

**Witnessing Climate Trauma: An Investigation of the Emotional Distress Caused by  
Indirect Exposure to Climate Change Related Catastrophes**

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## **Introduction**

Climate change is widely known as a scary subject that many avoid thinking about, let alone taking a deeper dive into the literature and numerous studies done on the topic. The idea of our home dying in front of our eyes because of our own negative impact is a terrifying thought. This fear has created a lack of conversation around climate change in circles outside of the climate change activists and climate change deniers. This lack of conversation has led to gaps in data on the emotional effects climate change has on people, ranging from panic, to depression, to despair.

Literature on the emotional impacts of climate change commonly center around the general anxiety that comes from learning about it, or the trauma that comes from being directly exposed to the disastrous events it causes, such as fires or tropical storms. However, not much research has been done on the ways in which experiencing the catastrophes of climate change second-hand affect human emotion. Experiencing these catastrophes second-hand simply means witnessing the effects of climate change without being directly harmed by them. This could look like witnessing habitat loss of local species, or interacting with a coworker whose home was devastated by wildfires.

Through my research, I found literature relating to my assumption that personally witnessing the impacts of climate change, such as habitat loss and wildfires, causes emotional distress in the witnesses that culminate as Post-Traumatic Stress Disorder (PTSD), anxiety, and depression. All sources used in this study go toward supporting or disproving this hypothesis.

## Methods

Though scarce, some literature on the psyche of people who have witnessed the adverse effects of climate change does exist. All sources used here consider the effects one specific event caused by or exacerbated by climate change had on the people living close enough to the event to witness it and experience it second-hand. These sources originate from a variety of continents and cultures to maximize the universal application of this study and the possible solutions identified from it.

A study done by a group of scholars in California investigated the prevalence of symptoms of PTSD, anxiety, and depression in groups of individuals relating to the 2018 California wildfire. In *Differences in Interference Processing and Frontal Brain Function with Climate Trauma from California's Deadliest Wildfire*, individuals were split into three groups: those directly exposed to the fires, those indirectly exposed who only witnessed the fires but were not directly impacted, and those who were not exposed at all. Each individual was subjected to cognitive testing with synchronized electroencephalography (EEG) brain recordings to determine the neural impacts of recent climate trauma.

Grennan and her colleagues found that the individuals who were directly exposed to the California wildfire showed the greatest cognitive deficiency from their tests regarding processing speed. The indirectly exposed individuals also showed some cognitive deficiency in this area to a lesser extent than the individuals directly exposed, and the non-exposed individuals showed no deficiency in this area. However, the cognitive deficiency from tests regarding working memory and neural stimulus response showed to have no significant difference between the directly and indirectly exposed groups. The non-exposed groups showed average cognitive abilities for all three types of tests, indicating a large difference between the cognitive abilities of those recently

exposed to climate trauma, whether it be directly or indirectly, and those who have not recently been exposed to climate trauma (Grennan et al., 2023).

The findings of this study strongly point towards there being a correlation as well as causation between witnessing climate catastrophes and high indication of symptoms of PTSD, anxiety, and depression to the point of being nearly as significant as the results of being directly exposed to traumatic climate catastrophes. This study provides evidence of witnessing climate change to be traumatic to an extent greater than simply learning and knowing about the negative effects of climate change.

A similar study was conducted in Italy by a team of Italian scholars to analyze the mental health impacts of climate change in Italy. Italy is considered to be a climate change “hotspot” due to its variety of habitats and local climates subjecting it to numerous climate disasters, such as “heatwaves, floods, landslides, wildfires, sea-level rise, coastal erosion, droughts and water stress, biodiversity loss, ocean acidification, desertification, and ice melt and avalanches” (Massazza et al., 2022). In *Climate Change, Trauma and Mental Health in Italy: A Scoping Review*, Massazza and his team reviewed several studies with information regarding climate change and/or mental health in Italy with a specific focus on trauma and PTSD. They then extracted the relevant information from each study and pooled it all into a data chart to analyze the quantitative data on the relationship between climate change and mental health.

The synthesization of this data found a positive correlation between the number of suicides and the temperatures. As the mean temperature per month increased, the mean number of suicides per month also increased. With this correlation, it was also found that the hottest conditions led to the greatest increase in involuntary psychiatric admissions and emergency calls

regarding psychiatric conditions. There was also evidence to suggest that flooding in Italy correlated with higher rates of PTSD.

