



STORYING CLIMATE CHANGE

London, England

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Storying Climate Change

London, England

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Abstract

In studying climate change, the focus is often placed solely on scientific data, yet this is not necessarily correlated to how the public perceives the topic. People understand the world through the lens of their own experiences and, therefore, experiences provide a strong insight into the perceptions of an individual or community. This project details the perspective of London residents climate change related experiences through personal interviews. Storytelling has long been an effective method of communicating personal experiences and through combining this with real experiences, this project communicates London's climate change story to the world.



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Justin Bere

Colin Melton

Lester Pigott

Alan Holland

Rachel Patteson

Alex Jelly

Sebastian Sandys



Executive SUMMARY

STORIES?

In the world today, there are few issues that are as widely problematic as climate change. There are also few issues that are as misunderstood. To approach such a global issue, humanity needs to reach a common understanding. While climate science has provided a plethora of evidence to prove the threat that climate change poses, this has not necessarily translated into understanding or action. Climate scientists have identified an “action gap”, which refers to the disparity between recommendations climate scientists give to curb emissions, and the general public’s perception and desire for response (Bushell, 2017). The Global Projects Program (GPP) at WPI, and by extension this project, has sought to address this disparity. By collecting and presenting personal experiences of climate change we hope to create a more empathetic connection between people and the effect we all have on our planet. To do so, we travelled to London, England, the capital of the United Kingdom and a city with a high level of climate awareness (Cecil, 2019). We researched and represented the experiences of London residents and how they help to shape the climate change perception of the community by interviewing members of the public.

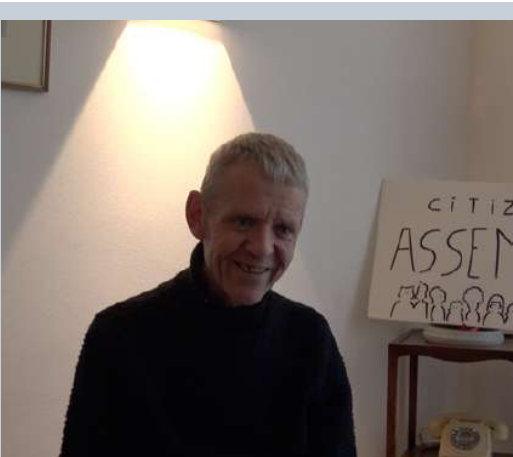


"Winter hasn't really started, it feel's like, I don't know, it's almost like it's on hiatus or something."

~ Colin Brightwell

BACKGROUND

Climate change is a global threat to humanity. As the planet grows increasingly hotter as a result of uncurbed human activity, the environment and mankind’s experiences with the natural world change. Although the Earth’s average temperature fluctuates naturally, the sudden increase in humanity’s industrial activity beginning in the 19th century has drastically increased the amount of heat-trapping gasses in the atmosphere (greenhouse gasses), leading to a variety of previously unseen and dangerous phenomena observed around the world (severe storms, shorter winters, hotter summers, forest fires, etc.).



"The environmental agenda is not separate to and competing with funds from the social agenda; it is the same thing."

~ Sebastian Sandys

In the U.K. particularly, these effects have manifested as record high temperatures, increased flooding, and growingly severe storms. London particularly has experienced high temperatures, highlighted by high average temperatures during the winter and a record heatwave in 2019. The citizens of London have a reputation of being politically minded and unafraid to participate in their parliamentary democracy both directly (voting) and indirectly (political activism). In 2019, 100,000 residents participated in the organized climate strike, raising alarm over the climate's vulnerability and future effects on humanity. Locally, the organized climate activist

group Extinction Rebellion (XR) has played a key part in both raising awareness in the public consciousness and pressuring local government to adopt environmentally sustainable legislation. By gathering the stories and opinions of members of the general public, activist groups, and climate experts, the clearer picture of climate change's societal impact can be discerned.

Storytelling is one of the oldest parts of human civilization. Sharing personal experiences with others serves several purposes from education to entertainment. Stories, and media conveying stories, is often categorized into different genres (adventure, non-fiction, etc.). For sharing the stories of climate change, the preferred format has often been informative documentaries which focus on the science behind climate change, and highlighting ways individuals, governments, and corporations must play their part to reduce carbon emissions to protect our environment. Not all documentaries, however, are purely scientific, as often times they can focus on societal events such as political movements. These documentaries can oftentimes focus on the narratives of individuals, which are intrinsically more relatable than scientific data. Documentaries are a powerful tool for both recording and presenting important events (such as climate change), making them relatable to the audience, and in some cases, inciting the audience to take action.

METHODOLOGY

The goal of this project is to develop a series of stories detailing the impact of climate change on residents of London that will assist the WPI Global Projects Program and address the disparity between scientific climate data and how the public perceives climate change through their own experiences. To do this, we followed three major objectives. First, we identified different individuals that would allow us to collect a wide range of data for potential interviews. Second, we conducted and recorded interviews with the selected individuals. Third, we edited and refined the footage to create a narrative that fit the goal. This process provided a path we could follow to ensure that this project succeeded. Targeting these groups allowed us to identify a wider variety of topics, stories, and viewpoints due to their differing backgrounds on climate change. After we identified the target demographics, we had to find individuals to interview. Our group relied heavily on snowball sampling and a list of contacts provided by the site director, Professor Golding, in order to find individuals. Once we found contacts we had to record their stories. We accomplished this by filming open-ended interviews. The open-ended interviews allowed the interviewee to tell their story without interruption. When possible we established multiple camera angles with tripods and used lapel microphones to keep the production quality high. After the interviews were recorded, they were edited down into two deliverables: short 'highlight reels' for each interview, and a short documentary synthesizing the interviews into a single narrative. The editing was done using Adobe Premiere Pro.



"When we had research for our first passive house buildings... the previous government seemed to start to make change, then [the Conservative government] came in and suddenly it was impossible to talk about climate change."
~ Justin Bere



I think that activism within urban spaces has increased and has created an alarm for the climate crisis, but politically speaking, I'm not sure if there has been an equal response to our cries of help.
~ Rachel Patteson



"We used to work to a gardener's calendar, but as climate change has progressed, there are just so many things that are out of whack."

~ Colin Melton

FINDINGS & DISCUSSION

Upon the end of our three objectives, we were able to analyze the data we had found to set the groundwork for the trends we would explore in our documentary. Some trends had become apparent to us during the recording phase and others became clear afterwards when we began editing and organizing the footage. To begin, we noticed early on that many people noticed that recent winters, particularly the winter of 2019 - 2020, had diverted from the norm. This included generally warmer temperatures, less frost, and more rain than years prior. These changes were observed by both the general population and the climate experts we

talked to, demonstrating the high level of awareness in London. Another trend we discovered among all three major groups was that many Londoners believed the government could be doing more to combat climate change. This idea was held not only by activists, but by others as well. We did not speak with or find a single person who did not believe climate change was having an effect on the environment. Lastly, throughout each and every conversation we had, the interviewees all referenced climate change being most dangerous to people in the future, especially if we don't act now. Though some were pessimistic about the climate's prospects, most people held a sincere hope that we, as humans, have time to fix our mistakes and keep the future from being so bleak.

CONCLUSION & RECOMMENDATIONS

The climate change stories initiative is much more than our single IQP experience in London. Past projects have acted as guide books, creating a standard of how to complete our very own project. We would like to leave recommendations that will both better the GPP and Professor Shockey as well as the students who will continue storying climate change. These recommendations are:

1. Future London teams should explore into the lesser known boroughs of London to find more diverse stories.
2. Utilize the weeks prior to the start of your time on site to reach out and schedule possible interviews (if possible).
3. Work with the Global Lab and ATC in ID 2050 to ensure you have the correct equipment.
4. Work with Professor Shockey in ID 2050 on the scheduling of your time on site in order to avoid wasted opportunities.

Climate change affects every person on the planet indiscriminately. Over the course of our time in London, we were able to connect with several residents and learn more about their experiences and perspectives. For our deliverable, we were able to compile a diverse, concise, and refined short film documenting the experiences of some of London's many residents. London is a melting pot of cultures, perspectives, and people. We set out to document and present the experiences of three distinct types of Londoners: the general population, climate change experts, and climate change activists. By gathering their stories, we were able to paint a picture of how climate change is impacting the day to day life of Londoners.

Climate change affects every facet of human civilization. While mountains of empirical data scientifically prove the existence and urgency of the climate crisis, the connection between this data and actual human people is severely lacking. This project, and others like it, are critical to exposing the human connection with climate change. We can all relate to each others' everyday experiences and through this, climate change stories increase our connection with effect we have had on our environment. Ultimately, this empathy will help to spur the necessary action to resolve this crisis and secure our future.

Authorship

Raul Arias Philippi: Contributed to all written sections of the report, the analysis of recorded footage, and the editing required for the final interview clips and documentary

Ryan Carnemolla: Contributed to all written sections of the report, the analysis of recorded footage, and the editing required for the final interview clips and documentary

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Team Photo: (Left to Right) Raul Arias Philippi, Aidan Mayer, Cameron Williams, Ryan Carnemolla

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INTRODUCTION



PURPOSE OF RESEARCH

As we progress further into the 21st century, climate change is becoming an increasingly important part of the lives of people worldwide. It has been predicted that there are only 11 years to act until we cause irreparable damage to our planet (UN, 2019). The effects of climate change have worsened conditions for millions of people, including 24 million climate migrants every year, displaced by rising sea levels or intensified severity of natural disasters (IDMC, 2016). Climate science has shown that the number of people affected by climate change related problems will only rise in the future. For instance, it is estimated that 300 million people globally are at risk of displacement due to rising sea levels (Watts, 2019). As these trends continue, it will become essential to learn from the experiences of the affected people, otherwise,. The broad topic of this report will be to collect the different stories that individuals can contribute about climate change. Through its nature as a global problem, climate change has affected people worldwide, regardless of their location or situation. This broad range of effect has created a large variation in the way different people experience climate change.

For the UK, climate change has been gradually affecting the lives of many. A recent UK study run by Ipsos MORI revealed that 85% of adults in Britain are now concerned about climate change, proving that the UK continues to be the home of a population that is very environmentally aware (Cecil, 2019). Climate change is a complicated, terrifying, and often overwhelming issue that will require a global cooperative effort to be overcome. To understand climate change as the threat it is, discovering how it has already affected people is an important first step. Personal stories are a powerful tool in communication, and issues can be characterized because real experiences are easiest to relate to. There are many factors that cause the UK's overwhelming majority of people to believe in climate change, but fully understanding them is a difficult task. The answer resides in the personal experiences and stories that have forced people to become concerned and even upset, like activist groups such as Extinction Rebellion. There are multiple avenues of study that can be used to help find a solution. However, first understanding how a problem affects us as a global community is essential.

Climate scientists have identified an “action gap”, which refers to the disparity between recommendations climate scientists give to curb emissions, and the general public’s perception and desire for response (Bushell, 2017). In order to bridge this gap, several different methods are being experimented with to tangibly convey the threat of climate change to the public. Some notable previous attempts include interactive art exhibits (Fearn, 2019) and comedy shows (Boykoff, 2019). While these approaches, as well as traditional documentary approaches, have shown positive reception in the past, there is still room for improvement. One approach that has great potential as a tool to bridge the action gap is storytelling. Simply put, storytelling is an approach in which stories are presented across a variety of platforms, utilizing different types of media, such as video, imagery, and text (Wilson, 2014). Personal stories can evoke an empathetic response that is crucial to our goal.

For this project, the collection of human experience “data” of Londoners served as the driving force of our project. People become persuaded just as much, if not more, by personal stories of climate change compared to clinical research because they can relate to others’ experiences (Linden, 2014). The impact and perception of climate change on individuals is a topic that has risen to some prominence recently. The Global Project Program’s (GPP’s) climate change stories IQPs are an example of this. Professor Shockey and the GPP have worked with international project sites to create a diverse collection of climate change stories from the perspective of individuals around the world. These stories come from places like Japan, India, Iceland, and New Zealand. The projects supplemented the stories with contextual information ranging from expert opinions to cultural changes. In viewing the results of these studies, it is clear that people often have a keen eye for changes in their lives caused by the climate. Our study will be conducted in London. As the Capital and cultural center of the UK, a country that is generally informed and concerned about climate change, the city can provide a plethora of opinions and stories (Clayton, 2018). This data will add to the worldwide collection being developed by the GPP to connect people’s experiences and portray climate change as the global issue that it is.

