

**Representation of the Environment on Social Media Through Australian and Amazon  
Forest Fires**

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## **Abstract**

Due to the relatively recent surge in media usage, social media as an educational tool for a variety of fields is an exciting and developing area of study. Additionally, determining whether or not a topic is addressed accurately on social media, and the representation to the public that follows, is an increasingly relevant issue. In this study, the Instagram profiles of three different environmental organizations and three different popular culture figures were compared using a post qualitative analysis. In order to use Instagram posts that gained a significant amount of attention and were in recent memory, the study used the forest fires of Australia and the Amazon in 2019-2020. Included in this paper is a synopsis of the information available on both cases of the fires, the connections to climate change, the background of social media and the environment, and further possible explorations of how the environment can be more aptly represented on social media. From the analysis of eight different Instagram posts on their caption content as well as imagery, environmental organizations typically had less engagement than popular culture figures. This thesis provides a unique perspective of environment and social media as it directly compares Instagram posts based on their content.

## **Representation of the Environment in Social Media Through Australian and Amazon Forest Fires**

Social media may now be considered one of the most popular ways to spread mass information, independent of accuracy. The expansion of social media has allowed for rapid popularization of certain topics, allowing for new research to emerge of how information is communicated. Accessible to most age groups but most popular with young adults and teens, social media in modern, industrialized countries is now an everyday occurrence for scores of populations worldwide. Various fields of study are influenced by this new wave of communicating, as trends and popular topics change from day to day on a plethora of platforms at a speed unprecedented in previous forms of interaction. Environmental topics may be one of the most sensationalized, as climate change and global warming have taken a front stage position in recent years and the spread of often horrific images explode on people's timelines. In the realm of forest fires, two recent cases caused a frenzy of social media activity and awareness into global environmental problems. The Amazon forest fires in the late 2019-2020 season, primarily focused in Brazil, raged through social media feeds as drastic pictures of acres in the millions burned for weeks, which turned into months. Similarly, the Australian bush fires that catapulted into international attention in the summer of 2019 and lasted on the news cycle into the beginning of 2020 wreaked havoc on Australian wildlife and surrounding ecosystems.

In order to analyze the sometimes inflated importance of environmental events, this thesis will consider both environmental organizations and popular culture figures as presented on social media. The focus for this research will be on the 2019-2020 forest fires that occurred in Australia and the Amazon rainforest. Specifically, this research will include a qualitative description of social media posts on Instagram, comparing possible effectiveness and content. In comparing the

impact and information provided by these two topics, a new expansion on how environmental issues are presented to the masses can be provided. Education on environmental matters as presented on social media is a relatively new way for the general population to learn about their surroundings locally and globally, and awareness of current issues is essential. The lack of connection between traditional media and the new wave of social media reporting has led to a generational gap; younger generations are exposed to highly polarized, rapid, and often misleading media that is fed onto timelines every second. Contrastingly, older generations comfortably rely on more traditional media methods, such as newspapers and television broadcasts, which can again present biased information at a slower pace. This generational and informational gap leads to breaks in understanding of any issue, including the precarious situation of the environment.

Prospectively, this information can be a part of future research into how the scientific community interacts with the general population. As the presence of social media and the prevalence of popular culture figures have grown exponentially, the impact on environmental issues has become sensationalized and radicalized. Environmental education and awareness have been drastically impacted by the influence of natural imagery and social media posts. In hypothesizing what may be found by comparing Instagram accounts of both popular culture figures and environmental organizations, there may be a more traditional, educational value to the information put forth by environmental organizations. This difference is expected to be seen in the difference of environmental organization's roots that are grounded in traditional media, compared to popular culture figures who may rise to fame completely from social media. Through analyzing the presence of environmental organizations online and comparing them to

that of popular culture figures, this research will glean what the presentation of environmental issues looks like today, realistically.

## **Literature Review**

### **Background on Forest Fires**

The Amazon rainforest fires beginning in early 2019 and ending in early 2020 are the focus of this investigation. For background, forest fires in the world's largest rainforest are not a new phenomenon, and at normal rates are a healthy and regular part of the rainforest ecosystem (Nobre, 2014). Additionally, fires each year can be incredibly different, according to NASA (2019), "Fire activity in the Amazon varies considerably from year-to-year and month-to-month, driven by changes in economic conditions and climate," all of which impact whether or not the fires continue on or extinguish. Several factors can impact whether or not forest fires start and continue, including drought, land clearance, temperature, humidity, and others (Zaitchik, 2019).

One clear reason for the variability in forest fires is the rate of deforestation. In the last 50 years, deforestation for human consumption in the Amazon destroyed 300,000 square miles of forest, apart from what might be 'natural' losses (Zaitchik, 2019). For comparison, the Amazon is slightly over 2 million square miles in size (Nobre, 2014). On the note of what might occur 'naturally,' which is a term here that would imply fires that began from natural processes not started by humans, there is evidence that fires are not natural to the Amazon, as a rain forest ecosystem. According to Mark Cochrane at the University of Maryland, "Fires are not a natural phenomenon in these forests, all of the fires in this region are caused by people," the statement leaves little room for any leeway on blaming the current destruction on natural processes (Lai et al., 2019). Similarly, Ruth DeFries at Columbia University states, "Humans are driving these fires, either in a very direct sense or a global sense by changing the ecosystem so much,"

aligning the point of view of humans being the driver for such devastation in the forest (Gregory, 2019).

Deforestation was in the decline in the early 2000s, but has soared under recent president Jair Bolsonaro's economic-focused policies (Irfan, 2019). An agreement in 2009, signed by three large meatpacking companies, was meant to drastically reduce deforestation in the Amazon, but this deal has proven ineffective (Krauss, 2019). As newer trends of veganism and vegetarian lifestyles have become more popular, the media has begun to place more blame on deforestation for cattle ranching as a primary reason for the fall of essential ecosystems like the Amazon (Krauss, 2019). The Amazon forest fires of 2019 into part of 2020 were exceptional in several factors, and burned through the most land area in a single year since 2010 (NASA, 2019). Thus, the Amazon's history of forest fires has worsened in recent years due to new policies combined with the changing global climate.

However, the destruction in 2019 was not the worst the Amazon has ever experienced (Lai et al., 2019). From a study based on satellite imagery of the gigantic rainforest, 2019 represented the biggest loss in forest in the past 8 years, 35 percent more fires occurred in 2019 than averages from 2011 to 2018 (Lai et al., 2019). As previously stated, deforestation was on a decline in the early 2010's due to policies that reduced the occurrence of the harmful practice but has seen a resurgence under Bolsonaro's leadership (Irfan, 2019). Deforestation in the Amazon was at its highest in 1995 and 2004, both at over 10,000 square miles (Lai et al., 2019). In line with this, the average number of fires were higher throughout the early 2010s (from 2003 to 2010) than they were in 2019 (Lai et al., 2019). Thus, the destruction 2019 is not entirely unprecedented in the region, but the mass deforestation and resultant effects of such large fires are cause for concern and a considerable jump from recent years.

Similar to the occurrence of fires in the Amazon, Australian bushfires, or wildfires, are not uncommon, and are even an essential part of the ecosystems in various regions of the continent (Cary et al., 2003). Lohm and Davis (2015) articulate the term 'bushfire' as "...a particularly intense risk even with dramatic - at times life-threatening - implications for those who experience them," and often lead to a horrific aftermath of destruction and death. A number of the flora in Australia utilizes the dry season in order to stimulate reproductive cycles and create new growth (Cary et al., 2003). Also similar to the Amazon, Australia contains a massive amount of unique flora and fauna that are capable of withstanding the fire season, in some cases using it to their advantage, through adaptations that have compiled for thousands of years (Cary et al., 2003). Additionally affecting Australian wildfires is the level of humidity and precipitation prior to the season and during, delineating a reason for the drastic spike in the 2019-2020 fires (Burgess et al., 2020). From years of research on the bush fires, Cary et al. comment that, "...inter-annual fluctuations in weather and climate influence fuel loads and condition; and micro to meso-scale atmospheric processes and weather conditions establish the potential for severe wildfires," thus a combination of key climate factors determine the severity and frequency of wildfires (2003).