Though this study did not provide direct data on the correlation between witnessing climate catastrophe and the mental state of the witnessed, it did provide data on overall climate conditions of a country and the mental health states of the inhabitants of that country. The study did not specify whether the higher suicide rates and emergency care of psychiatric conditions were of people directly exposed to the climate catastrophes or indirectly exposed. However, because the studies all took place over the entire country of Italy rather than just the regions in which the climate catastrophes happened, it can be reasonably assumed that the increases of mental health issues were spread across people who were indirectly exposed as well as directly exposed to the climate catastrophes. With this assumption, the study provides strong evidence towards heightened suicide rates and emergency psychiatric events being correlated with witnessing the impacts of high heat on community members, and symptoms of PTSD with witnessing the disastrous events of flooding amongst the community.

One other study, conducted by Lisa Walpole and Wade Hadwen, investigated the mental health of the team in charge of maintaining the Great Barrier Reef (GBR). *Extreme Events, Loss, and Grief-An Evaluation of the Evolving Management of Climate Change Threats on the Great Barrier Reef* highlights the most significant impacts the GBR has faced in regards to the effects of climate change and the ways in which its maintenance team has had to combat these impacts to preserve the GBR. The most significant impact found was back-to-back coral bleaching several years in a row. With this in mind, Walpole and Hadwen looked into how the GBR maintenance team has had to reframe their maintenance plan and the mental health concerns they have been facing.

Walpole and Hadwen found that the GBR maintenance team faced environmental grief as a result of witnessing the decline of the GBR and the species it hosts. In their study, they showed that the GBR maintenance team had to come up with entirely new approaches to improve water quality and overall well being of the GBR due to the lowered morale that came as a result of witnessing the GBR's decline. Walpole and Hadwen investigated the implementation of the Kubler-Ross "Stages of Grief" model to the GBR maintenance team's response system as a way to increase morale and implement a response system that the team has high confidence in. They were encouraged to move through the five stages of grief to create the most effective plan. The team moved through the denial of the idea that some amount of loss was inevitable, then shifted to bargaining, where they acknowledged that change was bound to happen but refused to acknowledge that some of this change included loss. Finally, the team was able to accept that some amount of loss was inevitable, which allowed them to shift towards a more reasonable plan that accounts for that loss. This study showed how witnessing the decline of the GBR as a result of climate change catastrophe led to grief, a possible symptom of depression.

One of the least recognized yet most impacted communities of climate change is the Indigenous community in the United States. Indigenous peoples are some of the most impacted by climate change due to their reliance on the environment for food and their experience of ongoing systems of inequality. One study, *Indigenous Mental Health in a Changing Climate: A Systematic Scoping Review of the Global Literature*, looked into the impacts of climate change the Indigenous community faces that most other populations do not, then analyzed the mental toll these impacts take on Indigenous peoples.

This study found that the prevalence of climate related disasters such as storms and flooding were linked to mental health impacts such as depression, suicide and suicidal

tendencies, PTSD, and anxiety. The most negatively impactful in regards to the mental health of Indigenous peoples were changes in temperature and precipitation. This study did not specify if the declining mental health was of people who were directly exposed to climate change catastrophes or those who were indirectly exposed, but because this study spanned across multiple different Indigenous communities, many of which were not directly subjected to climate catastrophes, it is reasonable to assume that many of those who experienced decline in mental health were people who were indirectly exposed to climate catastrophe. This correlation of indirect exposure, or witnessing of, climate catastrophe and heightened rates of mental health issues points towards there being a causation where witnessing these events but not being directly exposed still leads to issues such as depression, anxiety, and PTSD.

In a slight shift, witnessing the negative effects of climate change can create a toll on mental health, but not necessarily due to the fear and grief associated with witnessing loss. Shermin de Silva and their team conducted a study on the habitat loss faced by elephants in Asia causing their odd migration patterns. They found that almost two-thirds of the available habitat for elephants in Asia was lost over the past few hundred years due to the increase of human use of the land and deforestation. The team of *Land-Use Change is Associated with Multi-Century Loss of Elephant Ecosystems in Asia* then investigated the ways in which the elephant migration has affected the mental health of the people in Asia by researching the encounters between elephants and people in Asia.

De Silva and their team discovered that as the cover in rainforest dropped, conflict between people and elephants rose. They found that elephants were being forced to migrate out of their usual habitats and into areas more inhabited by humans. With this new need to share space, people who had little experience with interacting with elephants responded to the new

dynamic with violence and attacked the elephants. They reported feeling stress from having to share resources and livelihoods with these unfamiliar animals. This study shows that empathy is not necessary for people to experience a toll on their mental health as a result of witnessing the negative impacts of climate change. Though the elephants are the ones directly impacted by climate change catastrophe, the people witnessing their habitat loss are also experiencing stress second-hand.

