

How resilient are peatland permafrost landforms along the Labrador coast?



Uncrewed aerial vehicle (UAV) surveys were flown over 20 peatlands along the Labrador coast to **evaluate the resilience** of permafrost to climate change.

Palsas and **peat plateaus** are permafrost landforms recognizable by their elevated lichen-covered surfaces.



The unique appearance, height and shape of peatland permafrost makes it possible to map them using UAVs.

Resilience of permafrost landforms to thaw were assessed according to:



How much **area** the landform covered in the peatland



How **fragmented** the landform was



How much **ground ice** is estimated to be beneath each landform

The **tallest palsas** were observed at the northernmost site

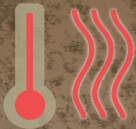


...while the **least fragmented peat plateau** was found on an outer island in southern Labrador.



All other peatlands had short or highly fragmented landforms, suggesting **low resilience** to thaw.

Evidence of ground ice melt (known as "thermokarst") at the sites includes **peat cracking** and **ponding** around the landforms.



Why is this study important?

All investigated peatlands showed signs of vulnerability to warming.
Thawing permafrost may impact culturally and ecologically important plant and wildlife species.

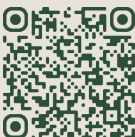


What can be done to keep these ecosystems intact?

Reduce disturbances (snowmobile, ATV, infrastructure development) to areas where peatland permafrost still exists.



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