Wildfires have been essential since Aboriginal utilization, "...as a tool to hunt game, including the extinct megafauna," and is still used today for management (Cary et al., 2003, pp. 10). Similar to how experienced firefighters in California use controlled burns to prevent massive spread of wildfires (Miller, 2020), Australians are well accustomed to acclimating to the bush fire season (Burgess et al., 2020). However, as previously stated, the bushfire season can dramatically worsen when certain conditions are altered and spiral out of human control (Crowther, 2020). While the present circumstances of the ecosystems and sizes of the Australian

bush and the Amazon rainforests are considerably different, their histories of fire as a tool and current mismanagement are slightly similar.

### ***Impact on Environment***

#### **Amazon**

Worth noting is the extreme complexity of rainforests that have developed and adapted for millions of years, and the fragility to degradation this easily creates as a result (Lutgens & Tarbuck, 2017). Specifically, the flora presently adapted in the rainforest, including the Amazon, have grown specifically to the soil type and have flourished (Lutgens & Tarbuck, 2017). According to Nobre (2014, 4), "Life processes that operate in rainforests have developed an almost incomprehensible complexity, with an astronomical number of organisms working together like gears linked into a phenomenal environmental regulation machine." The millions of years of adaptation cannot grow back quickly enough to deal with increased rates of forest degradation (Lutgens & Tarbuck, 2017). Therefore, threats to the ecosystem that have the capability to destroy the rainforest's plant life can permanently damage the globe's biodiversity as new plants may not be able to grow as easily in the highly specific conditions generated by the soil preferences (Lutgens & Tarbuck, 2017).

The Amazon holds crucial value in air quality and prevention of certain greenhouse gas emissions. Consequently, the Amazon is responsible for a portion of the world's carbon uptake, as well as filtering through a fifth of the world's oxygen (Zaitchik, 2019). Due to the size of the Amazon (roughly that of the whole continent of Australia) the ecosystem services it provides are almost unimaginable in consequence and effect (Zaitchik, 2019). For carbon emissions alone, the tree loss in tropical forests accounts for approximately 10%, additionally worsened by the fact that the rainforests store incredible amounts of carbon, reducing the total carbon in the



atmosphere (Khadka, 2019). Sometimes referred to as a global "carbon sink" (NASA, 2019) the Amazon's role in the global air cycle is key to understanding why forest fires can and often do become major news. The Amazon's classification as a 'carbon sink' has been debated (Brienen et al., 2015). In a study using plots of the Amazon's evolution of carbon dioxide levels, Brienen et al. (2015) found that the Amazon has in fact acted as a significant carbon sink over the past few decades, however this status may decline and is expected to as the atmospheric and climate conditions continue to change due to anthropogenic influences. Essentially, the Amazon's capability for accumulating carbon has decreased in the past 10 years due to trees' decreased lifespan and climate variability (Brienen et al., 2015).

Whether or not climate change and global warming are a part of the conversation on conserving rainforests, the Amazon's massive impact on global air and water systems cannot be ignored. When considering climate change and global warming in tandem with the plight of the Amazon, each feeds into another and the problems combine. The effect of forest fires on the earth's climate patterns is complex and often not answered simply. Huge amounts of smoke that can be generated from a number of natural phenomenon (volcanic eruptions, fires in various ecosystems) can have a brief cooling effect by blocking sun rays (Lutgens & Tarbuck, 2017). Generally, fires produce carbon dioxide, soot, and other aerosols all of which can have varying effects on climate (Berwyn, 2018). Carbon dioxide, as many are familiar with, has a long term warming effect as a greenhouse gas (Berwyn, 2018). Thus, global greenhouse gas amounts are worsened in general by the deforestation necessary for human consumption and the resultant fires that play into a feedback loop. As noted by several researchers (Nobre, 2019; Zaitchik, 2019; Cary et al., 2003) forest fires can amplify the problem of greenhouse gases by eliminating a major source of pollution clearance; the forests themselves.

The flora and fauna of the Amazon rainforest is imperative to maintaining biodiversity internationally, as the biome hosts thousands of animals and plants in specifically unique habitats (Gibbens, 2019). The reasoning behind the vast diversity of the Amazon, and rainforests in general, is not exactly known. However, Rodrigues-Alcântara (2013) argues that one of the reasons is due to the long-term stability of the ecosystem; consistent precipitation and temperature patterns, reliable humidity, stable habitats with plenty of nutrient-rich diet options, and any other factor that implies survival in the wild. With this long-term stability in mind, the argument for the often severe effects of forest fires and deforestation become more visible, and in some senses more newsworthy. In one example, a population of birds in the Amazon is currently threatened by deforestation and hunting, and while the Amazon hosts more than 1,000 bird species each one plays essential roles in the web (Rodrigues-Alcântara, 2013).

Another one of the major problems that the degradation of the Amazon, sometimes through forest fires caused by deforestation and sometimes through other methods, is the speed at which it currently occurs. According to NASA (2019), the fire season in 2019 was more active in intensity and frequency than usual, and more extreme than any year since 2010. As previously identified, one the major reasons for this "uptick" is land clearing, as the deforestation highly exacerbates the capability of a fire to start and spread (NASA, 2019). The Amazon is now burned and cleared at a rate that it cannot physically recover from in time; animals are unable to acclimate to new habitats, plants cannot regrow in time, and the entire ecosystem suffers as a result (Zaitchik, 2019). Thus, the speed that human consumption demands of essential ecosystems like the Amazon destroy much of the potential for survival.

## **Australia**

The bushfires in 2019 are not the only example of dramatic impact on the environment in Australia, but it provides context for the deadly potential that they can have. According to Lee (2019), the bushfires from 2019 alone "...pumped out more than half of the country's annual carbon dioxide emissions," Lee went to further describe this issue as "another setback to the fight against climate change," which leaves no leniency to communicating the environmental impact of fire. This mass export of a greenhouse gas into the air has short and long-term effects on the battle against climate change, as the carbon dioxide will only worsen the goals towards decreasing emissions of these type of gases (Lee, 2019). Air cycles and quality goes beyond climate change concerns, as the smoke from the massive fires can travel incredible distances to then bring the problem to other countries' attention (NASA, 2020). According to NASA (2020), "As smoke from the massive fires has interacted with global weather, the transport of smoke plumes around the globe...leading to long-range transport," which highlights wildfires as an international concern and the environmental impact as incredibly widespread.

Apart from the natural wildlife concerns highlighted by the Amazon fires, human health can become a major concern in a bushfire crisis. In an article from Pickrell (2020), the pollution from the smoke of the 2019-2020 fire crisis has been linked to approximately 400 deaths. Furthermore, these can be either directly from the flames' path, or indirectly from pollution that worsens asthma and other health conditions (Pickrell, 2020). The smoke pollution can reach extremes, as an example from the 2019 fires caused both Canberra and Sydney to have designations of hazardous air quality with serious implications for vulnerable populations as well as the general public with average health (Burgess et al., 2020). Understandably, the concerns for human health from wildfires garners attention internationally.

Australia houses some of the most unique and highly endemic wildlife populations in the world, with a wide range of specifically adapted species that are not seen elsewhere (Cary et al., 2003). The 2019 fires in Australia saw catastrophic endings for an approximate 3 billion animals, including mammals, reptiles, and birds (Vernick, 2020). Animals may be displaced from their habitats, weakened and sick from the pollution and heat exposure, unable to access their typical nutrient uptake, or face death (Vernick, 2020). While this extreme frequency of deaths is not typical, the harmful effects of wildfires are felt every occurrence, in every season (Cary et al., 2003). Thus, while wildfires may be a natural event that are gradually becoming worse from human impact, there are still serious consequences for life at every level.

### **Climate Change and Fires**

As previously alluded to, climate change, or global warming, can exacerbate the conditions that determine wildfires. In the Australian case a long lasting drought occurred prior to the 2019-2020 fires (Burgess et al., 2020). 2019 was the driest year since 1900 in Australia, this dryness occurred previous to the start of the fires and affected the intensity and amount of land the fires were able to reach in such short time frames, causing problems for fighting against the spread (Burgess et al., 2020). While droughts are not directly linked to climate change, the change in precipitation patterns have been cited by the IPCC (2014) as a "major contribution of climate change." Specifically for Australia, the IPCC (2014) identified rivers, lakes, floods, and/or drought with a "very high" confidence in attribution to climate change. Thus, the connection to droughts that can intensify forest fires has been reported with confidence with a connection to climate change (IPCC, 2014). Similarly in the Amazon, the same droughts and changing precipitation patterns attributable to climate change affect the capacity of fires to start

and spread (IPCC, 2014). Thus, climate change can have a more indirect position in affecting the strength and capability of a fire's spread through temperature and precipitation fires.