## **Discussion**

Debate about the “correct” way to feel about climate change has existed for years, ever since people realized that the human emotional response to learning about climate change affects our ability and likelihood to take climate action. Many people argue that it is important to feel the dread and grief that comes along with witnessing climate change catastrophe, because these emotions allow people to recognize there is an issue, and recognizing the issue is the first step in taking action. Others argue that grief leads to hopelessness, which promotes inaction, and the correct way is to feel hopeful so as not to be so drowned in sorrow that nothing is done.

The purpose of this research study is to identify the emotions people may feel as a result of climate change, and the events that lead them to feel those emotions. This research is not meant to persuade anyone to feel a certain way. It is only meant to identify the ways in which witnessing climate catastrophe can lead to anxiety, depression, and PTSD.

Rebecca Huntley, a social researcher, wrote an article as her response to this debate. *Stop Making Sense: Why it's Time to get Emotional about Climate Change* provides the reasons why bringing emotion into the discussion of climate change is important. Huntley writes that the climate change discussion is already filled with science, so throwing more science into the



discussion will not change any opinions or promote more action. Instead, she argues that the climate change discussion is an inherently emotional experience. Learning of the reactions people have to climate change is learning of their views on the world, which could help form better suited solutions for them. Huntley's idea is that the emotions one feels regarding climate change are not important. What is important is that emotions are felt, because that is what drives discussion and allows for solutions to be crafted. Validating all emotions prevents the polarization of the topic of climate change, which creates more productive conversations.

As found through this research study, strong emotions and mental health disorders can commonly be found as a result of witnessing climate change catastrophe. Understanding that these emotions are to be expected and focusing on validating these emotions as well as recognizing the prevalence of them allows people to have the space to take positive action.

In Iceland, the grief associated with losing a glacier was validated and allowed griever to have the space to feel their emotions, then take action to prevent further incidents like it from happening. Nylah Burton wrote an article titled *Iceland's Glacier Funeral Helped Activists Manage Their Climate Grief* on the funeral organized for the Okjokull glacier, Iceland's first glacier to completely melt from climate change. She analyzed how allowing people to have the space to mourn and share their grief motivated them to take action. Burton quotes mental health experts who say that having the space to mourn with others over a common cause gives them a sense of community, which is more likely to promote action than the feeling of being alone in a cause. The funeral also allowed people to move past grief and hopelessness and into the anger that drives climate action.

As mentioned earlier, Indigenous peoples are some of the most negatively impacted by climate change due to a multitude of reasons. Britt Wray conducted an interview with Olúfẹ́mi

Táíwò, an Assistant Professor of Philosophy at Georgetown University. In the interview, they delve into the undeniable fact that some communities are unable to protect themselves from climate change's negative effects in the same ways others are. This inequality exists amongst marginalized communities, such as Indigenous peoples or minority races within the United States and other privileged countries. Yet, it is mainly white people who are contributing to the climate change discussion, because they are the ones with the resources to have their voice heard and are most likely to face the least of the impacts of climate change.

Wray's interview shows that climate change and the emotions around it are inevitable. However, providing space for everyone to voice their feelings regarding the issue allows for the discussion to include more diverse views, and thus more probability of a universal solution to be found.

## **Conclusion**

Climate change is an emotional subject, and as found through this research, it does not require direct exposure to feel strong emotions around it. Simply witnessing climate catastrophe is enough to cause anxiety, depression, and PTSD to an extent possibly as bad as being directly exposed to those catastrophes.

Due to the inherently emotional experience of the climate change discussion, it is important to acknowledge the variety of emotions one may feel and allow the discussion to provide space for these emotions to be discussed. It is also important to encourage anyone to join in on these conversations, as it is currently mainly the ones who are privileged enough to have their life secure enough to only need to focus on climate change that are speaking. Though people of marginalized communities are often focusing on other issues they face, climate change

affects everyone, especially marginalized people. People with privilege should have the responsibility of creating space for the voices of people of marginalized groups to speak up about the issues that affect them, even if they are not the most pressing issues in their minds. The mental toll climate change takes on the human psyche is far too drastic to exclude anyone from the conversation. Climate change is caused by people, affects people, and must be solved by people.

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