GOALS AND OBJECTIVES

The goal of this project is to develop a series of stories detailing the impact of climate change on residents of London that will assist the WPI Global Projects Program and address the disparity between scientific climate data and how the public perceives climate change through their own experiences. Simply, we sought to research and represent the experiences of London residents and how they help to shape the climate change perception of the community there by interviewing members of the public. Our approach pertained very specifically to individual people, making the scope of this project narrow, but nonetheless directly linked to real people. To do this, we followed three major objectives.

- 1. Identify Different Individuals for Interviews*
- 2. Conduct and Record Interviews*
- 3. Edit and Refine Footage*

First, we identified different individuals that would allow us to collect a wide range of data for potential interviews. Second, we conducted and recorded interviews with the selected individuals. Third, we edited and refined the footage to create a narrative that fit the goal. This process provided a path we could follow to ensure this project succeeded.



What's Your
STORY?

An aerial photograph of The Shard, a tall, glass-clad skyscraper in London, viewed from a low angle looking up. The building's sharp, tapering form is prominent against the sky. The surrounding cityscape, including other buildings and the River Thames, is visible in the background.

BACKGROUND

The background chapter establishes and analyzes data that provides necessary context for the task of collecting London individuals' climate change stories, as well as climate change as a broader issue. This chapter is broken down into the following 3 sections:

1. Climate Emergency

2. Climate Change

Perception

3. The Importance of

Storytelling

In presenting this context, the chapter asserts the importance of using personal narratives to portray climate change.



Climate

EMERGENCY

Climate Impact on the World

In order to understand people's stories and experiences regarding climate change, there must be an outline of the current major aspects of the topic at a global scale. The United Nations claims that, "Climate change is the defining issue of our time and we are at a defining moment." (UN, 2019) What this means is that we are running out of time to reverse Climate change's effects. On March 28th, 2019, the UN announced that as a global population we only have 11 years to stop the irreversible effects of Climate change (UN, 2019, March 28) Climate change isn't singular, specific, or particular to a defined area. It reaches all corners of the world, forming different effects and creating the events that threaten the existence of humanity.

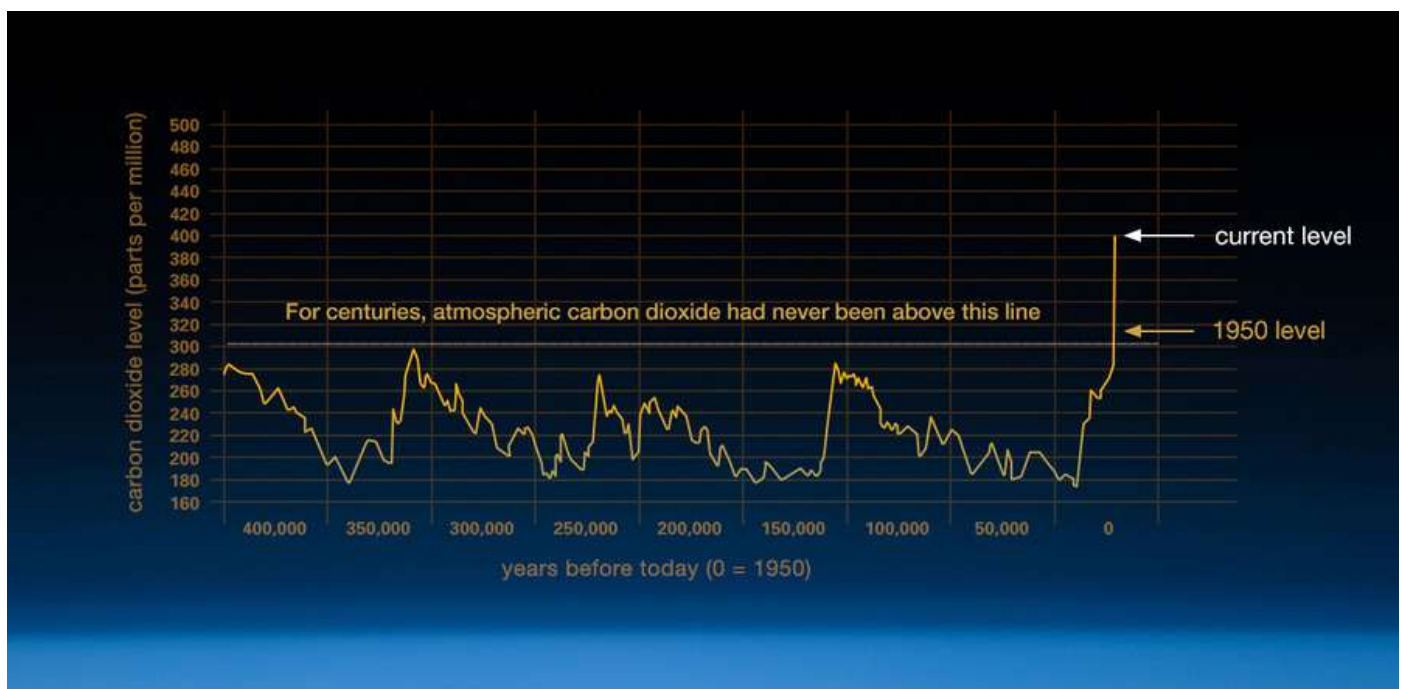


Figure 2.1: CO₂ Levels (Shaftel, 2019)

Climate
EMERGENCY

Humans have known that Earth has been “warming” since the greenhouse effect’s discovery in 1896 (Weart, 2012), with carbon dioxide levels being the notorious reason why global temperature increases. In Figure 2.1, the level of atmospheric CO₂ is seen to fluctuate steadily over the course of 800,000 years. However, after 1950, this level increases drastically, more than any fluctuation in the past. Scientists know that these levels are expected to fluctuate, but NASA states that, “The current warming trend is of particular significance because most of it is extremely likely (greater than 95% probability) to be the result of human activity since the mid-20th century and proceeding at a rate that is unprecedented over decades to millennia.” (Shaftel, 2019)

This sudden abundance of CO₂ is creating issues all around the world. The most prominent being global temperature rise, warming oceans, shrinking ice sheets, glacial retreat, decreased snow cover, sea level rise, declining arctic sea ice, extreme weather, and ocean acidification (Shaftel, 2019). As well, there is a 90-99% chance of more frequent heat waves and increased maximum temperatures, higher minimum temperatures and frost days, and precipitation-based natural disasters (Schneider, 2011). As can be seen in Table 2.1, the planet will see many other effects in the near future, like rising temperatures, cyclone strength, and more. These will harm the whole world, but will have perhaps the largest effect on communities in tropical asia.



Climate
EMERGENCY

Projected Effect	Probability estimate	Examples of Projected Impacts with high confidence of occurrence (67 – 95% probability) in at least some areas
Higher maximum temperatures, more hot days and heat waves over nearly all land areas	Very likely (90-99%)	Increased deaths and serious illness in older age groups and urban poor Increased heat stress in livestock and wildlife Shift in tourist destinations Increased risk of damage to a number of crops Increased electric cooling demand and reduced energy supply reliability
Higher minimum temperatures, fewer cold days, frost days and cold waves over nearly all land areas	Very likely (90-99%)	Decreased cold-related human morbidity and mortality Decreased risk of damage to a number of crops, and increased risk to others Extended range and activity of some pest and disease vectors Reduced heating energy demand
More intense precipitation events	Very likely (90-99%) over many areas	Increased flood, landslide, avalanche, and mudslide damage Increased soil erosion Increased flood runoff increasing recharge of some floodplain aquifers Increased pressure on government and private flood insurance systems and disaster relief
Increased summer drying over most mid-latitude continental interiors and associated risk of drought	Likely (67-90%)	Decreased crop yields Increased damage to building foundations caused by ground shrinkage Decreased water resource quantity and quality Increased risk of forest fire
Increase in tropical cyclone peak wind intensities, mean and peak precipitation intensities	Likely (67-90%) over some areas	Increased risks to human life, risk of infectious disease epidemics and many other risks Increased coastal erosion and damage to coastal buildings and infrastructure Increased damage to coastal ecosystems such as coral reefs and mangroves
Intensified droughts and floods associated with El Niño events in many different regions	Likely (67-90%)	Decreased agricultural and rangeland productivity in drought- and flood-prone regions Decreased hydropower potential in drought-prone regions
Increased Asian summer monsoon precipitation variability	Likely (67-90%)	Increase in flood and drought magnitude and damages in temperate and tropical Asia
Increased intensity of mid-latitude storms	Uncertain (current models disagree)	Increased risks to human life and health Increased property and infrastructure losses Increased damage to coastal ecosystems

Table 2.1: Projected Effects of Global Warming (Schneider, 2011)

Climate

EMERGENCY

Climate Impact on London

The United Kingdom isn't immune to the effects of Climate Change. In the 2018 UK Environment Agency Climate Report, the Head Chair of the committee states that, "Climate change is not a morality tale set in a dystopian future, it's already here." This tone regarding the climate stems from the UK facing major heat waves, flooding, and irregular rainfall (Environment Agency, 2018).

In 2003 an intense heat wave changed public opinion dramatically. It brought devastation all across Europe, killing more than 2,000 people in the UK alone (CRP, 2019). The maximum UK summer temperature broke a new record at 38.5 °C (101.3 °F) on August 10th. Many households in the UK lack air-conditioning systems to withstand these temperatures, and infrastructure lacks heat shield technology as well (CRP, 2019). However, extreme heat is just one of the factors that the UK is now facing.

As the global temperature continues to rise, the UK will begin to experience more substantial flooding and lengthy droughts (CRP, 2019). As contradictory as it seems, flooding and droughts correspond with each other. The water cycle is being pushed to both ends of the spectrum (CRP, 2019). Not being able to predict when rain will fall causes stress and uncertainty in the agriculture industry. The UK will begin to see either too much rainfall, washing out crops, or not enough, increasing irrigation demand (CRP, 2019). This is especially terrifying when considering that, "The population of the UK is projected to increase by 3.0 million (4.5%) in the first 10 years of the projections, from an estimated 66.4 million in mid 2018 to 69.4 million in mid 2028." (Nash, 2019)

As the capital of the UK, London must take into consideration how the UK's climate situation will specifically affect their city. A London news source "Express" released in a local paper an article showing the treasured Tower of London and London Eye underwater titling it "London underwater MAP: Chilling climate forecast shows UK capital submerged in 50 years". The report that included these graphics claims that nearly 40% of tourist sites in London will be underwater if action isn't taken (Kettley, 2020). However, flooding is far from the only challenge that London is facing. According to BBC, the largest climate related challenges that London faces are food, energy, waste, transportation, extreme weather, and large corporations (Edwards, 2020).



Climate
EMERGENCY

These areas of climate risk in London are obviously serious and concerning. They put pressure on the wellbeing of the city, the government, and the citizens themselves. However, while the realization of these effects is important to making a difference, the question we as a group need to ask next is, “How do Londoners feel about what has happened, and what the future holds?” This will be acknowledged with a study of the varying perceptions in London, with respect to Climate Change.

An aerial photograph of a city, likely London, showing the River Thames and the London Bridge. The image is heavily obscured by thick, white smoke or clouds that rise from the city, creating a hazy, apocalyptic atmosphere. The text 'Climate EMERGENCY' is overlaid on the left side of the image.

Climate
EMERGENCY



Climate Change PERCEPTION

Climate Change Perception

While there is an abundance of climate science, this project focuses on how individuals are affected. Individual perceptions of climate change can be very different and knowledge of climate change tends to vary with demographics. Generally, most populations are aware of the impacts of climate change. However, despite scientific evidence suggesting climate change is an urgent threat caused by humans, individual perceptions of the underlying causes and severity of climate change are inconsistent, and tend to vary based on factors like age, education, and geographical location (Clayton 2018). Someone can be presented with all of the research in the world, but they will still perceive climate change based on their own experiences. Understanding these experiences and the factors behind them is crucial to spreading climate change awareness (Lee, 2015).

Perceptions of the General Population

Europe, and the UK in particular, is one of the most aware areas of the planet. Even though many nations, like the UK, have a high degree of climate awareness, Figure 2.2 shows the results of a global survey that polled individuals on whether they knew about climate change and, among those that did, whether they believed it was a serious threat.

