

## OPINION

# Mental health in polar scientists: Navigating the emotional landscape of climate change

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## 1. Introduction

“So is climate change real?”

“Is it caused by humans?”

The sinking feeling caused by these innocuous questions is likely familiar to many climate scientists. They are questions that we are asked on strikingly regular basis, and that—knowingly or unknowingly—cast doubt on the fundamental scientific consensus in our community. The particular irony of this occasion was that it occurred in Ny Ålesund, a renowned research station in the high Arctic, at the height of the melt season by some well-meaning American tourists inquiring about our research, as we unpacked our equipment in t-shirts under the bright 24-hour sunshine. Moments like this bring into sharp relief the disconnection of polar scientists witnessing and researching the climate crisis and the lack of understanding or awareness within the general public.

For polar scientists, the spectre of the climate crisis looms large over their field. For most early career researchers (ECRs), it has always been there, as the focus of projects, a perennial focus in grant applications, conferences, and introductions. This saturation extends beyond the field into social interaction, media, lifestyle and self-perception. ‘Eco-anxiety,’ ‘ecological grief’ and ‘climate trauma’ are recent terms being coined to explain and define the uptick of worsening mental health associated with these challenges [1]. Psychological, social, and neural studies warn of the possible long-term effects, with the Intergovernmental Panel on Climate Change (IPCC) and World Health Organization (WHO) identifying mental health and wellbeing as vulnerable within this context [2, 3]. However, methodologies to address mental health consequences are still underrepresented and discussed within the academic circles most affected [4].

## 2. Media & communication

Despite widespread knowledge of the urgency of the climate crisis, communication surrounding the issue often feels ineffective, especially in the face of government inaction. The mainstream media’s search for ‘balance’ can include offering a platform to climate deniers, posing a challenge for public education. Fair representation surely should not perpetuate misinformation and misrepresent the scientific consensus.

With the mixture of rhetoric and blame thrown about in the media, it often falls to scientists who have seen the evidence first hand to try and communicate the truth. Friends, family, and



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acquaintances ask questions, hoping for an answer they can trust and advice about what they can do to 'save the planet.' Engaging in these conversations can create a unique form of pressure, requiring not only advocacy for change but also a demonstration of personal commitment, aligning words with actions to avoid the perception of hypocrisy. This may manifest through adopting a vegetarian diet, avoiding short car journeys, or a range of other decisions. We should consider it affects young researchers sitting at home, watching the news and attempting to change their lifestyle, to hear that the foundation of their research and expertise is being questioned so publicly by those in power.

### 3. Apathy or activism?

Two schools of thought seem to dominate the field when it comes to guidance from senior scientists: apathy or activism. Apathy often feels the easiest route considering the emotional, financial, social, and temporal burden that comes as the price tag of activism. The activism route is made harder by the fact that communication and lifestyle choices cannot always be extended to research environments and the professional workspace. But as the climate crisis intensifies, apathy is an unrealistic attitude to take, with the impacts of climate change already extreme and far reaching [5].

Efforts to justify each research-related activity in terms of carbon emissions can lead to forgoing opportunities that require global travel, or grappling with the cost of more environmentally conscious choices. Practical concerns about laboratory work that depend on the use of plastic consumables or high energy consumption can be easier to talk about with colleagues and supervisors, but a lack of demonstrable progress on these issues translates to a cognitive dissonance that fuels a sense of personal responsibility and helplessness.

### 4. Personal perspective

The negative impacts on the mental health of young people caused by the climate crisis have not gone unnoticed. Various initiatives have sprung up to try and help mitigate this wave of sadness with a trend away from the scientific towards the artistic [6].

University initiatives like 'Resilience through Nature' or the 'Climate Lab' seek to connect ECRs and climate scientists worldwide, to give a safe space to discuss eco-anxiety without jeopardising professionalism [7, 8]. Within climate-affected scientific communities there is a tacit acknowledgment that whilst we are all unhappy about it, we are not always comfortable discussing how we are coping with the situation at work. Dedicated spaces like this are therefore increasingly popular.

Discussions in these safe spaces designed to explore emotion have identified a need to look positively into the future [9]. Spending time in nature is another well-documented strategy for improving well-being, present in cultural practices around the world. Those of us who have visited the Arctic or Antarctic can attest to the therapeutic quality of those experiences [10].