Another relationship exists between climate change and forest fires. Climate change worsens forest fires, but vice versa can be argued that forest fires worsen climate change (Khadka, 2019). As previously discussed, the mass amount of carbon dioxide that is emitted into the atmosphere from forest fires releases more greenhouse gases than would be typically introduced (Zaitchik, 2019; NASA, 2019). Greenhouse gases are one of the most clear indicators of climate change; these gases are responsible for trapping heat in the earth's atmosphere which significantly warm the planet (IPCC, 2014). The main goal of the Paris Climate Accords is to reduce the impact of climate change by reducing the total warming of the planet to a certain degree, and the main method proposed to accomplish this task is by reducing greenhouse gas emissions (Khadka, 2019). Forest fires, true for both the Australian and Amazon cases, worsen the probability of this happening by introducing immense amounts of greenhouse gases that may not be calculated into a country's goals towards mitigating climate change. For instance, the Australian case saw a massive 306 million tons of carbon dioxide emitted from the fires in an approximate 5-month span, previously discussed above (Lee, 2019). As aforementioned, this amount of carbon dioxide is troubling for a country that has goals to reduce carbon dioxide and does not usually face these enormous quantities (Lee, 2019). Thusly, the importance of forest fires/bushfires as the selected environmental topic is discussed above. By highlighting the reasoning behind recent media focus on fires and their environmental consequence, the importance of studying how social media represents the issue is shown.

## **Background on Social Media**

### ***History***

Social media has become a buzz term in almost every field of study and has rapidly crept its way into the everyday lives of scores of people globally. The impact of social media on today's generation of youth cannot be understated. The term 'social media,' originating in the early 2000s, has come to encompass a number of platforms and communicative websites that can either focus on the common individual or whole corporations to even major celebrities (Lomborg, 2017). For instance, platforms like Twitter, Instagram, and Facebook allow for private individuals to hold accounts for social reasons, small businesses to promote their products, or giant corporations as a new marketing tactic. Defining social media is an increasingly difficult task that has questionable value (Lomborg, 2017). On one hand, social media can be defined as "...digital platforms for the creation and sharing of user-generated content," which focuses on its technological aspects (Lomborg, 2017). This definition of social media hinges on the user, a focus that is crucial for understanding social media, its use can vary greatly from the basic individual to an entire corporation. In fact, social media has taken a turn in its definitions as researchers reflect on the intense influence of social media, and its ability to embed itself within everyday lives (Couldry, 2015). In general, social media can be defined as "...the means of interactions among people in which they create, share, and/or exchange information and ideas in virtual communities and networks," (Tufts, 2018). Thus, defining social media presents a problem in differentiating an existence that is subject to frequent change globally.

The actual usage of social media has increased dramatically, but the platforms that are popular or the methods of communication that are used can vary greatly (van Dijck, 2013).

Platforms can determine the focus of conversation and information provided (Lomborg, 2017). For instance, the website Myspace was popular in 2007 as a site to add friends, have a homepage, and interact with recently emerging pop culture trends (Lomborg, 2017). Then, Myspace's popularity sharply declined with the introduction of Facebook, which became a new powerhouse in social media, dominating users' online time with status updates, liking pages, game content, and other immensely profitable aspects (Lomborg, 2017). Since then, Instagram has popularized photo-based updates with filters, likes, and highlights of the visual world (Bruner, 2016). In fact, a change from text-based to image-based content in social media has in part led to the popularity of platforms that capitalize on aesthetics and viral viewing content (Li & Xie, 2020). Social media has diverged from traditional print media or other forms of communication as it has managed to integrate in the lives of multiple generations and ages, with a surge of popularity and connectivity that is entirely novel (van Dijck, 2013). While defining social media is tricky and defining its success even trickier, focus of the perspective from the user is imperative to the utilization of social media.

### *Accuracy*

Social media as a news source is questionable and controversial, and yet younger generations may be more inclined to glean their current news events from their recently refreshed feeds. The accuracy found on social media platforms such as Facebook or Instagram is of doubtful accuracy, as the importance of citations, sources, and fact-checking can be completely neglected (Safarnejad et al., 2020; Kim & Dennis, 2019; Fitzpatrick, 2019). Social media presents the kind of mass information spread that is enviable of previous generations; billions can know about a worldwide crisis within seconds through viral videos, reports, or any other kind of outlet (Safarnejad et al., 2020). However, frequent occurrences of edited videos,

manipulated photos, misinformation, and other inaccuracies based on the media form presented has marred this communication cycle (Fitzpatrick, 2018). As in the 2016 United States presidential election, social media can be vilified for providing misinformation on incredibly important topics, creating further polarization (Kim & Dennis, 2019).

Traditional media, here referencing newspapers, other print media, and television broadcasts, can also very easily be inaccurate and biased. These inaccuracies are an issue that populations have battled with for some time (Kim & Dennis, 2019). However, the aspect of social media that can be most troubling is the focus on the individual; any one person can create a story or post, TikTok or Tweet, and gain mass attention for its content, without any references whatsoever (Kim, Dennis, 2019). Previously, there would be at least some attempts for information gathering by a news program or vetting through multiple channels of information gathering for a story to be put forth on to a broadcast or publication (Safarnejad et al., 2020). Additionally, social media platforms are not necessarily presenting the information that the user has chosen; posts that appear on feeds can be based on past search history and advertising interests, which adds an additional layer of information reception that is not properly vetted for accuracy (Kim & Dennis, 2019). In fact, the level of misinformation that social media is capable of providing, sometimes referred to as "media manipulation," has the ability to "cultivate" views within a user, developing opinions without much conscience thought (Fitzpatrick, 2018). According to van Dijck (2013), "...social media are inevitably automated systems that engineer and manipulate connections," a point that underlines how distorted opinions and perspectives can become based on consumption of social media. Thus, social media presents a troubling problem for the spread of information, based on questionable accuracy.



### ***Environment and Social Media***

Environmental news as seen on social media presents a number of unique and often troubling concerns. Inaccuracies in environmental reporting has been a problem historically, with a general consensus that environmental issues are often focused on just major emergency and crisis events and not preventative reporting (Archibald, 1999). Misleading titles, absence of relevant information, and general errors have plagued environmental reporting longer than social media has been present (Archibald, 1999), thus the problem of inaccuracies is not endemic to social media. Rather, media in general is often capable of misconstruing what may be considered as the 'truth,' in whatever sense this can be determined.

For another consideration, social media posts with images consistently lead to higher engagement than do ones without (Li & Xie, 2020). Environmental issues are highly applicable to this; pictures and images of environmental problems can be extremely evocative. Using this logic, an image of a burned and near-death koala clinging to the last branch left in a decimated landscape will garner an intense reaction, versus a traditional print media source shared from an online publication about the endangered species of Australia (Li & Xie, 2020). In this sense, environmental problems have the ability to be shared inaccurately, an image of a koala from 10 years ago can be shared and connected with a hashtag about the ongoing fire crisis in 2020, without any need for fact-checking or accuracy, while also creating viral attention and mass engagement (Li & Xie, 2020; Fitzpatrick, 2018). Thus, the easy ability for the environment to lend itself to images and the popularity of visual content creates a space for environmental news reporting that can be problematic when viewed in terms of accuracy.

### ***Popular Culture Figures***

Defining the idea of 'popular culture' presents much of the same problems as defining social media, it is a concept that has vastly changed recently and research has struggled to keep up with the explosion in popularity of celebrities that are famous for their lifestyle and influencer online status. Popular culture figures/influencers/celebrities can be identified as those individuals with mass followings, usually online, either for their participation in acting, singing, or sports careers that have become ingrained within society's trends (Harrigan et al., 2020; Sanders et al., 2019). Worth noting is the fact that popular culture is often rooted in the same issues that are found in general society, problematized concepts like gender, class, and race can be amplified or minimized in popular culture (Fiske, 2010). The concept of celebrity culture is not new, as early America favored the news of politicians and military heroes, which shifted to movie stars and athletes in the mid 1900s, which eventually gave way to the boom of popular culture figures seen today (Henderson, 1992). Thus, as society evolves and focuses on different topics, from environmental issues to beauty tips to racial inequality, popular culture follows and has even risen in importance (Fiske, 2010). Henderson (1992) argued that the immense change in American focus was founded on, "The rise of a celebrity-based culture in this century can in part be attributed to America's change-over from a producing to a consuming society," which highlights the ongoing rise in celebrity (popular) culture.