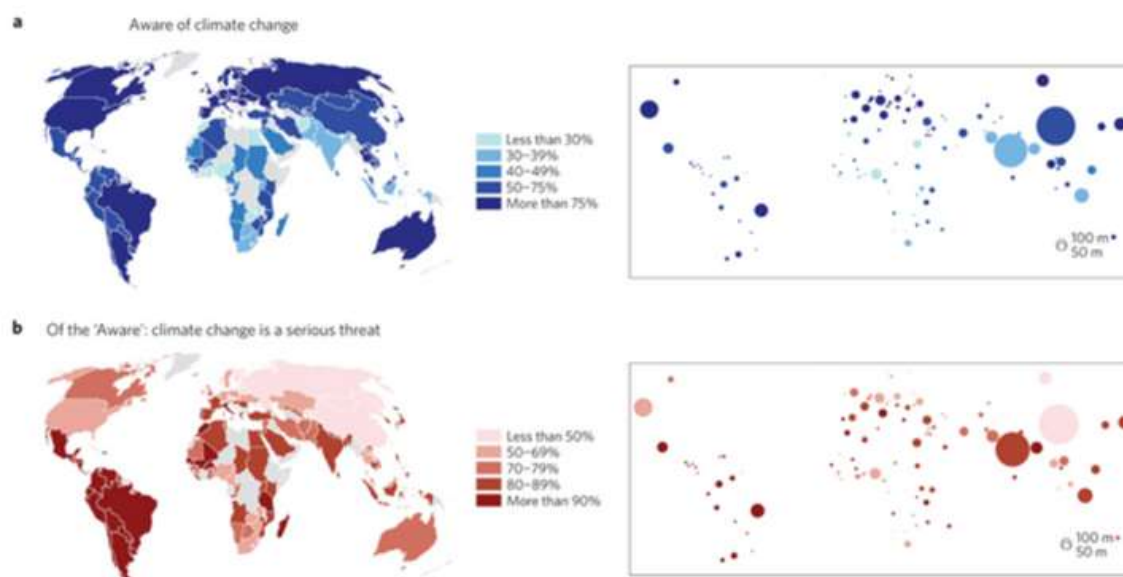


Figure 2.2: Geographic Patterns of Global Climate Change Perceptions Opinion Poll (Lee, 2015)

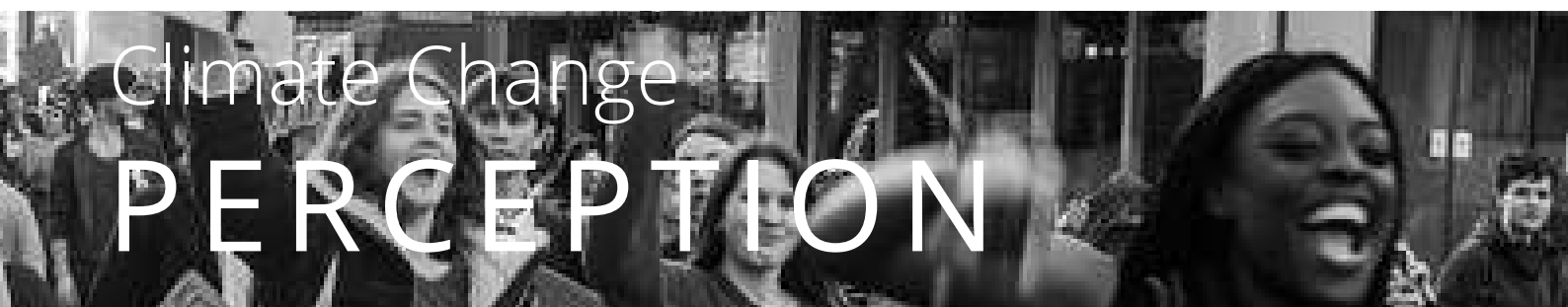


Figure 2.2 shows that there is no certain correlation between knowledge and viewing climate change as a threat. While the UK populace polled as both aware of climate change as both real and a threat, there are groups of people who are skeptical or even in outright denial of the threat posed by climate change and many people in other developed countries like the US, Australia, and Germany think similarly (Buranyi, 2019). In Figure 2.3, those countries had a large level of climate awareness, but did not believe it was a threat. Understanding why the public feels this way is important in addressing climate change. The UK can provide insight into how to address this because it has historically been a champion of climate change legislation and international cooperation with citizens that are concerned that climate change is having devastating effects.

As Figure 2.3 demonstrates, A large majority of the UK acknowledges the existence of climate change (Fisher 2018). This acceptance is fairly consistent across age ranges, ranging from 90% to 94% in age groups 65+ to 18-34 (Fisher 2018). Most citizens believe climate change is partly caused by humans, but only 36% believe climate change is caused primarily by humans (Fisher 2018). Younger generations are more likely to think climate change is caused by humans than older generations by a wide margin (Fisher 2018).

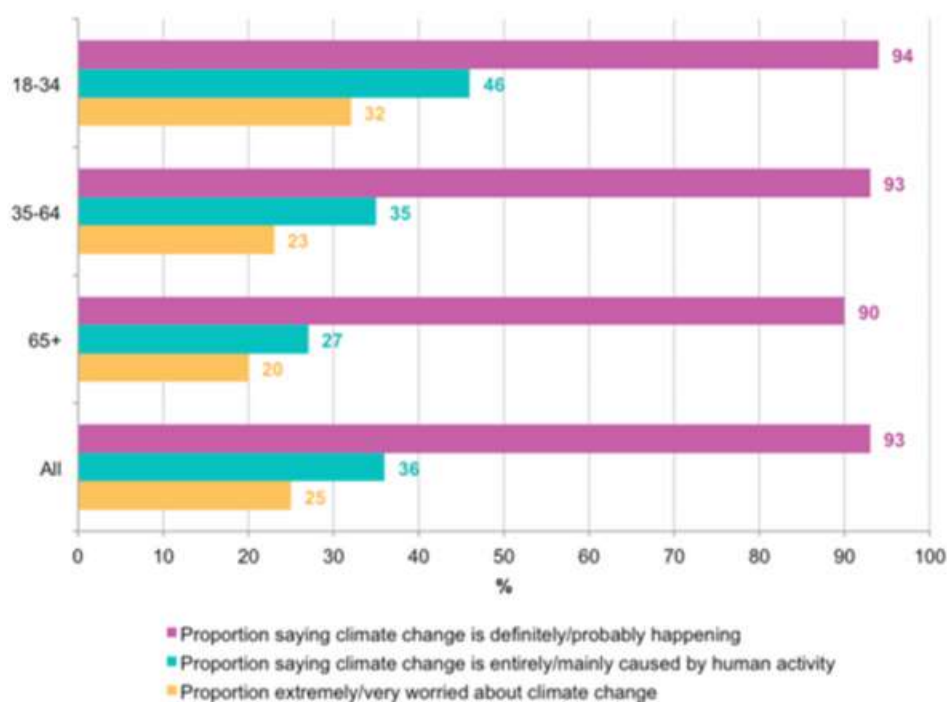


Figure 2.3: UK Citizens' Views of Climate Change, by Age and Education level (Fisher 2018)

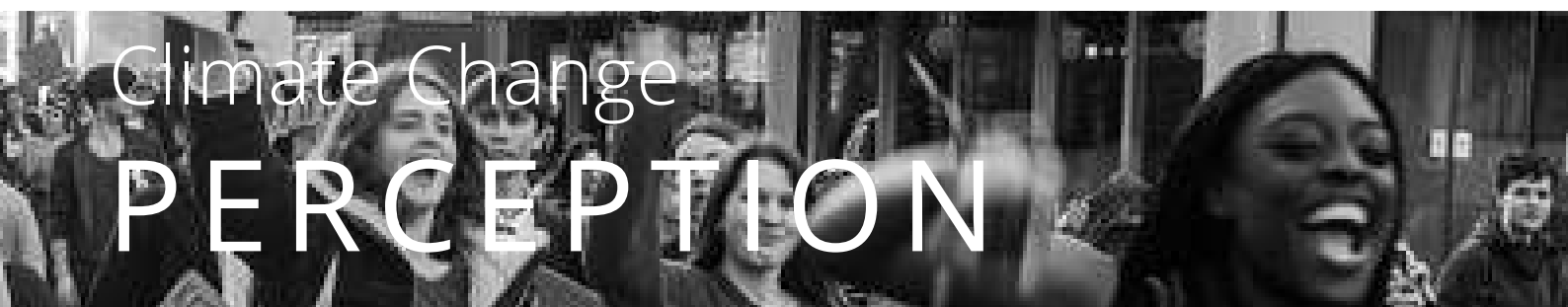
Climate Change PERCEPTION

As seen in Figure 2.3, younger generations are more concerned about climate change compared to older participants (Fisher 2018). These trends are echoed in comparisons of educated and uneducated opinions. The figure shows that 35% of university graduates are extremely worried about climate change compared to 20% below General Certificate of Secondary Education (GCSE) level (Fisher 2018). This gap in concern regarding climate change indicates different demographics perceive and experience climate change in different ways. Different perceptions and experiences are indicative of different personal stories.

Perceptions of Activists and Experts

Climate change activism is an important aspect of London culture. Organized events like the 2019 climate strike, which attracted 100,000 people in London alone, represent a large segment of public's climate change perception (Taylor, 2019). Groups like the Extinction Rebellion, an activist group that succeeded in pushing parliament to declare a "climate emergency," have attracted thousands of members and major academic support (White, 2019). The existence of these groups is a testament to the impact climate change has had on individuals in London. Activists are a significant part of London climate change culture and could provide a unique perspective from their struggles as activists.

Similarly, local climate experts might have climate change perspectives that differ from the general population. Their perceptions could offer insights on the broader impacts of climate change, beyond the scope of the general population. For example, climate change threatens cultural heritage, especially historical structures like churches and archaeological sites. These sites are endangered by changing weather patterns and increased exposure to severe weather events (Sesana 2018). Broad topics can provide important context for individual stories and help convey the gravity of the situation. Additionally, local experts may have insights into climate change impacts that local citizens do not.

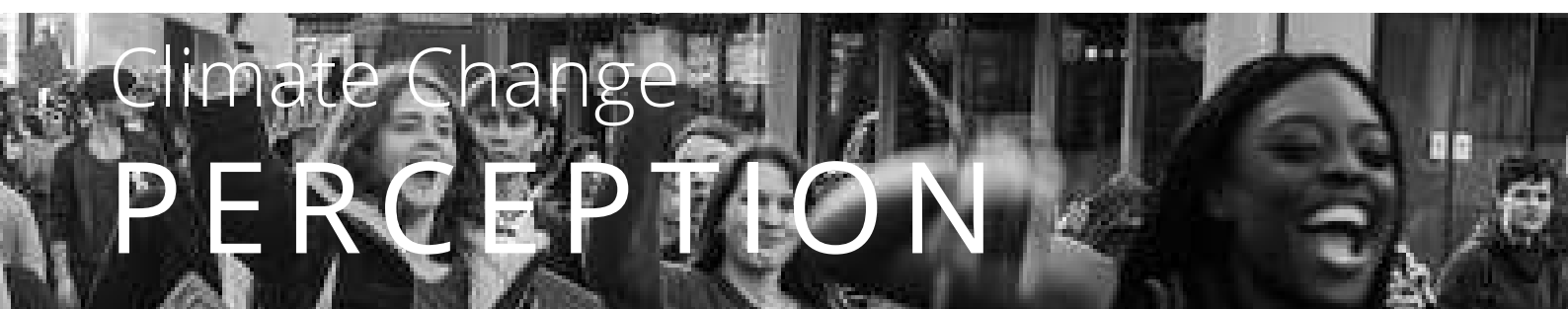


Climate Change PERCEPTION

Government Position and Brexit

As a democratic nation, the issues that preoccupy the UK government are often the same issues that weigh on the minds of the public. It is important to understand the current issues and the government's stance on them to understand the basis of how locals view these issues. As climate change becomes an increasingly pressing matter, the relationship between public opinion and government action increases in importance accordingly. Many studies have correctly concluded that public opinion has a large effect on the resulting climate change policy (Lee, 2015). The UK is a world leader in emissions reduction and other climate change legislation, but only because of its well informed populace. While the link between concern and policy is strong, there is not necessarily a link between climate change knowledge and the desire for legislation (Lee, 2015). This further illustrates that scientific facts do not always cause the public to worry about climate change. Instead, other factors like experiences are much more likely to cause an individual to worry about the climate. Additionally, climate change is not always the issue on the forefront of public opinion due to other political and societal problems.