In Svalbard, we were joined briefly by the Poet Laureate of the United Kingdom, Simon Armitage. The poem he wrote about that day on the glacier communicates how the Arctic felt, rather than what it was:

*I was too late.  
Looking up from the milky pool  
I saw the whiteness in retreat,  
the bedraggled hem of the bridal train*

*heading into the heights  
towards deeper winter and truer north,  
trailing a stony path' [11].*

Artistic expression, and reframing experiences through a non-scientific lens, can be cathartic and promote healthy ways of processing ecological grief. Further efforts aimed at creating hope and a galvanised vision for a proactively planet-friendly future are good starting points for both personal and policy-based change.

## 5. Conclusion

Polar scientists have a unique view of our changing planet, and the impact this view has on our wellbeing is often overlooked. It is important to recognise this, and how it feeds into future research. There are many approaches to navigating the emotional landscape around the climate crisis, and there is no one-size-fits-all solution. By acknowledging both the challenges and joys in our research, we can focus on bringing both positivity and innovation to contribute to a more nuanced understanding of the intricate relationship between scientific research and personal well-being.

## Author Contributions

**Conceptualization:** Madeleine Lewis.

**Investigation:** Madeleine Lewis.

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## References

1. Cunsolo A, Ellis NR. Ecological grief as a mental health response to climate change-related loss. *Nature Climate Change*. 2018 Apr 3; 8(4):275–81.
2. Intergovernmental Panel on Climate Change (IPCC). Health, Wellbeing and the Changing Structure of Communities. *Climate Change 2022 –Impacts, Adaptation and Vulnerability*. 2023 Jun 29;1041–170.
3. Mental health and Climate Change: Policy Brief (WHO). [cited 2023 Dec 1]. Available from: <https://www.who.int/publications/i/item/9789240045125>
4. Cianconi P, Betrò S, Janiri L. The Impact of Climate Change on Mental Health: A Systematic Descriptive Review. *Front Psychiatry*. 2020 Mar 6; 11:490206. <https://doi.org/10.3389/fpsy.2020.00074> PMID: 32210846
5. Charlson F, Ali S, Benmarhnia T, Pearl M, Massazza A, Augustinavicius J, et al. Climate Change and Mental Health: A Scoping Review. *Int J Environ Res Public Health*. 2021 May 1 [cited 2023 Dec 1]; 18(9):4486. Available from: /pmc/articles/PMC8122895/ <https://doi.org/10.3390/ijerph18094486> PMID: 33922573
6. Dodds J. The psychology of climate anxiety. *BJPsych Bull*. 2021 Aug [cited 2023 Dec 1]; 45(4):222. Available from: /pmc/articles/PMC8499625/ <https://doi.org/10.1192/bjb.2021.18> PMID: 34006345
7. Laity A, Kuh V, Bes M, Meller B, Kareem R, Hutchings A. Resilience Through Nature. United Kingdom: Youtube, uploaded by University of Bristol; 2023 [cited 2023 Nov 17]. Available from: [https://www.youtube.com/watch?v=J5q0vi2GtGw&ab\\_channel=UniversityofBristol](https://www.youtube.com/watch?v=J5q0vi2GtGw&ab_channel=UniversityofBristol)
8. Bohata K, Elias O, Mabbett I, Murray T, Nuuttila H, Pigott A, et al. Climate Lab: Seeing and feeling the climate crisis. University of Swansea. 2023 [cited 2023 Nov 7]. Available from: <https://climatelab.swansea.ac.uk>

9. Bellehumeur CR, Bilodeau C, Kam C. Integrating positive psychology and spirituality in the context of climate change. *Front Psychol.* 2022 Sep 9; 13:970362. <https://doi.org/10.3389/fpsyg.2022.970362> PMID: [36160510](https://pubmed.ncbi.nlm.nih.gov/36160510/)
10. Browning MHEM, Rigolon A, McAnirlin O, Yoon H. Where greenspace matters most: A systematic review of urbanicity, greenspace, and physical health. *Landscape and Urban Planning.* 2022 Jan 1; 217:104233.
11. Armitage S. 'Washy clouds and a weepy sky floating upside down': Simon Armitage's Arctic expedition. *The Guardian.* 2023 Oct 7;51–2.