Thus, popular culture figures are those celebrities and influencers and online personalities who perpetuate the trends and social focus of popular culture. In general, people's perceptions of influencers can be quite negative, mostly for the lack of positive role modeling and instilling of negative values the influencers often perpetuate (Valsesia et al., 2020; Harrigan et al., 2020). Additionally, influencers have become a major part of marketing strategies for businesses and

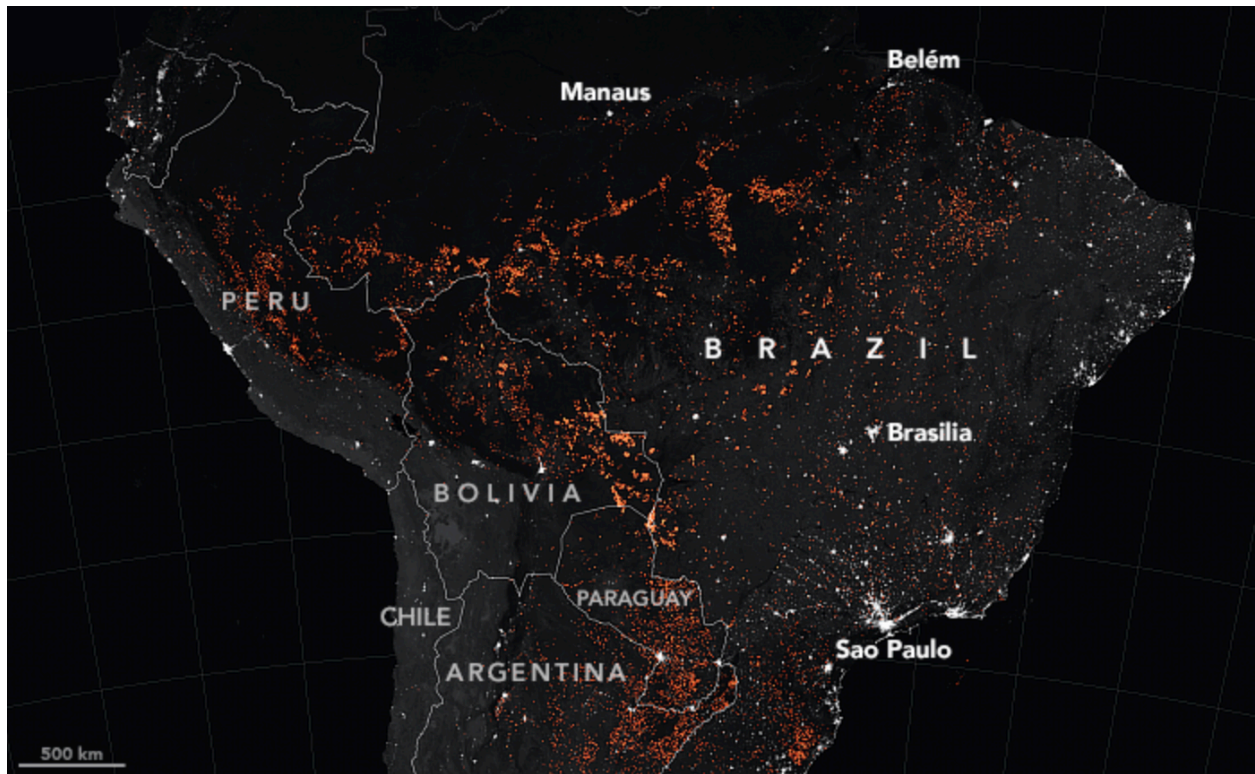
corporations as they can promote and advertise products directly to their audiences (Sanders et al., 2019). For that reason, today's popular culture figures can present a duality in branding, themselves as the brand and/or another business as a promoted brand that can be connected to their own online identity (Sanders et al., 2019). Popular culture figures present a curious case in the possibilities of social media for environmental education.

### ***Environmental Organizations on Social Media***

As environmental organizations present a more 'traditional' version of receiving news and education on environmental issues, their usage of social media is incredibly important to communicating with younger generations. In fact, researchers have already identified younger generations as paramount to mitigating climate change, possibly the biggest environmental issue, and social media as the forefront of this communication (Bandura, 2020). Studies on the efforts of environmental organizations to adapt to the new waves of information reporting have produced mixed results. Environmental organizations have been successful on social media particularly when using "interpersonal communication strategies," such as "...selfies, non-scientific content, first person pronoun-rich captions, and responding to comments," all of which foster a two-way conversation that is the goal for scientific reporting online, as this type typically fosters more successful engagement (Martin & MacDonald, 2020). However, environmental organizations have faced difficulties in gaining popularity across different mediums, such as podcasts (Waters et al., 2012). There exists the need and ability for the more traditional information gathering methods of environmental organizations to increase popularity in social media news reporting.

### Amazon Case

The forest fire season starting in 2019 and ending at the beginning of 2020 was exceptional, compared to the past few years, due to the rates of burning and land area covered, which were the highest since 2010 (NASA, 2019). As shown in Figure 1, NASA tracked the fires detected in August of 2019, directly representing the devastation and high rates of the peak of the season. The destruction amounts to approximately 7,000 square miles that caught flame, from nearly 100,000 fires (Borunda, 2019; Amigo, 2020). Compared to the Amazon's total of over 2 million square miles (Nobre, 2014) the number seems small, however 7,000 square miles is "...an area just smaller than the size of New Jersey," (Borunda, 2019). As previously discussed, forest fires have far-reaching effects on human and environmental health. The 2019 Amazon forest fires are highlighted to have effects on biodiversity through habitat loss, human and animal health, as well as climate (Webb, 2019). For instance, one fire "...that broke out in the state of Rondônia on 19 August produced a huge plume of smoke that spread over thousands of kilometers to São Paulo, Brazil's most populous city, by mid-afternoon," which highlights the fires' ability to have rapidly travelling effects (de Oliveira Andrade, 2019). The fires of 2019 definitively saw mass destruction that is difficult to reconcile with the ongoing climate and environmental crisis.



**Figure 1:** Fire Detections in Brazil, August 15-22, 2019, sourced from

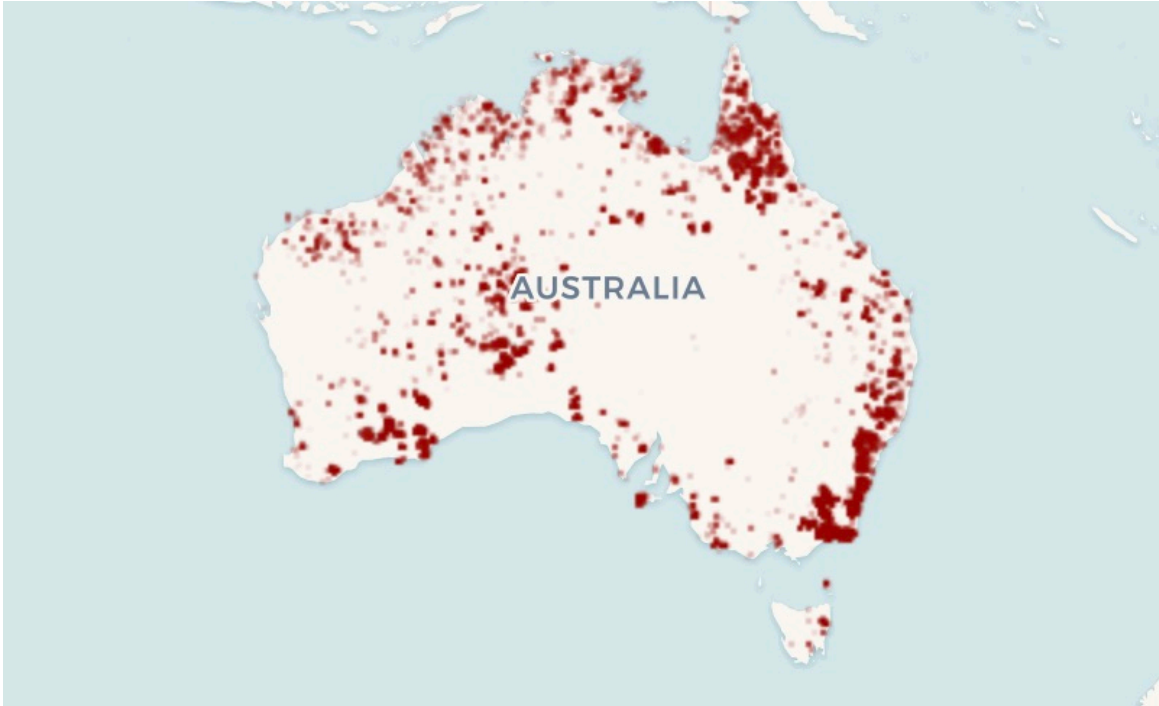
<https://earthobservatory.nasa.gov/images/145498/uptick-in-amazon-fire-activity-in-2019>