This remains true for the UK, where current politics is often dominated by Brexit related discussion, which has forced climate change from its status as a main concern, being replaced by problems like new trade deals (Hepburn, 2017). Reducing emissions and otherwise transitioning over to a green economy is expensive, and while it can increase competitiveness in the long run, doing so requires investment, which is not always practical for distracted nations, like the UK, or developing economies (Bassi, 2016). This is unfortunate not only because Brexit has distracted both the government and the general population from the issue of climate change, but also because the UK leaving the EU will disrupt the organization's attempts to combat climate change. Not only will one of the world's largest economies no longer be subject to the EU's climate legislation, but it will need to make up the ground lost in terms of policy once it no longer applies. Additionally, Brexit could have a large effect on international cooperation to lower harmful activities like emissions (Hepburn, 2017).





The Importance of STORYTELLING

Storytelling as a Tool to Effect Social Change

Sharing stories has been an activity human beings have engaged in since the invention of language. Human beings naturally respond to stories, and use them to recount most aspects of their lives, including culture and beliefs (Kent, 2015). Traditionally, stories would stay mostly confined to their localities, while occasionally being carried to new places by certain travelling individuals, such as sailors or merchants who in turn brought stories from distant lands (Wilson, 2014). Yet now, stories can come from a smartphone, website, or film and reach broader audiences around the world like never before. Storytelling connects individuals to each other and new ideas by sharing individual experiences to the audience in a relatable and digestible form (Wilson, 2014). In the age of globalization and digitalization, the avenues individuals can use to share their stories have grown in accessibility, reach, and impact.

Figure 2.4 demonstrates the “classical” storytelling arc, a structure used to explain the structure stories generally take (regardless of origin) when laying out events in chronological order.

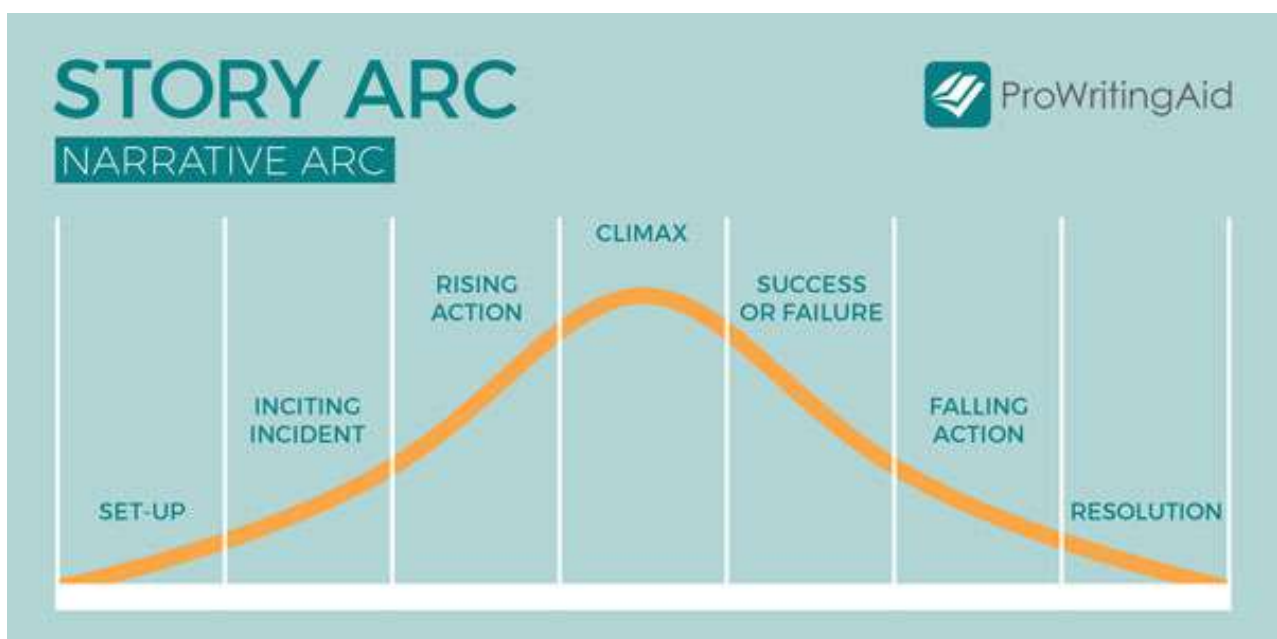


Figure 2.4: A traditional story arc detailing the key parts of a story structure. (Edens, 2019)

The Importance of
STORYTELLING

The Stories of Society

Stories originate from the experiences and actions of individuals, before being shared with others. Regardless of origin, stories are able to cause profound societal change, provided they are distributed and constructed appropriately (Bushell, 2017). The content and delivery of stories is integral to their potential impact and audience engagement.

As pieces of rhetoric, stories attempt to exert influence over the target audience to either change a perception, belief, or behavior (Kent, 2015). In the case of stories, rhetorical impact is closely tied to their ability to cause the audience to empathize with the characters, themes and actions. Thus, stories about individuals (including foreigners) can be relatable and cause social change (Wilson, 2014). While one person's experiences are small when considered alone, the experiences of the broader public have an effect that ripples through global understanding of topics like climate change. People can more easily understand each other's experiences than they can understand plain data or facts. For instance, a close friend's recommendation is often more impactful than a factual report about the same topic because the sharing of an experience is more personal and relatable (Dergisi, 2015). Depending on the pairing of story's framing, plot, and medium of delivery, the story can profoundly impact society.



The Importance of
STORYTELLING

Why a Documentary?

The story of climate change has mostly been told in two key media, documentaries and scientific reports (Bushell, 2017). Typically, these mediums present climate change in a serious and objective tone, which serves to illustrate the gravity of the situation by painting climate change as an existential threat (Kelsey, 2014). Documentaries in particular convey the facts of climate change as a story, including a beginning (the industrial revolution), middle (the present), and different possible endings (futures depending on actions responding to climate change). Documentaries are an incredibly powerful medium, since they are able to present scientific information accurately in a format accessible by the general public.

Like other storytelling mediums, documentaries have a variety of styles and conventions. The content of documentaries varies greatly; the order, presentation, and content that comprises the documentary ultimately shapes the story and messaging conveyed to the audience (Sørensen, 2013). The length of a documentary also plays a key factor in the impact it has on the audience. While longer documentaries allow for more context and exploration of the information, shorter documentaries have the advantage of being able to focus on the key points, and allowing for more audience retention. This benefit is shown by how readers can often remember the details from a short story better than they can details from a novel (Sørensen, 2013). Documentaries, as storytelling devices, manage to combine non-fiction and entertainment, since they take real world events, capture them, and present the story to their audience.



The Importance of
STORYTELLING

Climate change is a global threat that impacts everyone in different ways. By sharing personal climate change experiences with a wide audience, we can raise awareness. Storytelling techniques can be used to present this personal data in a compelling and accessible way. Forming a complete knowledge of the information surrounding climate change as it affects London is critical in understanding the public's perception. The contextual and background information outlined above provides insight into how the project was shaped from the beginning.



The Importance of
STORYTELLING



METHODOLOGY

The goal of this project is to record stories detailing the experiences residents of London have had with climate change that will assist the WPI Global Projects Program and address the disparity between scientific climate data and how the public perceives climate change through their own experiences. As a group, we were able to complete this goal through the following objectives:

1. Find Climate Stories
2. Conduct Interviews &
Record Stories
3. Edit & Refine Footage

A photograph of a man with a backpack standing in a doorway, looking into a dark interior. The doorway is framed by a white door and a stone wall. The man is wearing a dark jacket and jeans. The text "Find Climate" is overlaid on the lower part of the image, and "STORIES" is overlaid on the bottom right.

Find Climate STORIES

In order to find people to interview, we had to establish who we wanted to talk to, why we wanted to talk to them, and how we would find them. There are currently 9.1 million people living in London (World Population Review, 2019), creating a seemingly never-ending resource of people to reach out to during our short seven weeks on site. In order to organize and provide different viewpoints on climate change our group came up with three target populations. These three groups are the general population, climate change activists, and climate change experts. By separating the population into these groups, we were able to identify a wider variety of topics, stories, and viewpoints due to their differing backgrounds on climate change.

Targeting 3 Groups of People

The first group we collected stories from is the general population of London. These are people who lack technical climate change knowledge but are aware of the impact it has on their lives. The general population represents the majority of the public, and “once the public’s views on public issues are known and acted upon, our government will be improved rather than damaged.” (AHS, 2019). The general population’s stories detailed easily observable phenomena and avoided esoteric jargon and data. This made them very accessible and therefore essential to the project.

The second target audience from which our group collected stories was London climate experts. The purpose of our project is to provide meaningful stories rather than scientific data, but this does not mean that the professionals behind the data do not have a story of their own. We wanted to capture that led them to become heavily invested in understanding the climate. and climate change.

The third and final target group we interviewed were climate change activists. Activists have a different agenda when compared to the average London citizen. Described in an article by Bill Martin, “Activism is action that goes beyond conventional politics, typically being more energetic, passionate, innovative, and committed.” (Martin, 2007) Activist's stories reflected the reasoning behind their pushes for reform, making them an important and unique audience essential to the project.



Find Climate
STORIES

Methods of Contacting

Our group primarily used snowball sampling to find individuals to interview. Snowball Sampling is a sampling method consisting of two steps:

1. *Identify potential subjects in the population. Often, only one or two subjects can be found initially.*
2. *Ask those subjects to recruit other people.* (Glen, 2014)

Professor Golding provided us with multiple potential contacts to use in the preparation term preceding the project. The list included gardeners, anglers, walkers and bird-watchers who could provide beneficial climate insights to our project. We used this method with the initial contacts Professor Golding provided to find other members of the local London community for potential interviews.

Our second method of sampling, Convenience Sampling, was used while we attempted to find members of the general population in busy areas, parks, and streets of London. Convenience Sampling is, “where the first available primary data source will be used for the research without additional requirements.” (Dudovskiy, John) We simply found a busy area, set up our audio and video equipment, and asked to interview random individuals as they walked by. While most people turned us down, we were still able to collect meaningful stories from a handful of people who said, “yes”.



Find Climate
STORIES



Conduct Interviews &
RECORD STORIES

Gathering climate change stories is essential to creating a narrative on climate change. For the purpose of our background and project, a story is an account (true or fictional) of interconnected events told in any format (video, orally, written, etc.). A story must have the following components: a clear plot (what is happening), identifiable characters, action (what is happening), setting (where the story takes place), resolution, and a change (typically the direct result of said resolution) (Kent, 2015). While a story can vary in content and format, the construction, tone, and audience dictate its societal impact.

Create Interview Structure

We gathered stories by recording open-ended interviews. A “conversational interview technique with open-ended questions” is the most effective way to encourage stories (Paschen 2014). By using open-ended interviews instead of restrictive methods like surveys or structured interviews, the interviewees had an opportunity to “tell [their] own story” (Coughlan 2009). The interviewee was engaged in a lighthearted conversation that gradually focused on climate change.

Conduct Interviews

We used two cameras and lapel microphones from the WPI Academic Technology Center (ATC) to record the stories presented during interviews. Preparations were made in order to effectively record the interviews. The first aspect we considered was video footage. The interviewee’s lighting and framing were considered, and multiple camera angles were established with tripods when time permitted. When possible, the background was chosen to relate to the interviewee’s story. Footage of the surrounding area was filmed to be used as visual context for the recorded story. In order to capture high-quality audio during interviews we used lapel microphones. After preparations, the interview began with a recorded consent statement that stated the purpose, the affiliated organizations (WPI and the GPP) and any disclaimers (see Appendix B). After this formality, the interviewee was introduced to a climate change theme and the ensuing conversation was recorded. The pacing and direction of the interview was left to the interviewee, allowing them to tell their story uninterrupted.



