

# Eco-Anxiety: Mental Health Impacts of Environmental Disasters and Climate Change

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## *Introduction*

Research into the direct impacts of a rapidly changing climate on human health has evolved enormously over the last decade. Nonetheless, the toll of climate change on our mental health has been researched far less.

This paper seeks to explore how climate change and environmental disasters may cause psychological problems. Although mental health consequences from a changing environment can manifest from many different challenges, and into many forms, this paper will focus on three areas: stress, anxiety and suicide. It supports the view that stress-related illnesses, especially post-traumatic stress disorder (PTSD), from those close to extreme weather events have risen dramatically over the last decade or so, especially in the aftermath of disasters such as hurricanes and wildfires.

Moreover, it also supports the view that the emergence of a new phenomenon called eco-anxiety is, despite diagnostic difficulties, a cause of concern for patients, with indigenous groups on the frontline of climate change facing severe mental health challenges. Lastly, the rise in suicides – both directly and indirectly - associated with a changing climate is explored. Although recent studies have supported a link between increased suicide rates in a warmer climate, more research on the subject is required.

## *Environmental Degradation as a Stress Factor*

The effects of stress on health are well understood, with common dangers including high blood pressure, heart disease, obesity, and diabetes. Nonetheless, researchers are still exploring the ways in which climate change contributes to stress levels. An article by The Union of Concerned Scientists notes that the physical toll from climate catastrophes is often far less than the psychological toll. They noted that “people coping with severe weather conditions can experience serious mental health symptoms, including post-traumatic stress, depression and anxiety.”<sup>1</sup>

This is not surprising. When people lose their homes, businesses and possessions or potentially witness the loss of life, the resulting impact on the psyche is likely to be traumatic. Psychologist Carl F. Weems noted that “the more severe and intense your exposure to traumatic experiences during a disaster, the more likely that you will have severe mental health symptoms.”<sup>2</sup> Other research also suggests that between 25 and 50 per cent of people experiencing weather disasters may suffer from mental health effects.<sup>3</sup>

Studies on the impact of Hurricane Katrina, for example, found no fall in cases of post-traumatic stress disorder symptoms after two years.<sup>4</sup> This conclusion is supported by a 2019 paper that found that exposure to disaster experiences is a contributor to post-disaster mental health for those living in the Gulf Coast region of the United States – an area frequently exposed to hurricanes.<sup>5</sup> Such results therefore pose suggestions for potential policy changes. Given the strain on mental health of environmental disasters, post-disaster counselling for victims should be considered. Although such a programme may be expensive, it has the potential to limit further mental health illnesses down the line.

Earlier this year, The Rockefeller Foundation released a report on the link between flooding and mental health. They found that a multitude of confounding factors contributed to the extent of mental health disorders in the wake of extreme weather, these included levels of preparedness, community support and degree of exposure.<sup>6</sup>

If possible, being evacuated before extreme weather in anticipation of a disaster can greatly reduce symptoms. Moreover, moving far away from the region to avoid experiencing the full impact will help. This is much easier said than done, however. Many people are unwilling to evacuate their homes until the last minute due to fear of losing their possessions.

Nonetheless, storms are not the only problem. The American Psychological Association (APA) reported that survivors of human-enhanced disasters are experiencing enormous increases in depression, PTSD, anxiety and suicide.<sup>7</sup> The rise in wildfires illustrates this. A 2007 study on psychiatric disorders suffered after the California wildfires in 2003 concluded that among respondents – those that had sought emergency relief services - to a survey three months afterwards, 33 per cent showed evidence of major depression and 24 per cent exhibited PTSD.<sup>8</sup>

## *The Rise of Eco-Anxiety*

Although eco-anxiety is not currently considered a medical condition, the APA defined it as a “chronic fear of environmental doom.” The difficulty in categorising such a condition comes from the many ways in which it can be expressed. Some people have everyday episodes of grief and despair, others exhibit sudden panic attacks while some have even made the big decision to not have children because they believe it may be unethical due to future quality of life.