Although the fires from the 2019 season may not be one-of-a-kind in and of themselves, the press coverage was. The blazes received mass international attention by late summer, with most sources identifying the fire season as a disaster and global emergency situation for their broadcasts (Amigo, 2020). Headlines containing phrases such as "fires keep raging," "alarming surge," and "fires ravage Brazilian Amazon," creating the worldwide sense of dread is capable of sparking panic in millions of avid watchers (Krauss, 2019; de Oliveira Andrade, 2019; & Dwyer, 2019). How and why the news cycle picks up some environmental disasters and not others is difficult to exactly determine, however the 2019 Amazon forest fires presented a media frenzy that encompassed both traditional and social platforms.

### **Australia Case**

In contrast to the Amazon case, Australia's fire season was reported as largely unprecedented (Berwyn, 2020). From the beginning of the season in 2019 to January of 2020, just under 30,000 square miles of land were burned (Evershed et al., 2020). This amounts to an approximate 3 billion animals that were harmed, either through displacement, health hazards, or death (Vernick, 2020). On the human spectrum, science has begun to link deaths from the bushfire smoke to more than 400 people, with 33 people directly killed from the flames (Pickrell, 2020). The fires also ravaged 2,000 homes, presenting a crisis and displacing people across the country (Evershed et al., 2020). Additionally, the fires in this season released more than half of Australia's total carbon emissions, amounting to 270 million tons, which undoubtedly leaves the environment in a questionable position (Lee, 2019). As seen in Figure 2, the fires concentrated mostly on the coasts of the country, with the variability driving them further inward as the dry season progressed (BBC, 2020). Additionally, the Australian fires saw the similar damages to the habitats and landscape of the coasts, with damage to human structures as well as natural habitats evident (Burgess et al., 2020). These fires caused significant damage to the functioning of an ecosystem that is both unique and essential.

The Australia fires saw a similar media frenzy overtake the news cycle as reports of the endangered species that were threatened and the loss of human life resulted in shock waves globally. News headlines termed the fires as "the bushfire crisis," "catastrophic fires," and the "black summer," all of which incite the same kind of fear that the Amazon fires were capable of (BBC, 2020; Crowther, 2020; & Burgess et al., 2020). Thus, the Australian fires present a similar case as to the regularity of outbursts of flame occurring in a country familiar with fires, but with extreme rates of land coverage and destruction that presented a global media interest.



**Figure 2:** Fire Detections in Australia, Week of December 27th, 2019, sourced from <https://www.bbc.com/news/world-australia-50951043>

Thus, information on the cases that were the subject of the Instagram posts has been detailed above. The purpose of the Instagram post comparison method is to discuss how environment is portrayed on social media in today's world, including what is discussed in posts, what images are used, attention gained from the posts, and other relevant information. I expect to find a large amount of variation, as each account can portray an event from an individual lens or perspective, and even environmental organizations, less focused on individual views, have a unique point of view to provide. This qualitative case study comparison involves a very detailed view of how the Australian and Amazon cases were discussed on Instagram and a particular spotlight on how environment is viewed through social media.

## Methods

For the investigation of this thesis, three different popular culture figures and three environmental organizations were chosen to compare. Due to the fact that there is such a high quantity of social media platforms that could be studied to compare the impact of these two entities on environmental awareness and education, Instagram will be solely used here. The app is based in photo sharing, an aspect previously discussed as lending itself ideally in environmental issues (Li & Xie, 2020), and is immensely popular today (Bruner, 2016).

Instagram launched in 2010, and by 2019 1 billion people used Instagram every month, with 500 million people using the Instagram stories option everyday (Blystone, 2020). This followed a Facebook acquisition in 2012 for \$1 billion (Blystone, 2020). The app features a main home page with a feed based on who the user follows (which can include a mix of personal pages, organizations, businesses, etc.) and advertisements, with the Instagram stories featured at the top (Bruner, 2016; Blystone, 2020; & Instagram, 2020). Instagram stories are a 24-hour time limited feature in which the post does not remain on a person's page after the time slot has passed (Instagram, 2020). Instagram also has the explore page, which is a mix of curated content based on previous searches and activity and the newly introduced shopping page, where users can buy directly from businesses through the app (Instagram, 2020).

### Popular Culture Figures

In this investigation, the Instagram profiles of Leonardo DiCaprio, Greta Thunberg, and Jane Goodall will be included. These three were chosen based on their environmental activist associations (DiCaprio, n.d.; Thunberg, n.d.; & Goodall, n.d.) The first, Leonardo DiCaprio is an American actor and producer who has been active in the film industry since 1989, and has starred in blockbuster films such as *The Wolf of Wall Street*, *The Great Gatsby*, and *The*



*Revenant* (Leonardo DiCaprio Foundation, 2015). Since rising to fame, DiCaprio has also become an environmental activist, starting his own environmental organization, Earth Alliance (Leonardo DiCaprio Foundation, 2015). DiCaprio provides a popular culture image point of view, starting from a well-liked career in entertainment, who now utilizes social media to frequently discuss environmental issues (Leonardo DiCaprio Foundation, 2015).

Second in the investigation is Greta Thunberg, a 17-year-old Swedish environmental activist who rose to fame in 2018-2019 for her remarks on the impending future of society in the face of climate change (Alter et al., 2019). Thunberg has appeared at a number of environmental conferences and meetings, including at the United Nations in Madrid, meeting with the Pope, engaging in a Twitter battle with President Donald Trump, and actively participating and championing the global climate strike in September of 2019 (Alter et al., 2019). Thunberg, who is diagnosed with Asperger's, has used her rapid fame to become a voice of the youth and the environment (Alter et al., 2019). Her viral presence differs greatly from the longstanding entertainment career of DiCaprio, as well as the vastly different career of Dr. Jane Goodall. Thunberg provides an interesting perspective from a younger audience that has grown up with social media and may be capable of using her platform differently from older generations.

Lastly, Dr. Jane Goodall is an English primatologist and anthropologist with over 60 years of research work and experience in the environmental realm, mostly focused on chimpanzee culture (Jane Goodall Institute, n.d.). Dr. Goodall is most famous for her work in Tanzania studying wild chimpanzees since the 1960s, where she analyzed social and family interactions in the highly intelligent animals' behavior (Jane Goodall Institute, n.d.). Dr. Goodall is world renowned for her expertise in primatology and has since become one of the most well known scientists of the modern age (Jane Goodall Institute n.d.). Dr. Jane Goodall again presents

a different perspective, and possibly different following than DiCaprio and Thunberg, as her scientific background and long withstanding career vary greatly from entertainment and newly found activism.