Conduct Interviews &
RECORD STORIES



Edit & Refine
FOOTAGE

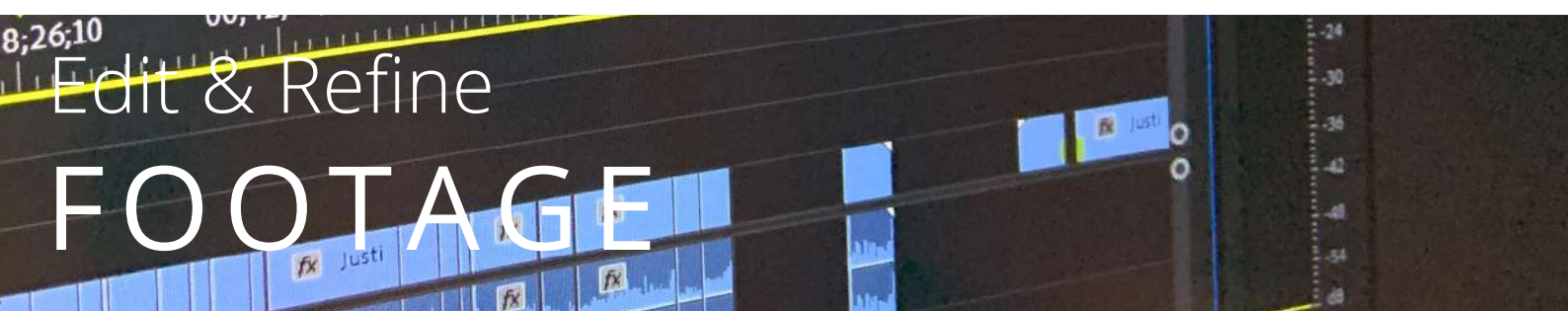
Editing and refining the stories we gathered was an important step in constructing our final documentary and our videos of individual stories. While the raw interview footage itself held a lot of insight and fascinating material from our interviewees, trimming down the interviews into compact segments allowed us to better integrate them into a cohesive series of events fit for a documentary. Additionally, being able to reposition and digitally enhance interview segments allowed us to increase their emotional impact and delivery.

Categorizing Interviewees

After gathering the interviews, we organized them into three categories: general population, climate activists, and climate experts. This helped us determine which clips would be most effective in the documentary. Some subjects would fit perfectly in either category, and in this case, we determined their position based on the interview itself. Utilizing this system of categorization, and by actively documenting which interviewees satisfied our requirements, we were able to build a balanced roster of individuals to include in our documentary.

Storyboarding

Once our interview data was categorized, we outlined the structure of the documentary utilizing a traditional outline and a rough storyboard. Storyboarding is a technique used in both fiction and non-fiction film production; by visually laying out the flow of the film with sketches, the team knows what to strive for when editing and sequencing the footage. We created the storyboard by first defining what we wanted the tone of our documentary to be, then establishing how we wanted our “story” to be told. For each major point we first outlined which category of our interviewees we wanted to be in the spotlight for that segment. Next, we included a specific interviewee’s name, and which specific clip from our interview with them we wanted to feature. Creating and tweaking this outline as we gathered more and more data gave us a lot of freedom to carefully curate which perspectives and stories we presented.



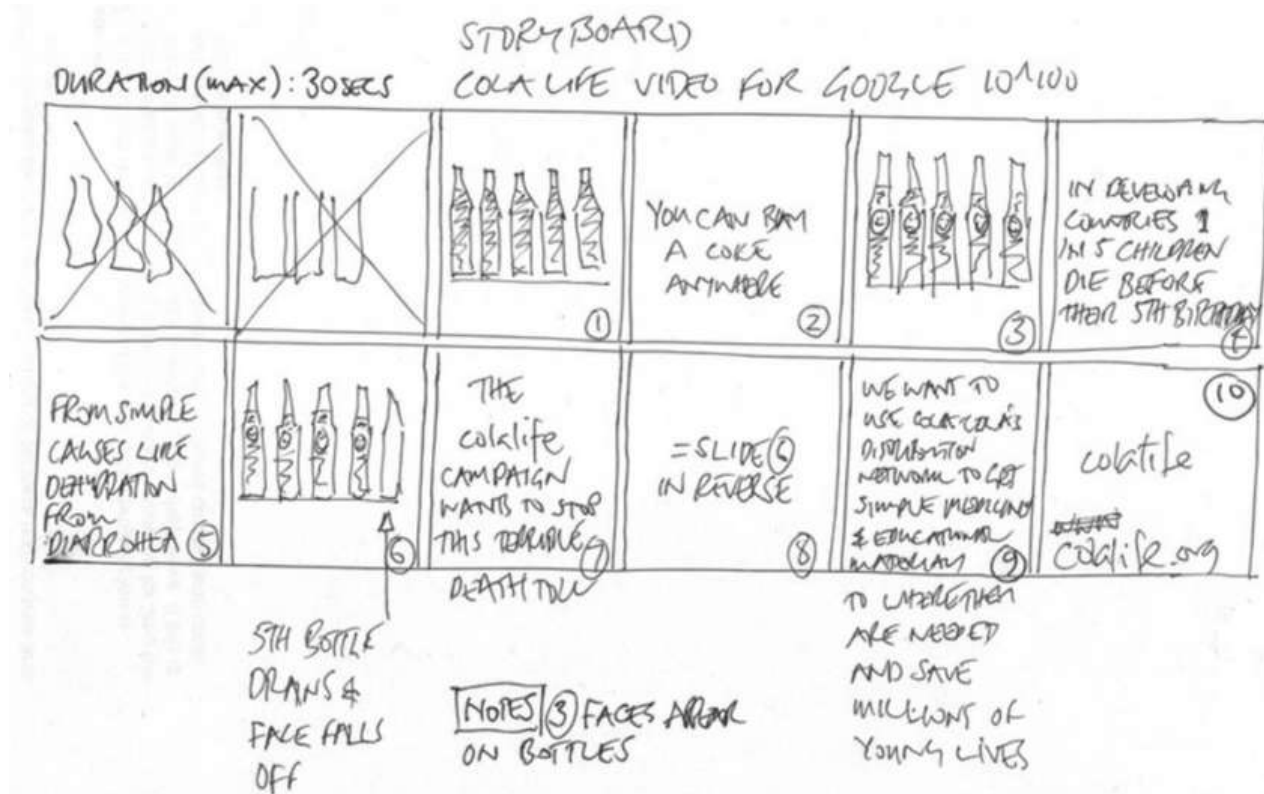


Figure 3.1: Storyboard Example for a Cola Commercial

8;26;10

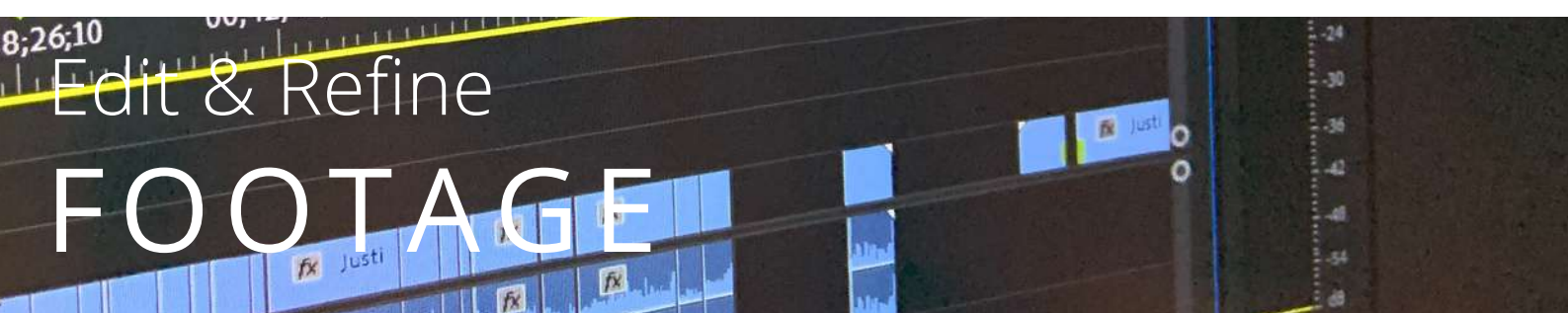
Edit & Refine

FOOTAGE

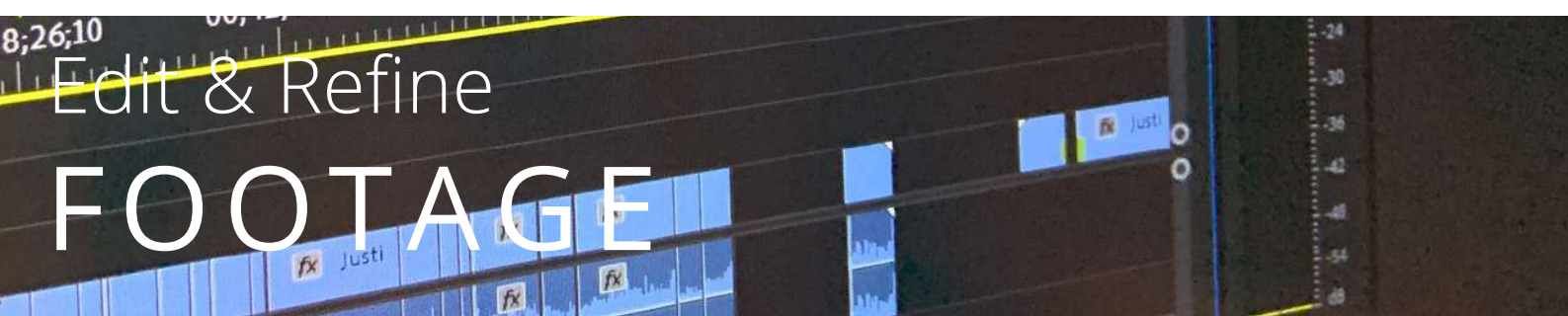
Editing the footage

After we recorded interviews with our subjects we began the editing process to extract from each interview some key takeaways and the unique perspective of each interviewee. Utilizing our outline and storyboard for the completed documentary, we began the long process of editing our clips in Adobe Premiere, and inter-cutting segments in the footage utilizing b-roll,* which we recorded during our time in and around the locations we interviewed our subjects or from our time in London in general. Utilizing the b-roll to provide visual breaks from our shots of the interviewee giving the interview allowed us to punctuate their points with interesting visuals, and add to the emotional gravity of their anecdotes and perspectives. To maintain complete fidelity, we also carefully monitored each recording's audio, and when necessary, utilized software such as Reaper (audio editing suite) or Adobe Premiere's inbuilt features to digitally enhance/clarify the subject's voice, or remove noise from the background (such as cars, construction noises, etc.). Additionally, we utilized royalty free music to increase the emotional impact of the interview and set the mood and tone of certain segments. The combination of edited and refined audio and visuals helped us create a film that is both pleasant to watch, informative, and sincere. Lastly, for the documentary, we included sections of narration. These were used to bridge thematic gaps and were recorded using the lapel mics used for the interviews.

* B-roll: The name given to footage that does not directly include the main focus of the film (in this case, the interviewee telling their story), but serves to either establish location or contribute to the emotional impact of narration.



By implementing the structure detailed through the objectives, we were able to address our goal thoroughly and efficiently. Identifying groups and individuals to interview, the first objective, was critical to beginning the process, and set up a good framework to facilitate the rest of our work. After finding our interviewees we proceeded onto the second objective, interviewing them and recording supplementary b-roll footage. Next, we analyzed and edited the content will be the phase where we created the deliverable of the project. Extra footage was still edited for use by the GPP in other climate change initiatives related to London. We believe the project has successfully contributed climate change perceptions from a section of London's population to be considered not only on its own as an insight into the community, but also as part of the global awareness.





FINDINGS & DISCUSSION

Our project focused on collecting stories detailing individuals' experiences with climate change in London. The findings chapter documents the data we gathered through collecting our interviewees and illustrates some of the broader trends we noticed from our interviewees' commentary and what it says about the climate situation in London. This chapter is separated into the following categories:

1. General Population
2. Climate Experts
3. Climate Activists
4. Analysis
5. Discussion

Meet the Interviewees

AND THE STORIES WE COLLECTED



Just as we separated our search for interview subjects, our findings are separated into three major groups of people: the general population, climate experts, and climate activists. To begin, the following individuals are the different people we talked to, belonging to one or more of these groups.

General POPULATION



At its core, our project involves recording the climate change experiences of London's citizens and sharing these stories and experiences with a global audience. The vast majority of the city's inhabitants belong to the group we've defined as the general population. Therefore, successfully modelling how climate change affects this group is the most important step in forming a picture of the overall impact climate change has on the overall population of London. Because of this, the largest section within the group of people we interviewed belong to this category. In studying the general population, we were originally interested in determining which climate change factors affected them the most or were most easily noticed by the largest amount of people. To do so we simply asked our interviewees if there were any changes in the climate they might have noticed.