Regardless of its expression, eco-anxiety has sustained effects on emotional wellbeing and prevalence has increased since the eye-opening Intergovernmental Panel on Climate Change report was released in October 2018. The Yale Program on Climate Change Communications found that 70 per cent of Americans are “worried” about climate change, with 59 per cent feeling “helpless.”<sup>9</sup> These numbers reflect psychologists’ concerns about a dramatic rise in the number of patients displaying such symptoms. This has resulted in calls for a greater focus on understanding the links between climate change and mental health.

One of the best-studied areas in the eco-anxiety field of study is that of indigenous groups, especially amongst the Inuit and Sami populations. These groups are often reliant on the land, sea, and Arctic ice to continue their traditional lives and are therefore on the frontlines of a changing climate.

The Sami have inhabited the Arctic region of Northern Europe for millennia. Their entire culture and identity is based upon self-sufficiency, largely due to the herding of reindeer. They move between seasonal grazing grounds, but climate change is increasingly threatening this way of life. The Arctic is warming at almost twice the rate of the global average, causing many problems. Firstly, precipitation is, more and more often, falling as rain rather than snow, causing the formation of thick ice and making it very difficult for reindeer to reach the food beneath. In the space of a few days in 2013, over 60,000 reindeer died.<sup>10</sup> Poor nutrition

for female reindeer leads to lower chances of survival for their calves. This is disastrous for the Sami as they not only provide their income but also their entire way of life.

This creates enormous pressure on the legal framework that protects the Sami. A 2019 report by the Environmental Justice Foundation (EJF) notes that laws protecting the rights of the Sami as indigenous people state that reindeer herding must be practiced. Therefore, not only their livelihoods but also their basic human rights are at risk.<sup>11</sup> The same report added that these issues - alongside a deteriorating ecosystem, rapidly disappearing land, melting permafrost and the threat of cultural loss - are causing mental health issues in previously unseen numbers. "Half of Sami adults in Sweden suffer from anxiety and depression, and one in three young indigenous reindeer herders have contemplated suicide."<sup>12</sup>

A similar story takes place in the Inuit nation. The APA studied five Inuit communities in Canada and discovered several consequences for group and individual well-being. Many reported the increased use of drugs and alcohol to fill the empty time that would normally be used for land-based activities.<sup>13</sup> Moreover, losing control over the traditions that have defined their lives for centuries has led to a loss in cultural identity and feelings of low self-worth. Many cite climate change as compounding existing stressors by "removing a source of healing, cultural strength, food security and autonomy."<sup>14</sup>

In Greenland, residents are struggling to cope with changes to the climate that are dissolving their uniquely traditional way of life. The Greenlandic Perspectives Survey found that 92 per cent of respondents accepted that climate change is happening with 76 per cent claiming to have felt the effects personally, causing them more stress and anxiety.<sup>15</sup>

## *Suicide Rates in a Warming World*

Links between suicide and changes in weather have existed since the 1880s when Italian physician Enrico Morselli compiled data from twenty-eight European countries and found higher rates of suicide in the summer months. He noted the regularity of suicide statistics was "*too great for it to be attributed to chance of the human will.*"<sup>16</sup>

More recently, a heatwave in the UK during the summer of 1995 led to a 46.9 per cent increase in suicide.<sup>17</sup> Every 1-degree increase in mean temperature above 18C was associated with a 4-5 per cent rise.<sup>18</sup> Similarly, a study by Helama et al (2013) studied death records and temperature variations in Finland from 1751 to 2008 and found that temperature variability explained more than 60 per cent total variance up until the beginning of a national suicide prevention program.<sup>19</sup>

Naturally, there are considerable difficulties in establishing direct causality. Several other factors also contribute to suicide, for example, socio-economic issues such as financial security and relationship stressors as well as previous mental health difficulties. Such studies have suffered considerable obstacles in methodology such as varying social patterns and day length that had made a direct link to temperature difficult to establish.