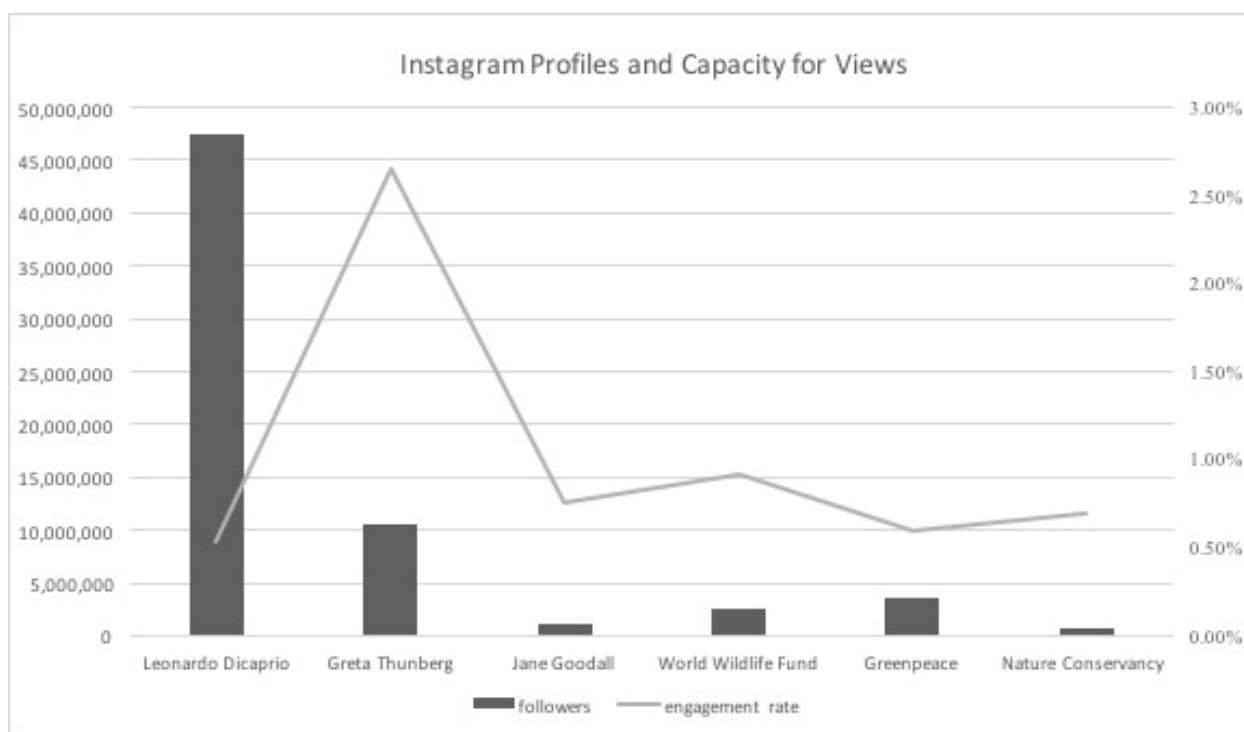
### **Environmental Organizations**

For this research, the Instagram profiles of the Nature Conservancy, World Wildlife Fund International, and GreenPeace will be included. First, the Nature Conservancy is a "...global environmental nonprofit working to create a world where people and nature can thrive," starting in 1951 in the United States and since then branching out globally (Nature Conservancy, n.d.). Second, the World Wildlife Fund, started in 1961 in the United States, and is now a non-governmental environmental organization that aims to "...collaborate with people around the world to develop and deliver innovative solutions that protect communities, wildlife, and the places in which they live," (WWF, n.d.). Lastly, GreenPeace is an international non-governmental environmental organization that began in 1971 in Canada (GreenPeace, n.d.). With a strong focus on providing a healthy planet for all, Greenpeace "...uses non-violent creative action to pave the way towards a greener, more peaceful world, and to confront the systems that threaten our environment" (GreenPeace, n.d.).

### **Comparison**

Whether or not an Instagram profile is successful in communicating its message is dependent on a few factors. Here, Figure 3 shows data from the Instagram analytics website Social Stats on followers and engagement rate for each Instagram profile. Engagement rate is a term often used in conjunction with analyzing social media (CFI, n.d.). Mostly looking at the engagement a profile garners on a post or other part of a profile, it is usually found using some combination of likes, followers, reach, shares/reposts, views, and comments (CFI, n.d.). This

information is provided for the comparison research in order to function as background on the accounts used. The data provided in Figure 3 is extremely limited due to the small number of accounts and should not be considered a method of quantitative research that can be extrapolated to represent environment on social media as a whole or as a way to compare all social media accounts of popular culture figures and environmental organizations. Figure 1 is useful in that it shows the massive difference that can occur in social media profiles' reach, from the nearly 50 million followers of Leonardo DiCaprio's profile, to almost 800,000 of the Nature Conservancy's profile. It also represents the difference in engagement rates, as Greta Thunberg has a very high engagement rate compared to her followers, and reasonings for this difference could be considered in further research on why some profiles reach more people but attract less 'loyal' followings or subscribers to content.



**Figure 3:** Follower count and engagement rate for the six Instagram profiles, data sourced from Social Stats, (<https://socialstats.info>)

From this data, Leonardo DiCaprio and Greta Thunberg have the highest follower count amongst the popular culture figures and environmental organizations, and Greta Thunberg has the highest engagement rate. All three environmental organizations have much lower engagement rates than Greta Thunberg, but their rates are comparable to Leonardo DiCaprio and Jane Goodall. In this comparison from Figure 3, the popular culture figures are more successful in gaining followers and in one case in maintaining a higher engagement rate. However, this data is limited and is only meant as a precursor to the post comparison and description provided below, as a means for who could be seeing these posts.

### **Post Focus**

In order to better understand what exactly is posted by environmental organizations versus popular culture figures, several posts from the 2019-2020 Amazon and Australian forest fires have been selected from some of the six different Instagram pages. These posts were chosen at random from the accounts in the timeline specified by the fires, that is, they had to have been posted within the time the fires were occurring or were in the general news cycle. Posts from more recently looking back at the events were not included. Each account is considered for both cases, but not every account had a post dedicated to these events on their feeds at the time of this research. This post comparison is imperative to gain a detailed look at what post engagement is like, what the content of the images are, the captions accompanying them, and other small details that can help determine how environment is represented in social media.

### ***Amazon***

From Leonardo DiCaprio's Instagram, Figure 4 is a post on the Amazon forest fires, at the beginning of the media attention in August 2019. The picture, a firefighter decked out in fire

protective gear with a concerned face, standing in the foreground of flames just a few feet away, is powerful. The post is a "regram," in which DiCaprio has reposted the original work of another page, photographer Charlie Hamilton James. The human-centric positioned photo certainly evokes emotion from the viewer, and DiCaprio has included in his caption praise towards the firefighters in the Amazon, as well as a personal story from James on working in Brazil. Here, DiCaprio utilizes the technique of making the Amazon fires very personal and direct to the viewer, a strategy that is effective in boosting engagement (Martin & MacDonald, 2020). The post has 981,045 likes and 6,917 comments. Using this post, DiCaprio has engaged with his over 40 million followers, communicated the issue, connected with another page, and provided inspiration for further posts.



**Figure 4:** Post from Leonardo DiCaprio's Instagram. Sourced from

<https://www.instagram.com/p/B1mgF0YFrvq/>

One day earlier, Greta Thunberg posted about the same event on her Instagram page, seen in Figure 5. The image Thunberg included is from a high vantage point, depicting the massive

smoke plumes that dominate the landscape and the flames below. Her caption is shorter than the one that DiCaprio shared, and she remarks on the way in which she heard about the fires even from a remote location, and ends the sentiment with a statement that the "...war against nature must end," (Thunberg, 2020). The photo with the caption combined send a very direct message on the environmental issue Thunberg portrayed, with the large vantage given from the photo clearly demonstrating the depth and size of the problem. The post garnered 586,082 likes and 6,417 comments. She received far fewer likes than DiCaprio's post, but her comments show high engagement with the message she sent.

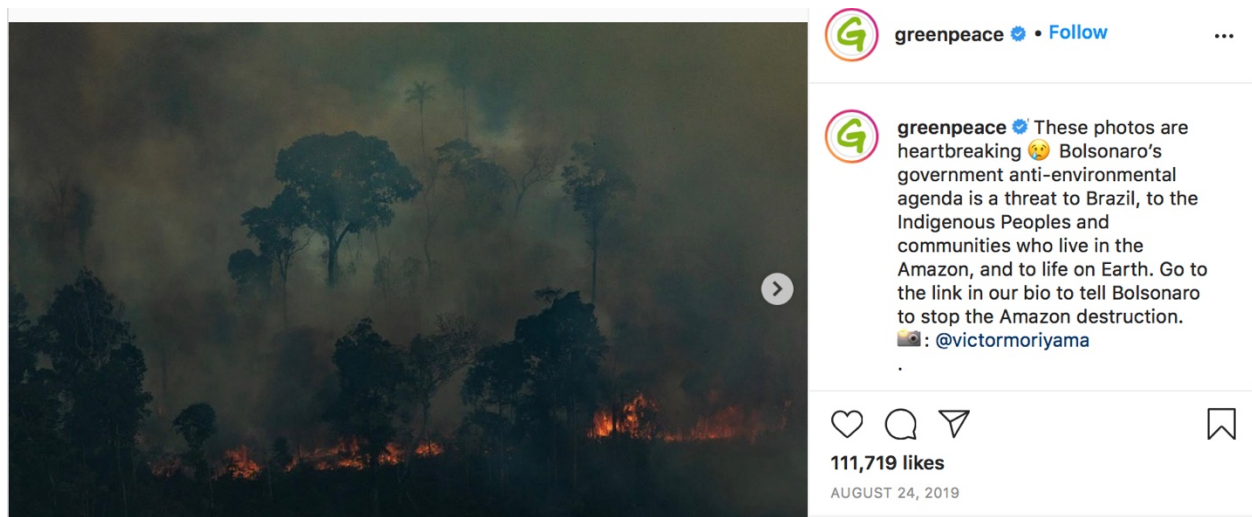


**Figure 5:** Post from Greta Thunberg's Instagram. Sourced from

<https://www.instagram.com/p/B1hKYGECYZP/>

From the environmental organization side of posting, GreenPeace shared the image in Figure 6 on the same day as DiCaprio's post. The post contains multiple images in a slide format, and the headlining picture is a dark scene with the trees barely visible as they are consumed by smoke, with flames seen at the bottom edge. The picture is both dark and foreboding, and