General
POPULATION

Colin Brightwell



**Occupation: Administrator
(City University of London)**

Story Link:

<https://global-lab.wpi.edu/2019/12/12/climate-change-stories/>

Throughout the interviewing process, convenience sampling did not result in many successful interviews. Despite this, we were able to speak with a gentleman named Colin Brightwell. Colin began by noting the lack of snow and, in particular, the lack of frost. He stated he no longer saw it on his walk to work, when two to three years ago, he would see it every morning. Colin reported that recent winters were shorter, with temperatures in late January hovering around ten degrees celsius when they would typically be about five or six. He said that this affected how often he needed to put on the heater or wear warmer clothes during the winter season. A statement we recorded that would be echoed by other interviewees was that Colin felt as though winter had not even begun, but that it was on hiatus. Colin moved

on to note that the hottest temperatures of summer lasted longer than previously. He stated that the past two to three summers have had about a month of high temperatures when the summers before that only had about one week. Colin's last thoughts were about the UK government's reaction to climate change. He stated that, in the wake of Brexit, lawmakers would likely be more concerned with negotiating trade deals with the US and EU. Colin said that in the past, issues like terrorism have distracted them from climate change even though climate change is just as important an issue.

General
POPULATION



Zoey & Jamima



Occupation: Architectural
Assistants (Bere Architects)

We were able to interview two recently graduated architects named Zoey and Jamima. Early on in the interview they discussed how most new construction projects in London include at least some aspect of sustainability. However, the associated costs often cause this aspect to be lost during the design process. They went a step further to say that older managers and lawmakers in the UK are typically more business oriented and not as concerned with climate change as younger generations are. They stated that summers in London are usually hotter than the rest of the country and that the 2019 heatwave was particularly hot and uncomfortable.

General
POPULATION



Towards the middle of our interview recording phase, we had the pleasure of travelling to Beckenham Place Park in Lewisham, a borough in south London, to talk to the workers there. We had been in contact with Lucy Mitchell, the head of the park's rejuvenation program, who helped us organize an audio interview with a group of volunteers that had worked there for various amounts of time. We began by discussing the ongoing winter of 2019 - 2020. The volunteers noted that this winter and previous winters were both warmer and shorter, with the temperature never dropping below zero degrees celsius. which causes flowers to

bloom and birds to mate too early. They also noted a lack of snow in the park and in London. Similar to Colin Brightwell, the volunteers explained that frost had only come two to three times over the past winter, which had a negative effect on the park. Because of this, flowers and other wildlife, like the park's English Oaks, have had a hard time surviving in the warmer temperatures. They observed this easily because more and more tree species from warmer areas are appearing in the south of England, where the park is located. The park volunteers described recent summers as hotter and dryer. This resulted in additional difficulty for local plant life to survive because they are acclimated to mild, wet summers. Among the affected plants have been apple trees, which the volunteers explained to have gone entire seasons without producing fruit. When discussing the future of climate change, the volunteers were concerned that the Thames river might rise too high for the current Thames Barrier to contain. Lastly, they said that it was not young people's fault for the state of the environment.

Volunteer Gardeners

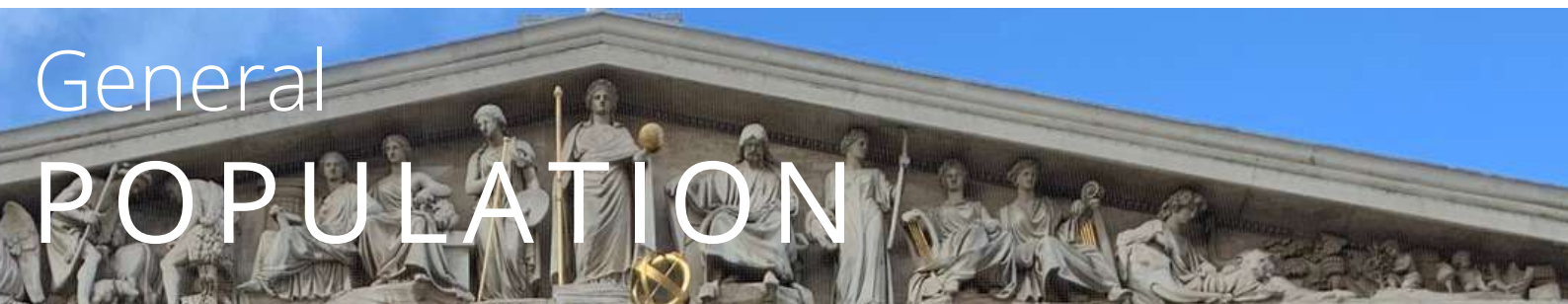


Occupation: Volunteers (Buckenham Place Park)

Story Link:

<https://global-lab.wpi.edu/2019/12/12/climate-change-stories/>

General
POPULATION





Climate

EXPERTS

Climate experts are an important group of London citizens that possess significant knowledge or experience with climate change. By interviewing experts, we hoped to create a more cohesive picture of climate change impact on London. The stories we collected from experts achieved this by highlighting subtle changes left unmentioned by the general population, how these will impact the region, and by confirming trends noticed by the general population. While experts' stories may not be indicative of the overall population's experiences with climate change, they reinforce them by adding credibility.



Climate
EXPERTS

Justin Bere



Occupation: Architect (Bere Architects)

Story Link:

<https://global-lab.wpi.edu/2019/12/12/climate-change-stories/>

When we spoke with Justin Bere, a sustainability focused architect who we got in contact with while in London, he stressed the importance of a stable ecosystem and how it relates to a stable climate. His first major point was that people need to be close to nature to have empathy for the climate and environment. He said that his time on safari in Africa as a child helped him feel connected to and care about the environment. He really stressed the idea that young people need to become acquainted with nature because they will have to grow up with a world suffering from climate change and that his generation was not as well learned about it, which has resulted in older lawmakers not prioritizing it. He said that this can be fostered through parental help and that his parents, as farmers, were very in tune with climate change. Justin remembered a torrential rainstorm in London during a summer in the late 1980's, something his parents recognized as an anomaly at the time. He stated that "Our

climate is dependent on everything we... and all the other species do." Justin explained that in recent years he witnessed warm weather in February followed by a cold snap in March. Due to this unusual weather, his bees "were coming out in February, but there's no nectar, no nothing." This period of early warmth causes trees to blossom before spring, enticing the bees to begin working. But when the cold weather snaps back, this harms both the trees and the bees. Justin also felt strongly that not enough is being done to stop climate change. He cited government inaction and big companies prioritizing money. He made an interesting comparison between our modern culture that continues extracting fossil fuels despite knowing its negative effects and native Hawaiian culture, which would stop a practice if it was found to be harmful. He said we won't stop practices that are a negative investment for the future because we depend on them today.

Climate
EXPERTS

Beckenham Place Park Gardeners



Occupation: Gardeners & Horticulturists
(Beckenham Place Park)

Story Link:
<https://global-lab.wpi.edu/2019/12/12/climate-change-stories/>

During our trip to Lewisham, we were also able to talk to three of the head gardeners at Beckenham Place park, who have been working there for around 40 years each. To begin, the gardeners mentioned that the cold weather of previous winters typically lasted for months, but has since been reduced to a span of merely weeks. Also, the snow flurries that usually fall over the park have melted into rain, waterlogging the entire park and making work difficult and putting them behind in their work. They noticed flowers budding and birds mating many weeks too early because they begin

with warm weather. Additionally, they had begun noticing atypical waterfowl that would not usually live as far north as England, but the warmth has attracted them. In years prior, the first frost would usually come in September, but in recent years, this hasn't happened until December, making the grass-cutting season considerably longer. This absence of frosts means that pests, like bug infestations, are not forced underground for the winter, causing problems for the wildlife. The shorter winters are then followed by longer, dryer, hotter summers, with Colin saying "You go from one extreme to the next really." The traditional English foliage struggles without the rain and the drier summer ground. This is causing the foundations of the park's 18th century mansion to collapse because they are based on clay, which shrinks without moisture. The hotter weather in the city attracts more people to the park. This may seem positive, but it is actually increasing the litter and pollution at the park. The gardeners also discussed a severe storm in 1987 that tore down many very old heritage trees. Lastly, the gardeners believed climate change was not the "legacy" of older generations, but that it is up to them to pass on what they know to the younger generations.

Climate
EXPERTS

One of our most unique contacts, wEarthwhile founder Rachel Patteson, provided us with deeper insight into how the union of storytelling and climate change awareness play hand-in-hand. Born in Louisiana, Rachel experienced the devastating effects of climate change in the form of two major hurricanes, including hurricane Katrina. This unfortunate series of events inspired her to turn her worry into action. In university, she chose to study climate change on a scientific level. She became an expert in soil, atmospheric, and environmental science. Through her research, Rachel traveled around the world to Alaska, Russia, and completed her masters degree in London. When she was offered to study at the prestigious

institutions of MIT and Harvard, she declined. After all of her time and effort in the scientific community, she felt a disconnection between how people were actually feeling about the topic. Because of this, Rachel created the storytelling platform wEarthwhile. She said that Facts are objective, and critical to research, but conversations about facts themselves are not super productive due to a few factors. This includes things like unfamiliarity with stats, distrust with where the information is coming from, and a lack of trust within the scientific community. She believes that stories are more powerful than facts and provide an understanding on an individual level, and this is the purpose of wEarthwhile.

Rachel Patteson



Occupation: Founder

(wEarthwhile)

Story Link:

<https://global-lab.wpi.edu/2019/12/12/climate-change-stories/>

Climate
EXPERTS



Climate

ACTIVISTS

Climate activists are a small segment of the overall population of the city who, regardless of profession, ethnicity, age or financial status, have decided to raise awareness of the imminent threat of the climate emergency. Our reason for interviewing these individuals was that this section of the population has some of the strongest opinions on climate change and London has a notable activist presence. Our intention for interviewing this part of the population was twofold; firstly, we sought to understand what compelled these individuals to believe so strongly that climate change is a social issue worthy of taking a stand publicly and occasionally putting themselves at risk. Secondly, we wanted to discover their perspectives on the current state of climate change, and how they view the actions of the government, corporations, and citizens of London in relation to it.



Climate
ACTIVISTS

After attending an Extinction Rebellion (XR) meeting we were able to interview a couple members, including Alex Jelly. Alex explained that she had been an environmentalist and an activist for most of her life. Her involvement in climate activism began on the board of an organization called 10:10, which worked to reduce emissions in the UK. She said that we have been harming the climate for so long that she sometimes felt hopeless, but getting involved in activism changed this. She went on to explain that discussing problems like climate change compassionately and non-violently is most effective. She also felt that the current governments of major countries like the UK and US are not doing enough. She stated that those countries have contributed the most but won't feel the worst effects, so they must work to the benefit of the planet as a whole.

Alex Jelly



Occupation: Activist
(Extinction Rebellion)

Story Link:

<https://global-lab.wpi.edu/2019/12/12/climate-change-stories/>

Climate
ACTIVISTS



We were fortunate enough to meet and schedule an interview with Sebastian Sandys, a member of Extinction Rebellion's (XR) Islington chapter. Sebastian explained to us why he joined the movement, and why he believed the movement to be effective at spreading awareness about climate change. He explained that one of the most important functions of XR is to keep climate change at the forefront of the public eye through non-violent disruptive actions. Sebastian explained to us that the organization reaches out to members of the general population from all ethnic and economic backgrounds for two main reasons. The first reason is to inform them how climate change may affect them, and their loved ones. The second reason is to

demonstrate how the climate agenda and social agenda are not only compatible, but often times meet the same goals. An example he provided was: "Yes, our schoolchildren's lunches are important, but we are failing them if those lunches are delivered in a diesel truck." Sebastian also mentioned that a key issue XR faces is that politicians often have no incentive to pursue initiatives and programs that would curb carbon dioxide emissions and encourage renewable energy development, because they do not believe it will get them re-elected. As part of his concluding thoughts, Sebastian shared with us the belief that climate change is ultimately humanity's struggle, and that it is pivotal that the general public become alert and begin taking action (both at an individual and societal level) to curb the oncoming climate catastrophe, as the fate of future generations is closely tied to whichever response is taken to climate change.

