

Data show Greenland's ice shelves have lost more than a third of their volume since 1978

November 7 2023



The Zachariae Isstrøm glacier in 2016, discharging several kilometer-long icebergs into the ocean. The melting of platforms in North Greenland could make a significant contribution to rising sea levels. Credit: Romain Millan

The largest floating ice shelves in the polar ice sheet have lost more than

a third of their volume since 1978. In a study [published](#) on Nov. 7 in *Nature Communications*, scientists from the CNRS, alongside their Danish and American colleagues, have established that most of this thinning is due to the rise in surrounding ocean temperatures, which causes the glaciers' floating extensions to melt.

Until now, the glaciers in this region were considered to be stable, unlike more sensitive areas of the polar ice cap, which began to weaken in the mid-1980s.

Located in North Greenland, these ice shelves play an essential role in regulating the amount of ice discharged into the ocean by acting as huge frozen "dams." Although Greenland is already responsible for 17% of the current rise in sea levels, any weakening of these barriers could lead to an increase in the amount of ice released, accelerating further rises in the water level.

These results were obtained using field observations, aerial photography and [satellite data](#), combined with regional climate models.

More information: Romain Millan, Rapid disintegration and weakening of ice shelves in North Greenland, *Nature Communications* (2023). [DOI: 10.1038/s41467-023-42198-2](https://doi.org/10.1038/s41467-023-42198-2).
www.nature.com/articles/s41467-023-42198-2

Provided by CNRS

Citation: Data show Greenland's ice shelves have lost more than a third of their volume since 1978 (2023, November 7) retrieved 27 April 2024 from <https://phys.org/news/2023-11-greenland-ice-shelves-lost-volume.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.