related to fear and that everything is hopeless and getting worse and that sort of thing.” Grand is commenting on the despair/alarmism framing of the issue, as discussed earlier in relation to climate change. This framing tends to make the public feel disempowered and uncompelled to take any action (Futerra, 2006). Grand feels that journalists need to move away from this framing and stick to informing the public on the current state of fire in terms of where they are, how large they are, and safety elements such as how firefighters need people to respond. She would also like to see the media direct the public to resources such as the Department of Forestry to get good factual information to help them understand fire better.

When asked about whether or not climate change should be included in media coverage of wildfires and smoke, Grand stated that she thinks, “climate change should be included in the conversation of wildfires, it’s a piece in the puzzle, but it’s not the only reason.” Including climate change when covering forest fires is controversial because climate change is only one factor among many others for why we have been experiencing such large and destructive wildfires in the Pacific Northwest. It is important that climate change is included along with an explanation of fire exclusion and our state’s fire history (or resources that further explain these concepts), that way the public receives a full picture of what is going on. “Fire was a lot more present on the landscape historically than it is now and that’s changed the way fires currently behave, in addition to the exacerbation of things like climate change,” said Grand.

The media making the connection between forest fires in Oregon and climate change is key to the public’s understanding of climate change and how it impacts them as individuals because wildfires and smoke are some of the main ways we experience the effects of climate change in Oregon (Mote et al., 2019). This connection is also important because people make decisions based on their personal values. Although values vary greatly among audiences and cultures, there are plenty of values that many Americans share. Framing forest fires as a human rights, public health, and/or economic issue taps into the values of many Americans. It also resonates with the public on a personal level due to the large scale of personal experiences many of us have had with forest fires in recent years. The media has a responsibility to inform the public on how they are affected by climate change, that way the public has the information necessary to make decisions about contemporary environmental issues.

## **Conclusions and Future Study**

This research illuminates the current practices of local media regarding coverage of wildfires and smoke, showing that the media is not mentioning climate change in the majority of this coverage over the past two years. Future studies might analyze Oregon media coverage of these issues on a larger, state-wide or region-wide scale. Future studies could conduct a large sample of interviews with leaders who interface with the public on wildfire issues, like Grand, in order to continue a conversation about the media's role in covering wildfires, smoke, and climate change.

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