Sebastian Sandys



Occupation: Activist
(Extinction Rebellion)

Story Link:

<https://global-lab.wpi.edu/2019/12/12/climate-change-stories/>

Climate
ACTIVISTS

ANALYSIS



The stories of the general population, climate activists, and climate experts outlined above provide individual stories to observe and appreciate, but each group noted a variety of topics during the interviews. By taking a look at all of the opinions, beliefs, feelings, and experiences, our group has been able to identify the similarities and differences between these three groups of London citizens. While they did so in different ways, the groups provided information that overlapped in many areas, creating the trends we were hoping to find. These trends allowed us to understand the overall population's perceptions. These intertwined trends allowed us to weave a bigger story for the structure of our documentary.



ANALYSIS

The general population that we listened to spoke primarily on how climate change has brought about inconveniences to their lives. These experiences leave impacts through changes in behavior, which we recorded as their “stories”. The general population’s stories are represented by Figure 4.1. When asked if they had noticed any changes in the local weather, both Colin Brightwell and the park volunteers immediately picked up on warmer winter weather, including the lack of frosts and snowfall. This was likely due to the fact that winter was ongoing. However, when asked about the summer weather specifically, all of our general population interviewees, including Zoey and Jemima, described them as hotter. Both Colin and the volunteers claimed that the hot weather lasted longer. Our sample of the general population was very able to pick up on the changes in the climate and provided us with a good baseline of how the people of London have been affected.

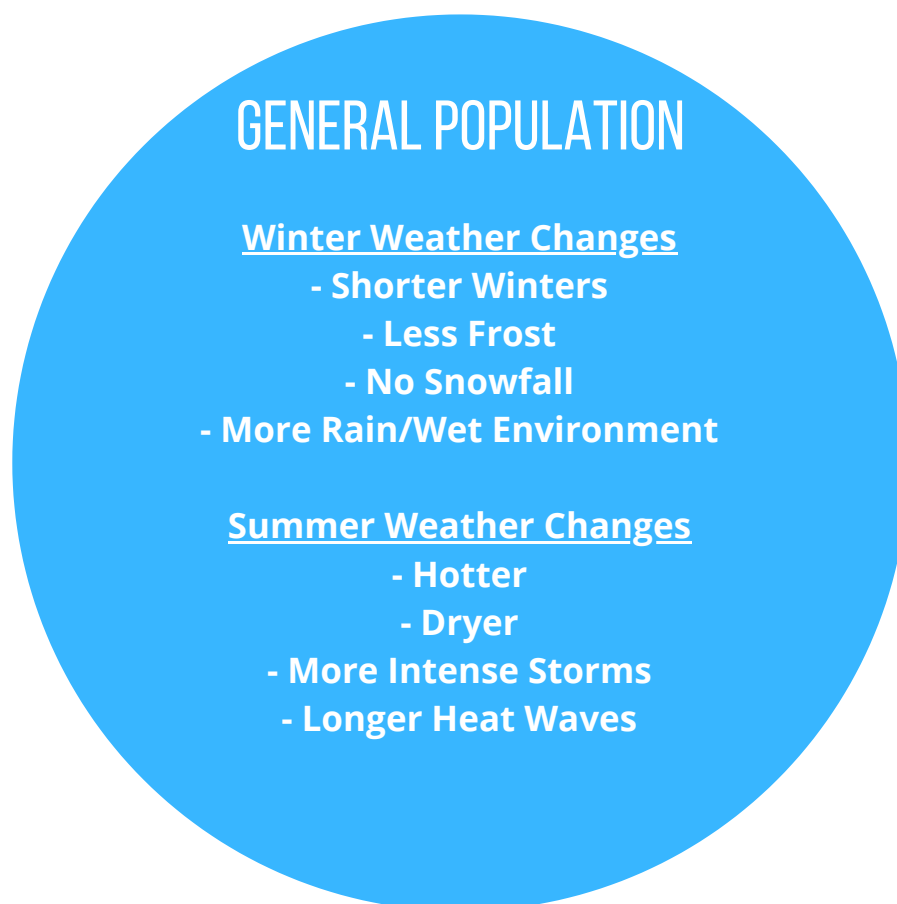


Figure 4.1

Furthermore, climate experts were able to provide insight and information as to the changes occurring in the local climate. However, they were also able to inform us as to how these changes are affecting the environment. Their stories help to factually confirm the experiences of the general population. Their stories encompassed similar scenarios the general public have witnessed, but with more empirical evidence as to why they have been occurring and what they mean for the environment. The gardeners provided lots of confirmation to what we had heard from the general population. With decades of experience working with nature in London each, noticed many changes and understood what their significance was. They confirmed the strange lack of frost and snow, the wetter winters and drier summers, the changing mating patterns of birds, earlier blooming of flowers, and explained why this mattered. In our discussion with Justin, he also explained that flowers are blooming earlier, making his bees begin working earlier. These experts explained that the lack of frosts and the early arrival of warm weather threw matures routine many weeks out of order. Additionally, both Justin and the gardeners noted the spurts of cold weather surrounded by warm weather, which even harmed Justin's bees. A further correlation between the gardeners and Justin was in the fact that they both referenced a hurricane from 1987 as a particular moment they witnessed the climate getting more extreme. Additionally, Rachel noted hurricane Katrina as one of the most influential events that caused her interest in addressing climate change. Both Rachel and Justin mentioned that we have a connection to the Earth as a whole that we need to recognize. Many of these trends among our expert interviews can be seen in Figure 4.2.



Figure 4.2

Our last group of interviewees were the activists. We had hoped to deduce from their passion the issues caused by climate change. Their stories seemed to stem from a deeper frustration than we initially expected. They had made the choice to make a stand because they feel morally obligated to force social change and that this change will not come from those that hold power. Their stories showed more than just a passion for the environment, but also a discontent with the way society is progressing in general. A summary of these stories can be seen as Figure 4.3. Both Alex and Sebastian held similar views on what must be done for the environment. They believed that what has been done is not enough and the government must do more to combat it. A common theme was that we must leave a better world for our children. This theme of younger people was brought up in every single interview we recorded, not only the activists. Both activists we talked to also had a long history of activism both inside and out of climate activism in particular. Sebastian specifically had worked with many other activist groups, stating that he was more passionate about resisting than about climate change itself.



Figure 4.3

Activists we spoke to from Islington specifically referenced dissatisfaction with the Islington council's proposed budget for the next fiscal year. This budget did not address climate change in a significant sense, despite the council declaring a climate emergency in June of 2019. In response to this, our interviewees commented on their intent to non-violently protest this budget, in spite of knowing that it will likely pass anyway due to the composition of the Islington council. During our contact with climate activists, they reported that their actions were primarily aimed at disrupting every day life in nonviolent actions in order to keep climate change at the forefront of public discussion, attempting to civilly engage other members of the public and present to them the urgency of taking action now. An additional point in this strategy is to utilize the disruptions to inconvenience politicians and other individuals in positions of power until enough of the population is aware and actively pursuing ways to combat climate change. The overall impact of this strategy in London remains to be seen, but according to our interviewees there are already signs of some success; the subjects commented on how recently the number of activists within their circles have grown, and diversified to include members of different religions, ethnicities, and economic means.

By synthesizing and comparing the general population, climate experts, and climate activists, we have identified what we believe to be the true definition of London's climate change story. While each group shares differing backgrounds, knowledge, experience and motivation, they each contribute to a bigger picture. In order to represent this in a single film, we used Figures 4.1, 4.2, and 4.3 to discover three major themes. These themes are Worry of a Changing Environments Effects on the Population, Worry of Lack of Action from the Local Government, and Belief that Activism Inspires Social Change. The union of these three groups can be seen as Figure 4.4.

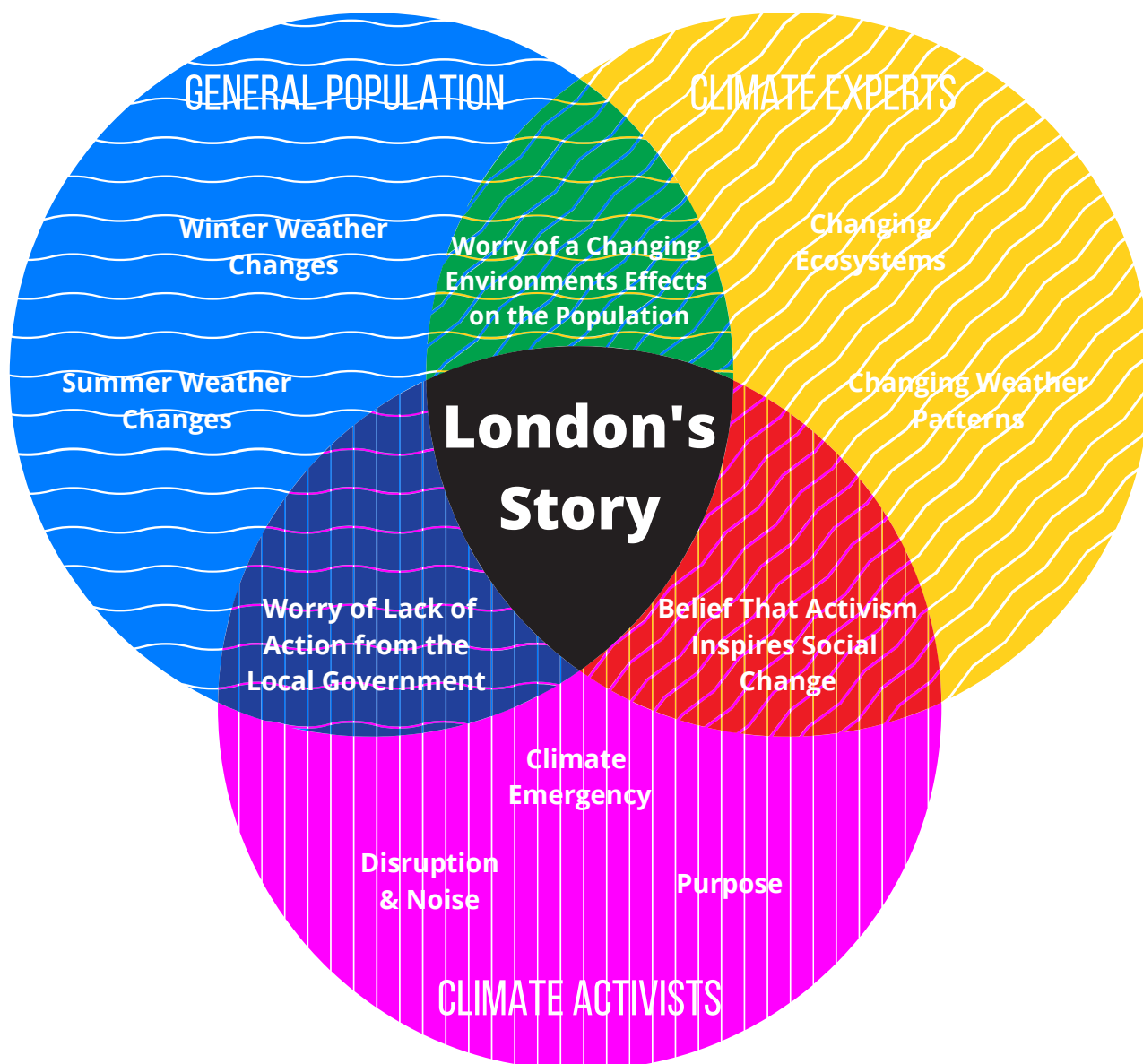


Figure 4.4

Overall, the three groups we interviewed have provided a story as to London's overall climate perception. Our discussions with the general population and experts had a lot of overlap, meaning the general population is very keen to the changes occurring to the climate. The activist group was linked through its desire for government action and belief that we should leave a functional, if not better, world to the next generations. Overall, our sample of the London population definitely believed there to be major issues with the climate and a need for some form of action to combat it.

Due to this analysis, and following the trends we established, our group was able to create and edit our final deliverable: Storying Climate Change: London. This 16 minute 19 second short film highlights everything that we learned as a group as well as paints a picture of the story that we found In London. This film was a step outside of our comfort zones, but we truly believe that It was crucial in attempting to depict just what climate change means to our three target groups: The General Population, Climate Experts, and Climate activists.



Storying Climate Change: **LONDON**

Video Link: <https://global-lab.wpi.edu/2019/12/12/climate-change-stories/>

DISCUSSION



During our time filming and editing, we had many trials and tribulations along the way to success. It was not perfect, but we were able to adapt our process and overcome the difficulties we ran into. One of the more problematic aspects of filming was the audio, for which we mostly used lapel mics clipped to the interview subject and connected via a receiver to our camera.

