



Entangled climate risks:

Interactions between permafrost thaw and wildfires

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February 2025

The literature on wildfires and their effect on permafrost thaw and permafrost carbon feedback in a time of accelerating climate change reveals that these interconnected climate risks are intensifying, and yet their interconnections remain poorly understood. These interactions—which threaten to push the global climate system into a dangerous feedback loop—are underrepresented or missing entirely from many Earth system models, leaving international leaders to make policy based on inaccurate greenhouse gas emission calculations and carbon budgets. These gaps in knowledge and understanding suggest an urgent need for better information, including the standardization of sampling and observation protocols, better models, and better data to inform those models.

In addition to uncovering a general need for more collaboration among researchers and policymakers, this survey of the latest permafrost and wildfire research further reveals a clear scientific consensus that, even without a comprehensive understanding of the growing risk of fire on permafrost thaw and permafrost carbon feedback as the climate warms, the dangers are clear enough to indicate that mitigative action—targeting not only global emissions but also permafrost thaw and wildfires more directly—is urgent and necessary.

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