

The Yedoma Region: A Synthesis of Circum-Arctic Distribution and Thickness

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The Yedoma Action Group aimed to synthesize existing information and generate new data products on the circum-arctic distribution of Yedoma permafrost. Due to their very high excess ice content, Yedoma deposits are especially prone to degradation under projected future climate scenarios in Siberia, Alaska and Yukon. Thawing of organic rich Yedoma releases greenhouse gases, which is contributing to climate change.

Recently, we finalised the last deliverables by guest editing a special issue in the open access journal *Frontiers in Earth Science* entitled “*Yedoma Permafrost Landscapes as Past Archives, Present and Future Change Areas*”. This collection features 26 papers highlighting various research findings and summarizing some current knowledge on Yedoma permafrost, including:

• Shur, Y., *et al.* (2021). Yedoma Permafrost Genesis: Over 150 Years of Mystery and Controversy. *Frontiers in Earth Science*. DOI: [10.3389/feart.2021.757891](https://doi.org/10.3389/feart.2021.757891).

- Strauss, J. *et al.* (2021). Circum-Arctic Map of the Yedoma Permafrost Domain. *Frontiers in Earth Science*. DOI: [10.3389/feart.2021.758360](https://doi.org/10.3389/feart.2021.758360).

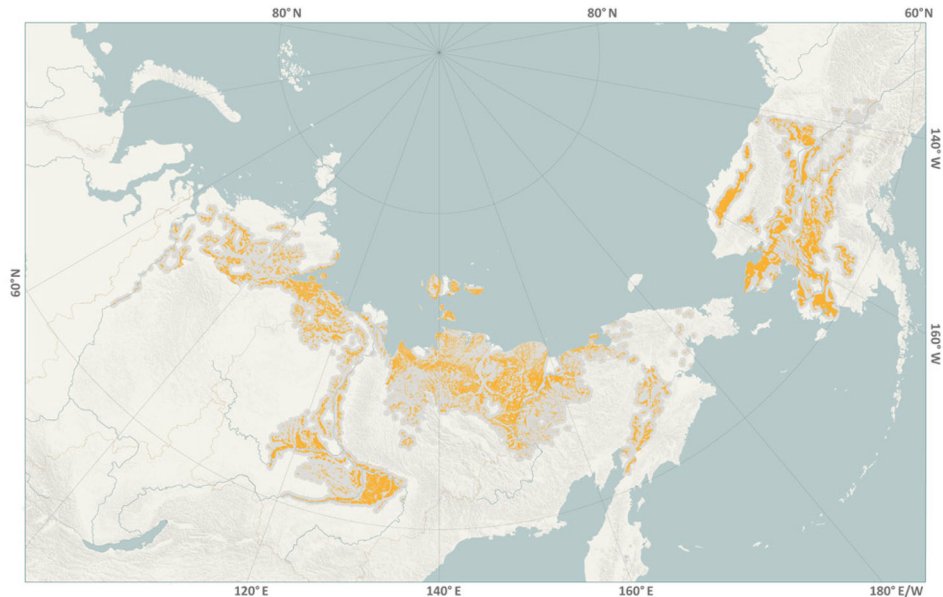
The first paper summarizes the long history of Yedoma research to explain the phenomenon, starting from the early 1800 until today’s accepted hypotheses. The second paper outlined the substantial spatial extent of late Pleistocene Yedoma deposits in our paper. Moreover,



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we created a unique pan-Arctic dataset including confidence estimates. We found that the current pan-Arctic Yedoma domain covers approximately 2,587,000 km², from which 480,000 km² are covered by undisturbed Yedoma deposits. All datasets are freely available and downloadable from the [Arctic Permafrost Geospatial Centre \(APGC\)](#) in GIS-ready shapefile format and can also be directly viewed and interacted with online in a [webGIS](#).

We want to thank all the Action Group members for making this effort a great success.



Yedoma Northern Hemisphere Distribution ([Strauss *et al.*, 2021](#)).