Early on in our study, we needed to work with a limited set of equipment and an ambiguous schedule. Because we did not have any scheduled interviews, we started by using convenience sampling to find interviewees. This was a relatively ineffective method as we were only able to find two people willing to talk with us. The first of these was an interview with a man named Bruno, where, despite setting up our equipment as we had practiced successfully beforehand, we were unable to record audio. This was also at the stage where we were using only the GoPro camera. This issue likely came from the synching of our camera and audio equipment. We are not entirely sure as to why this happened, but once our second camera, a Sony ax33 arrived, we never ran into audio issues again.

Once the second camera arrived, a Sony Handycam AX33, we were able to record multiple shots of our interviews. To do this, we would set up the Handycam across from the interview subject and the GoPro at a more peripheral angle to provide an interesting contrast in perspective. The camera arrived at a fortunate time, as well. It came just before we began our scheduled interviews, most of which we filmed with the two angles. However, for one the interview with the park gardeners, we did not have enough lapel mics, so we used the on-board mic of the ax33. This worked well, but afterwards, we decided we would have used the directional microphone. We had not brought it as it had usually not been very effective.



DISCUSSION

For the interview with the park volunteers, they were not comfortable with being recorded on video, so we recorded audio using an iPhone. We were surprised by the iPhone's usefulness, as we also discovered it could be quite effective for recording b-roll footage. We did this whenever we were in an interesting public place, such as Beckenham Place park or near the Thames. We wanted to collect a large amount so that we would have plenty to choose from while editing.

Our editing process progresses rather smoothly. We had to refine some of the missteps from recording, but for the most part, we were able to utilize Adobe Premiere Pro quite well. It was powerful and helped us remove background noise, sync multiple camera angles, and complete the interviews and documentary. One issue we encountered was that the 4k footage from the cameras resulted in extremely large video files that quickly filled the camera memory cards. This problem was remedied by quickly transferring footage off the cameras to dedicated external hard drives. Afterwards, Premiere Pro allowed us to export the files at a slightly lower resolution, making them easier to store and share. It is important to note, however, that editing long interviews into refined and shorter interviews is a time-consuming process and should be planned for as such.

After we edited our interviews into shorter segments, we organized and compiled our footage into a short documentary. First, we combed through our footage again and took notes on key talking points from each interview and the order in which they were discussed. Next, we created a "storyboard" organizing the flow of the clips we wanted to use. This storyboard divided our documentary into segments based around themes that built up the overarching narrative of climate change in London (initial observations, concerns, action from the government, etc.).

Finally, we placed the clips in Premiere Pro and began creating the documentary. We incorporated music, transitions, visual effects, and narrations to improve the overall flow and framing of the content in our documentary. The entire process took about two weeks of consistent work (with few excursions to gather more b-roll for transitions).





Conclusion & RECOMMENDATIONS

RECOMENDATIONS

The Climate Change Stories initiative involves more than just our project. The previous projects were helpful guides and we would like to provide some recommendations for future projects. If there was to ever be another group in London, we would recommend exploring some of the boroughs on the outskirts of London, such as Croydon or Hounslow, to gather an even more diverse set of perspectives from residents of the Greater London area. Given the proliferation of public transport options connecting London's many boroughs, reaching the variety of communities outside the city center is possible, and may yield further data to improve future projects, yet we remained mostly in the central borough of Islington.

Prior to our arriving on location, we were provided with a list of individuals to contact in the area. This network of contacts proved instrumental for scheduling the interviews that compose most of our documentary. We wholeheartedly recommend future climate change stories teams prioritize in the early stages of their project building and developing their network of contacts for their time on site. This includes setting up scheduled interviews as soon as possible. Reaching out to non-profits, activist organizations, and for-profit entities via email and social media in order to build connections with people in said organizations proved to be the most effective method of scheduling and conducting interviews.

While we did attempt some convenience sampling using a "cold approach" (meaning no prior social connection) interviews with passersby on the street, this proved to be a rather ineffective way of gathering data. Most individuals we approached in this way would be either preoccupied, uninterested, or have only a small window of time in which they could talk, typically no longer than ten minutes. While the data we got in this manner was completely random, and contributed to helping us encompass a wide range of perspectives from Londoners, the entire process ultimately proved impractical as we only got limited responses from participants, while the environment of the interviews was also uncontrollable and would at times work to our detriment (e.g. in an interview

that did not make it into the film, the audio was plagued by various construction noises, and at one point completely overpowered by the conversation of other pedestrians).

At the beginning of our project, we suffered some difficulties working with the equipment. First, it is important to know what equipment will be provided from the start. There was a bit of a disparity between what we were told we would be provided with and what we were actually given. Second, we would recommend monitoring the video and audio being recorded live while doing so. Doing this helped us ensure that recordings were usable.

We would also like to recommend some locations for further research similar to ours. To begin, an immediate candidate for a follow-up project would be WPI's project center in Worcester, England. Being a smaller city in a different area of England, Worcester could provide a bit of contrast to London allowing for the UK's overall perceptions of climate change to be portrayed more wholly. Additionally, some of the other WPI project centers in mainland Europe could provide interesting stories. We were told during our study that European countries like Sweden and Germany that have more abundant nature and forests would have particularly aware populations.



Conclusion & RECOMMENDATIONS

CONCLUSION

Climate change affects every person on the planet indiscriminately. Over the course of our time in London, we were able to connect with several residents and learn more about their experiences and perspectives. Given the time and resources, our team would have gone on to gather more interviews and b-roll and compile a traditional feature length documentary (lasting about an hour or longer). For our deliverable, we were able to compile a diverse, concise, and refined short film documenting the experiences of some of London's many residents. London is a melting pot of cultures, perspectives, and people. We set out to document and present the experiences of three distinct types of Londoners: the general population, climate change experts, and climate change activists. By gathering their stories, we were able to paint a picture of how climate change is impacting the day to day life of Londoners.

Climate change affects every facet of human civilization. While mountains of empirical data scientifically prove the existence and urgency of the climate crisis, the connection between this data and actual human people is severely lacking. This project, and others like it, are critical to exposing the human connection with climate change. We can all relate to each others' everyday experiences and through this, climate change stories increase our connection with effects we have had on our environment. Ultimately, this empathy will help to spur the necessary action to resolve this crisis and secure our future.

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Appendix A: Consent Form



We are a group of students from Massachusetts representing Worcester Polytechnic Institute (WPI) and WPI's Global Project Program. We are conducting interviews to learn more about individual's experiences and perceptions of climate change. All information will remain confidential unless consent is obtained. Participation is voluntary, and you do not have to answer any questions if you would prefer not to. The final results will be made public, and we can send you a copy should you want them.

Do we have your permission to record this interview?

Yes ☐ | No ☐

Do we have your permission to show your face?

Yes ☐ | No ☐

Will you allow us to include your name and other identifying information?

Yes ☐ | No ☐

Will you allow us to use your words and image for use on public website platforms?

Yes ☐ | No ☐

Sign:

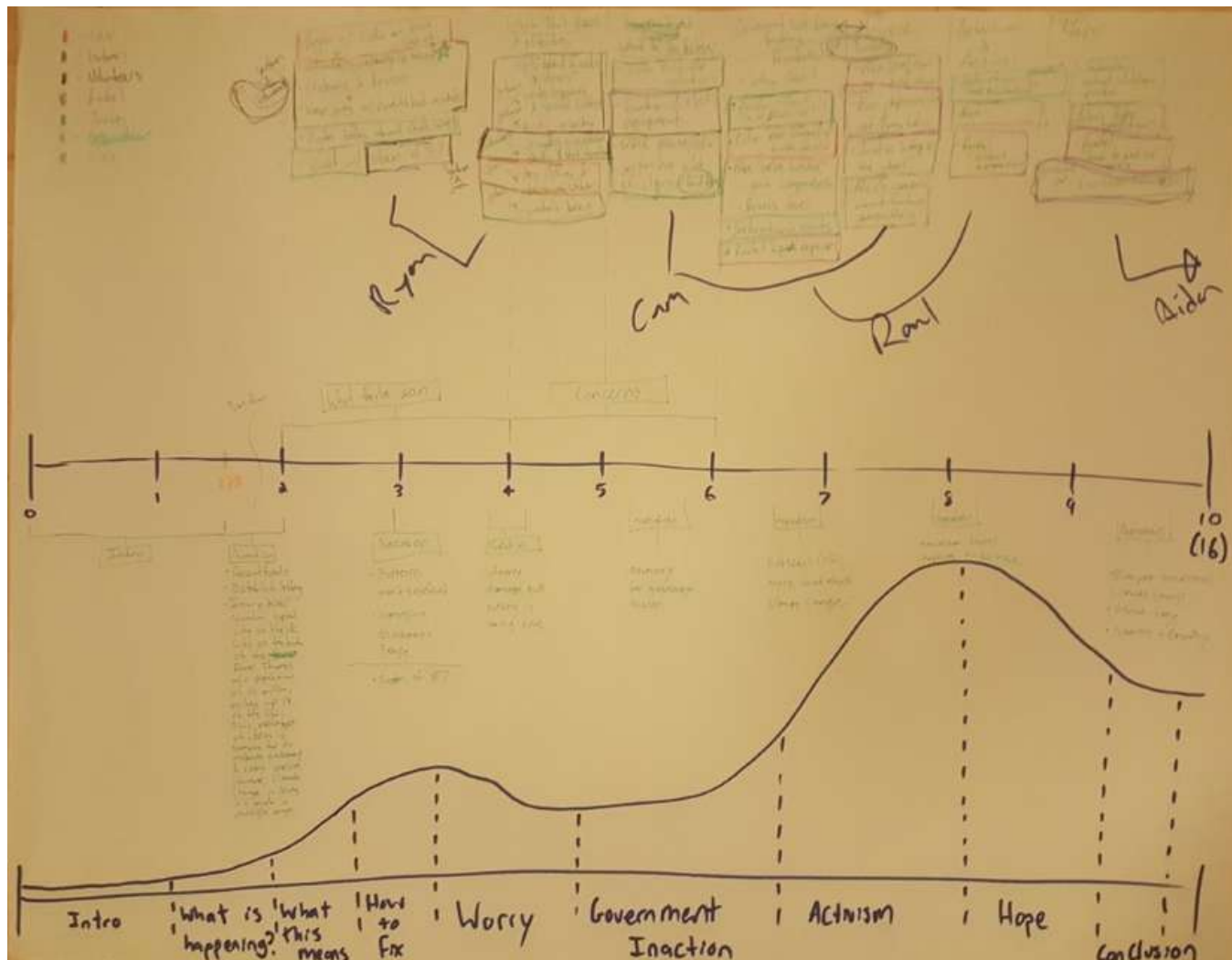
Print:

Date:

Appendix B: Project Schedule

Activity \ Time	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
B-Roll Filming							
Field Interviews							
Scheduled Interviews							
Storyboarding							
Post to Instagram							
Edit Single Interviews							
Edit Documentary							
Update Proposal							
Collect Findings							
Draft Report							
Update Report Format							
Finish Report							

Appendix C: Documentary Storyboard



Above is an image depicting the final storyboard used for our documentary. It was drawn out by hand. At the top, it details the order in which specific clips would appear in the documentary and who among the team would be editing which section. These clips are color-coated according to which individual interview they came from. Next, notes on narration between transitions are in the middle. On the bottom is the story arc and our thematic sections in order.

Appendix D: Climate Stories Links

1. **Colin Brightwell:** <https://global-lab.wpi.edu/2019/12/12/climate-change-stories/>
2. **Volunteer Gardeners:** <https://global-lab.wpi.edu/2019/12/12/climate-change-stories/>
3. **Justin Bere:** <https://global-lab.wpi.edu/2019/12/12/climate-change-stories/>
4. **Beckenham Place Park Gardeners:**
<https://global-lab.wpi.edu/2019/12/12/climate-change-stories/>
5. **Rachel Patteson:** <https://global-lab.wpi.edu/2019/12/12/climate-change-stories/>
6. **Alex Jelly:** <https://global-lab.wpi.edu/2019/12/12/climate-change-stories/>
7. **Sebastian Sandys:** <https://global-lab.wpi.edu/2019/12/12/climate-change-stories/>

Appendix E: Documentary Link

Storying Climate Change: London:

<https://global-lab.wpi.edu/2019/12/12/climate-change-stories/>