To tackle these issues, a team of researchers examined decades of temperature and suicide data as well as scanning over half a billion social media updates to look for negative language associated with mental well-being. The researchers concluded that if a month is one degree

Celsius warmer than average, the suicide rate will increase by 0.7 per cent in the U.S and 2.1 per cent in Mexico. It is believed that up to 26,000 more deaths could occur in the US if warming continues at current rates, this is comparable to the impact of economic recessions, suicide prevention programmes or gun restriction laws.<sup>20</sup>

This is different from the studies mentioned previously for two reasons. Firstly, this paper makes a causative claim. Even when factoring in the influences of poverty, gender, weapons possession and other socio-economic issues, the study found a small, statistically significant correlation. Secondly, it finds that this holds everywhere in the two countries studied, regardless of whether it is a hot town in Mexico or a cold town in the U.S.<sup>21</sup>

Elsewhere, temperatures and weather extremes have more indirect effects on suicide. In communities where agriculture makes up the vast majority of income, links to suicide are strong. India, for its part, has witnessed a dramatic rise in suicides. A recent study found over 60,000 suicide cases in India over the last 30 years.<sup>22</sup> Poor harvests as a result of climate vulnerability lead farmers to borrow money to replant, with a guarantee of repayment following the new harvest. Climate fluctuations, however, can result in multiple failed years, creating a cycle of borrowing. Their inability to sustain a livelihood, combined with growing debt, leads many farmers to take their own life. Reports in India newspapers have highlighted the issue. The Hindustan Times identified 1309 suicides in three years in a traditionally prosperous farming region in the Punjab. While it is difficult to establish temperature as a direct cause, many are pointing to it as a major contributing factor.

## *Conclusion*

Environmental disasters and a rapidly changing climate have serious impacts on individuals and communities alike. Trauma from disasters, chronic and persistent distress about the state of the world and increased incidence of suicide are all being reported at an alarming rate.

In a world where climate change dialogue has, rightly, become inescapable and the importance of mental health conversations is at an all-time high, it makes sense to continue researching the two together. Climate change is rapidly becoming a burden on global health systems, not just from the physical injuries associated with environmental disasters but also the psychological toll on those on the frontline.

When accounting for the costs of post-disasters as well as for climate change mitigation and adaptation strategies at sub-national and national levels, it would be advisable to factor in the potential mental health difficulties that many people face. It is paramount that we continue to further our understanding of how climate change weighs on our psyche, otherwise, we will potentially face a mental health crisis.

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## Notes

<sup>1</sup> Union of Concerned Scientists. 2010. *Climate Change and Mental Health*. [Online]. Available at: [https://www.ucsusa.org/global\\_warming/science\\_and\\_impacts/impacts/climate-change-and-mental-health.html](https://www.ucsusa.org/global_warming/science_and_impacts/impacts/climate-change-and-mental-health.html)

<sup>2</sup> Ibid

<sup>3</sup> Ibid

<sup>4</sup> Ibid

<sup>5</sup> Hansel, T., Osofsky, H., Speier, A., & Osofsky, J. (2019). *Postdisaster recovery and resilience: The mediating influences of mental health and environmental quality of life*. *Traumatology*. Advance online publication.

<sup>6</sup> The Rockefeller Foundation. 2019. *Climate Change, Flooding and Mental Health*. Available at: <https://www.planetaryhealth.ox.ac.uk/wp-content/uploads/sites/7/2019/04/Climate-Change-Flooding-and-Mental-Health-2019.pdf>

<sup>7</sup> The Guardian. August 26 2019. After the wildfire: treating the mental health crisis triggered by climate change. [Online]. Available at: <https://www.theguardian.com/world/2019/aug/26/climate-change-mental-health-wildfires-santa-rosa>

<sup>8</sup> Marshall, G; Schell, T; Elliott, M; Rayburn, N; Jaycox, L. 2007. *Psychiatric Disorders Among Adults Seeking Emergency Disaster Assistance After a Wildland-Urban Interface Fire*. Psychiatric Services. Rand Corporation. Available at: [https://www.rand.org/pubs/external\\_publications/EP20070414.html](https://www.rand.org/pubs/external_publications/EP20070414.html)

<sup>9</sup> Yale Program on Climate Change Communication. 2019. Americans are Increasingly ‘Alarmed’ About Global Warming. Available at: <https://climatecommunication.yale.edu/publications/americans-are-increasingly-alarmed-about-global-warming/>