GreenPeace provided a caption that uses a sad-faced emoji, as well as the direct inclusion of a sentiment opposing Brazil's president, Bolsonaro, and his policies on deforestation. The post is more based in the education of why the fires may be happening or worsening, compared to the two popular culture figures where the posts were focused on sharing and raising awareness. GreenPeace's post received 111,719 likes and 1,561 comments, less than both Thunberg's and DiCaprio's posts. This may represent how environmental organizations are less capable of reaching a large audience, but have the ability to connect the viral event to the background issue.

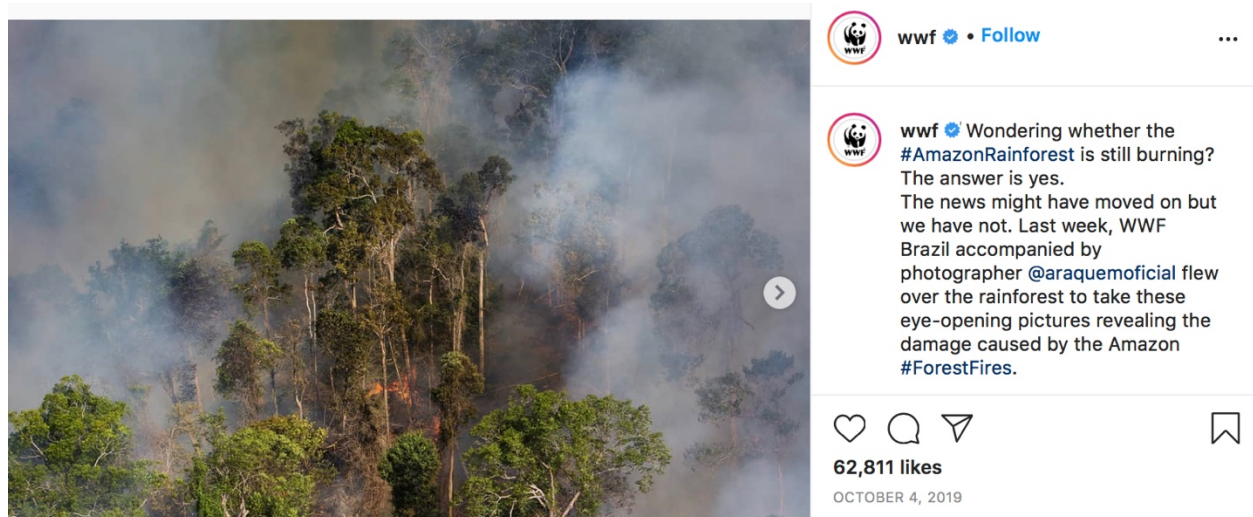


**Figure 6:** Post from GreenPeace International's Instagram. Sourced from

[https://www.instagram.com/p/B1j7Z1\\_IPq7/](https://www.instagram.com/p/B1j7Z1_IPq7/)

In the last post from the Amazon case, the World Wildlife Fund posted several images in October, two months after the previous posts discussed, as seen in Figure 7. The primary image is similar to GreenPeace's; it pictures the forest covered mostly in smoke with flames still visible in the haze. WWF provided a caption that reminded viewers that the Amazon was still burning, and lamented the fact that the "news cycle might have moved on but we have not," they also included several hashtag's, a way for viewers to find posts all under the same topic, which stands

out from the other posts included. WWF received 62,811 likes and 570 comments, the least of the four posts shared. Again, this adds to the trend that environmental organizations have been less successful than popular culture figures in reaching large audiences and promoting high engagement. Additionally, the Instagram's of Jane Goodall and the Nature Conservancy did not feature posts during the 2019 Amazon forest fires. For Jane Goodall, her page focuses more on her work with chimpanzees and other charismatic species. The Nature Conservancy's page is dedicated to mostly pictures of animals and beautiful landscapes, with very few on environmental disaster reporting. The comparison from these six pages in the case of the Amazon fires reveals a tendency for popular culture figures to receive more attention for their posts, while environmental organizations tend to provide a broad perspective that is effecting the topic at hand.



**Figure 7:** Post from World Wildlife Fund International's Instagram. Sourced from

<https://www.instagram.com/p/B3M5VUBFppL/>



## *Australia*

In the first post on the Australian case, DiCaprio has provided a post similar to his post from the Amazon example. In a repost shown in Figure 8 from the account @aussieark, DiCaprio provides a multitude of images with the foremost picture a giant column of fire that dominates the frame, as flames are captured spread across the rest of the landscape as well. Trees are seen in silhouette, with some bush pictured below. The caption focuses on the novel reporting from the Australian account, with a focus on the harm to human and wildlife health. The post has 599,542 likes and 6,684 comments, much less than his post on the Amazon with human-centric theme.



**Figure 8:** Post from Leonardo DiCaprio's Instagram. Sourced from

<https://www.instagram.com/p/B40DN5UFIZ4/>

Several months after DiCaprio's post on the Australian wildfires, Thunberg provided a post of her own, pictured in Figure 9. The image is both very similar and incredibly different from DiCaprio's in that it mainly shows giant flames dominating the frame, but this time a kangaroo desperately hopping to safety is in the foreground and the background is a house

completely engulfed in fire. The caption is straightforward and similar to Thunberg's previous post as well as GreenPeace's initiative to provide background; Thunberg states that the fires are due to "record heat and record drought," and warns of a worse future as summer in the country has just started (Thunberg, 2020). The post has an astonishing 2,048,340 likes and 39,514, far more than any post discussed this far. Considering the inclusion of both a charismatic species and the human focus, Thunberg successfully combined environmental education as well as high engagement with the post.

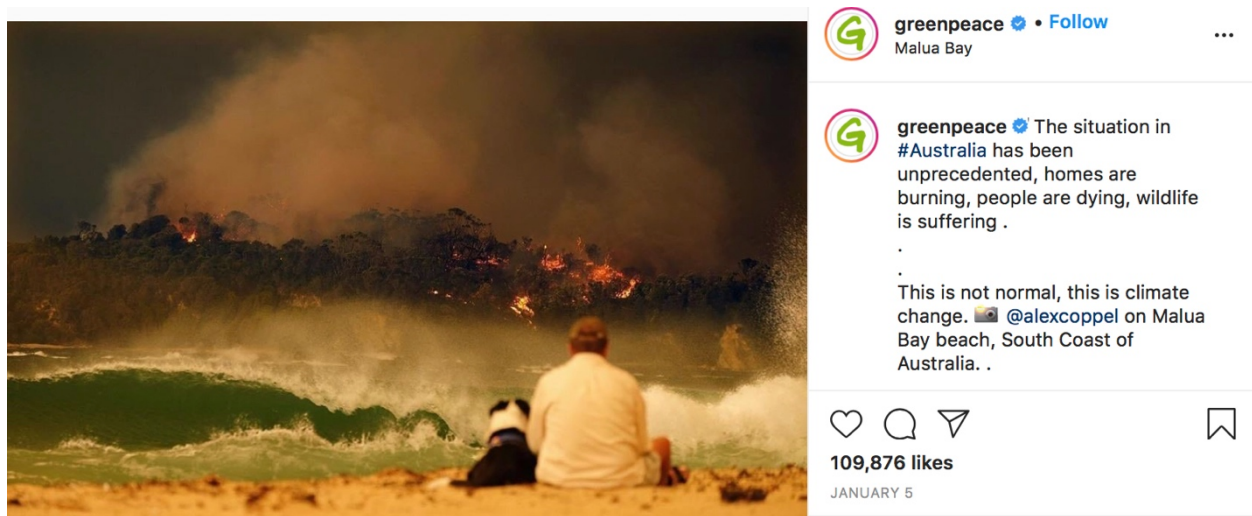


**Figure 9:** Post from Greta Thunberg's Instagram. Sourced from

<https://www.instagram.com/p/B66EdfBJDfp/>

For the first post from an environmental organization on the Australian case, GreenPeace provides a chilling view of the wildfire crisis, shown in Figure 10. The image shows a man and his dog sitting side by side on the beach, with the fires consuming the forest in the background with plenty of smoke rising into the dark skyline. GreenPeace provided a caption that identified that flames as "unprecedented," with both humans and wildlife at great risk. While the image

combines the same elements that Thunberg's presents, GreenPeace saw much less engagement with 109,876 likes and 1,033 comments. The difference between the relative success of Figure 9 versus Figure 10 again highlights the audiences that are reached by popular culture figures versus environmental organizations.



