

# Geological Survey of Denmark and Greenland

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## Solid ice discharge from the Greenland Ice Sheet

The objective of this work is to calculate solid ice discharge from the Greenland Ice Sheet on weekly scales using an automated and reproducible procedure. The work is part of PROMICE – Programme for Monitoring the Greenland Ice Sheet. The next step is to expand this to estimating the total ice sheet mass balance.

Solid ice discharge at all Greenland Ice Sheet outlet glaciers is calculated using a combination of ice velocity maps, bed topography, surface elevation and surface elevation change. Fig. 1 shows the discharge gates that are located automatically using surface ice-velocity map. Fig. 2 shows the total solid ice discharge from the ice sheet since 1986 to present. The timeseries is updated continuously as new data become available. Long time series of solid ice discharge are important for researchers as well as policymakers.

Data is available from [www.promice.dk](http://www.promice.dk)

### Reference:

Mankoff, K. D., et al. Greenland Ice Sheet solid ice discharge from 1986 through 2017, Earth Syst. Sci. Data, 11, 769–786, <https://doi.org/10.5194/essd-11-769-2019>, 2019

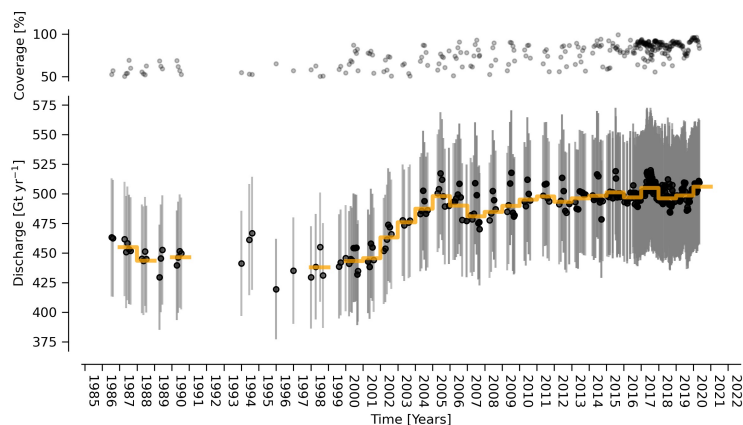


Figure 2. Time series of total solid ice discharge

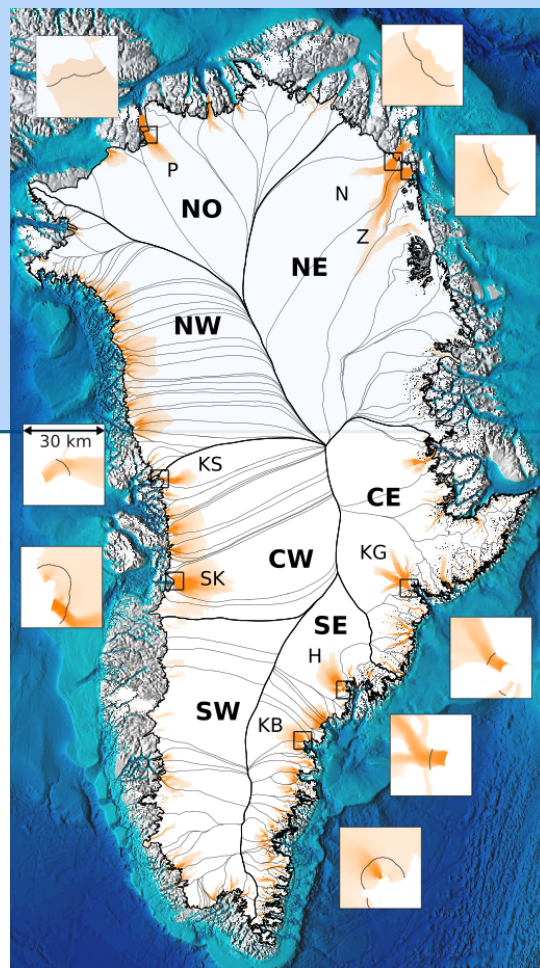


Figure 1. Ice discharge map for the Greenland Ice Sheet. The imaggettes show discharge estimates for selected gates.



**PROMICE**  
Programme for Monitoring of the Greenland Ice Sheet