<sup>10</sup> Huffington Post. 2016. *More Than 60,000 Reindeer Starved to Death After Global Warming Cut Off Food Supply*. Available at: [https://www.huffingtonpost.co.uk/entry/siberian-reindeer-global-warming\\_uk\\_582c3e89e4b07783e392e0eb?guccounter=1&guce\\_referrer=aHR0cHM6Ly93d3cuZ29vZ2xILmNvbS8&guce\\_referrer\\_sig=AQAAAFkLd0esCGs5n0G1Gz4AtGfe08bitBkPnTpe\\_F2lcNtWIacauS6Kz7pPNHf6gGe1jihNMN049TvzoGLipq6sEqUwUdyLYdgI1z0gZUu-q94yOs2igI06PuYgwfAJbvp-BaaQpJMARq7pLCdPrP7U\\_56leiFGaaqrCNL1qPF2WC5V](https://www.huffingtonpost.co.uk/entry/siberian-reindeer-global-warming_uk_582c3e89e4b07783e392e0eb?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xILmNvbS8&guce_referrer_sig=AQAAAFkLd0esCGs5n0G1Gz4AtGfe08bitBkPnTpe_F2lcNtWIacauS6Kz7pPNHf6gGe1jihNMN049TvzoGLipq6sEqUwUdyLYdgI1z0gZUu-q94yOs2igI06PuYgwfAJbvp-BaaQpJMARq7pLCdPrP7U_56leiFGaaqrCNL1qPF2WC5V)

<sup>11</sup> Environmental Justice Foundation. 2019. *Rights at Risk: Arctic Climate Change and the Threat to Sami Culture*. Available at: <https://ejfoundation.org//resources/downloads/EJF-Sami-briefing-2019-final-1.pdf>

<sup>12</sup> Ibid

<sup>13</sup> American Psychological Association, EcoAmerica & Climate for Health. March 2017. *Mental Health and Our Changing Climate: Impacts, Implications and Guidance*. Available at: [https://www.apa.org/images/mental-health-climate\\_tcm7-215704.pdf](https://www.apa.org/images/mental-health-climate_tcm7-215704.pdf)

<sup>14</sup> American Psychological Association, EcoAmerica & Climate for Health. March 2017. *Mental Health and Our Changing Climate: Impacts, Implications and Guidance*. Available at: [https://www.apa.org/images/mental-health-climate\\_tcm7-215704.pdf](https://www.apa.org/images/mental-health-climate_tcm7-215704.pdf)

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<sup>15</sup> The Guardian. 2019. *Life on thin ice: Mental health at the heart of the climate crisis*. Available at <https://www.theguardian.com/society/ng-interactive/2019/aug/12/life-on-thin-ice-mental-health-at-the-heart-of-the-climate-crisis>

<sup>16</sup> The Atlantic. 2018. *Climate Change May Cause 26,000 More U.S Suicides by 2050*. Available at: <https://www.theatlantic.com/science/archive/2018/07/high-temperatures-cause-suicide-rates-to-increase/565826/>

<sup>17</sup> The Royal College of Psychiatrists. 2018. *Climate Change: A Decade of Difference*. Available at: <https://www.rcpsych.ac.uk/news-and-features/blogs/detail/sustainability-blog/2018/12/18/climate-change-a-decade-of-difference>

<sup>18</sup> Ibid

<sup>19</sup> Helama, S; Holopainen, J; Partnonen, T. 2013. *Temperature-associated suicide mortality: contrasting roles of climatic warming and the suicide prevention program in Finland*. Environmental Health and Preventative Medicine. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3773099/>

<sup>20</sup> Burke, M; Gonzalez, F; Baylis, P; Heft-Neal, S; Baysan, C; Basu, S & Hsiang, S. 2018. *Higher Temperatures Increase Suicide Rates in the United States and Mexico*. Nature Climate Change. Available at: <https://www.nature.com/articles/s41558-018-0222-x>

<sup>21</sup> Ibid

<sup>22</sup> Safi, M., 2017. *Suicides of nearly 60,000 Indian farmers linked to climate change, study claims*. [Online] Available at: <https://www.theguardian.com/environment/2017/jul/31/suicides-of-nearly-60000-indian-farmers-linked-to-climate-change-study-claims>