**Figure 10:** Post from GreenPeace International's Instagram. Sourced from

<https://www.instagram.com/p/B69xbrXgOPz/>

In the last posts of the Australian case, the World Wildlife Fund provides a heart wrenching post, as seen in Figure 11. The photo is of a firefighter clinging onto a frightened and burned koala, with the background covered in soot and hosting dozens of charred trees. WWF captioned the photo with plenty of hashtags as well as a heartfelt message on the importance of human selflessness and firefighters' efforts in the difficult times of wildfires. The post gained 353,371 likes, more than double what GreenPeace was able to achieve and far more than the previous WWF post seen in Figure 6. Here, WWF was more capable of engaging more users with the human-centric perspective that is similar to Thunberg's approach, but still with less

numbers than the popular culture figure was able to involve. Similar to the case of the Amazon posts, Goodall and the Nature Conservancy did not feature any posts dedicated to the Australian wildfire crisis.



**Figure 11:** Post from World Wildlife International's Instagram. Sourced from

<https://www.instagram.com/p/B7ENNQZCJcO/>

### Discussion & Conclusion

From the comparison of the small sample size above, there are some major differences between how popular culture figures and environmental organizations construct posts and gain attention on environmental topics. Particularly here, DiCaprio and Thunberg extracted the most engagement per post, and their content did not differ extremely from those of WWF or GreenPeace, but the comparison provided the smaller details that can be important in discussing environmental topics. While social media is used by millions in today's world, and there are

thousands of posts that can be studied on just these two cases, this research has provided more detailed look into how environment is portrayed specifically. The major conclusion of this research is the use of imagery which could be a driving factor between both the commentary of the post from the account, as well as the engagement. The images all included some aspect of landscapes and scenes that are jarring and shocking, and trigger emotional responses of varying degrees. This emotional response and the inclusion of images is not exclusive to Instagram, but it is highlighted by the platform's position as a picture-driven application. Future research may look into whether or not images are as prevalent as other platforms such as Twitter or Facebook, and how this may change engagement and reception as well as the content.

Social media as an intensely popular network of communication across several platforms presents several challenges in research. The popularity of communicating news through unverified sources requires further understanding of the 21st century news cycle, and how this style of information gathering may change the understanding of several fields, including environmental issues. The format of social media lends itself to popularity and increased engagement in visual content, specifically with the photo-sharing app Instagram. This has led to an increased virality of environmental topics and a focus on the radically visual that may be able to generate more clicks or likes, thus creating a need for engagement rather than accuracy or understanding. The cases of the 2019-2020 Amazon and Australian forest fires are prime examples of the impact by social media and the change in global communication can render simultaneously negative and positive attributes to environmental reporting. On one hand, the introduction to environmental issues to younger audiences that may not have been familiar with the problem recently can foster more interest. However, the frequent lack of accuracy and the

quick turnover in the social media news cycle may create more confusion and the rapid consumption can create a certain weariness towards any news story.

This research has provided a brief comparison of popular culture figures and environmental organization's ability to provide environmental education and awareness through the photo-sharing app Instagram. While this research is exploratory, the comparison showed a likelihood of popular culture figures possessing the capability to reach larger audiences and engage at more successful rates than environmental organizations. The content of the posts in reference to the image quality and makeup as well as the text provided in the caption was compared. Further research may look at other social media platforms across different cases of environmental issues to gain a more detailed and complete picture of the way in which the environmental and its many issues are portrayed by social media.

Comparative to these findings, Gibbs et al. (2014) found in a study focused on Instagram posts with a specific hashtag, in their case "#funeral" that the posts with these images all contained a similar vernacular and informal position that Gibbs et al. found to be consistent on Instagram. While the particular wording of the posts from the likes of DiCaprio and WWF are similar, it would be worth researching further to explore if there is certain phrases or words that are used commonly on a larger basis. Additionally, Gibbs et al. (2014) sought to understand how social media represents death and commemoration practices such as funerals, similar to the aim of this research in looking at how social media portrays environment. Equally, the usage of searching by hashtag to analyze Instagram's posts provides a similar approach as used in the post comparison, as Gibbs et al. (2014) took the content of the images and the post text to determine the meaning and engagement behind the photo. The usage of the same social media platform, Instagram, is especially important in comparing the limitations and successes of these two

approaches to social media, as Instagram has a different identity in post content than other social networking sites (Lomborg, 2017). The findings of Gibbs et al. (2014) provides a similar background to the research conducted through post comparison based on accounts, although the method of gathering was different.

Similarly, a study conducted by Alper (2013) utilized Instagram through a moral lens of professionalism in journalism as it shifts to social media. The discussion of traditional media changing towards the communication platforms of social media certainly connects to the conclusions found through the study of the post comparison of whether or not 'traditional' environmental voices such as WWF or Greenpeace are successful in their transition (Alper, 2013). However, the research from the Australia and Amazon cases did not highlight any moral issues, such as the shock and triggering nature of seeing animals and landscapes badly damaged, but Alper utilizes this perspective in order to engage in the discourse of the war photojournalism. Certainly this topic connects to the previous discussion in this paper on the accuracy of social media, whether or not the posts shared and the information given are accurate as there is no accountability or sources required to make a post (Safarnejad et al., 2020; Kim & Dennis, 2019; Fitzpatrick, 2019). This lack of accuracy can be incredibly concerning when discussing moral issues of sharing images; a post could mislead its audience if its sharing a picture from a fire 20 years ago versus what the actual event happening looks like (Alper, 2013).

Instagram as a platform that provides information on studying the importance of imagery on social media was also highlighted by Pittman and Reich (2016). They used Instagram's focus on picture-based post to study human loneliness, and whether or not young adults felt less lonely when an image-based social media was used. Pittman and Reich (2016) found that images contained in posts could be so impactful that loneliness may decrease with usage, especially

when compared to text-based social media. Additionally, Pittman and Reich (2016) used college-aged students as participants that completed questionnaires. This method differs greatly from the qualitative case study posts used in this research, and by isolating the age of social media viewers Pittman and Reich (2016) were able to ascertain how social media affects a particular age group. While this research differs from comparing post by post text to discuss how environment is portrayed, it significantly contributes to why Instagram is useful for study and how images can evoke an intense emotional response, even digitally (Pittman & Reich, 2016). This emotional response is certainly part of the reasoning for why posts with injured koalas and kangaroos are used so frequently when communicating environmental issues. Thusly, the angles through which social media, and what topic is the focus, are varied.

Future research should also examine the proposed lack of connection between traditional media and the new wave of social media. A generational gap is negative towards mitigating and adapting to environmental problems as well as identifying the truth in reporting. This generational and informational gap leads to breaks in understanding of any issue, including the precarious situation of the environment. Additionally, it would be worth analyzing who follows the accounts studied above, and whether or not the difference in why you follow a particular page changes the way a post is received. Prospectively, the information provided here on social media and the environment as viewed through two forest fire cases can be a part of future research into how the scientific community interacts with the general population. As the presence of social media and the prevalence of popular culture figures have grown exponentially, the impact on environmental issues has become sensationalized and radicalized. Environmental education and awareness have been drastically impacted by the influence of natural imagery and social media posts. Through analyzing the presence of environmental organizations online and



comparing them to that of popular culture figures, this research will demonstrate what the presentation of environmental issues looks like today.

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