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Greenland fjord productivity under climate change

multiproxy late-Holocene records from two contrasting fjord systems

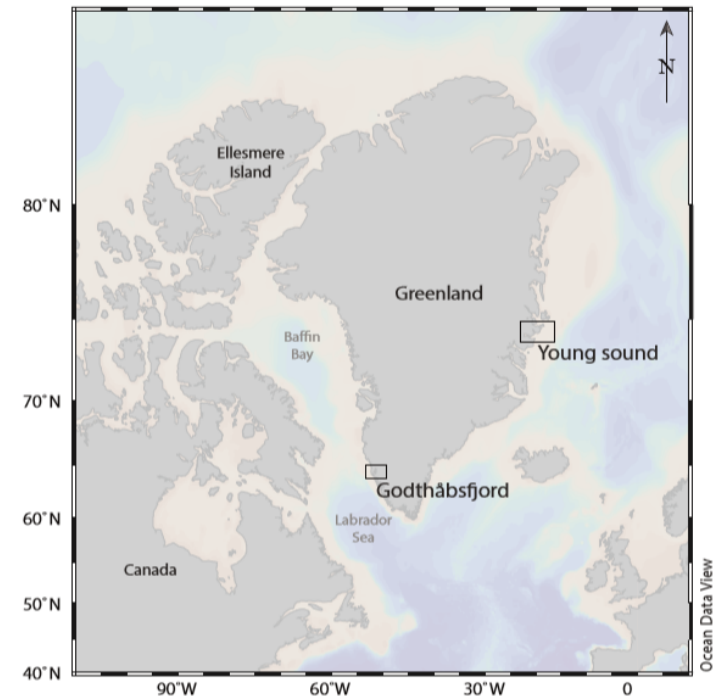
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The Greenland Ice Sheet (GIS) has been losing mass at an increasing rate due to atmospheric and oceanic warming. As a result, freshwater discharge from the GIS is expected to strongly increase in the future, with a large impact on coastal marine ecosystems.

This master project developed within the framework of GreenShift “**Greenland fjord productivity under climate change**”, aims to assess the impact of Greenland Ice Sheet melt on sediment fluxes and primary productivity, focusing on the time period from the Little Ice Age until present.

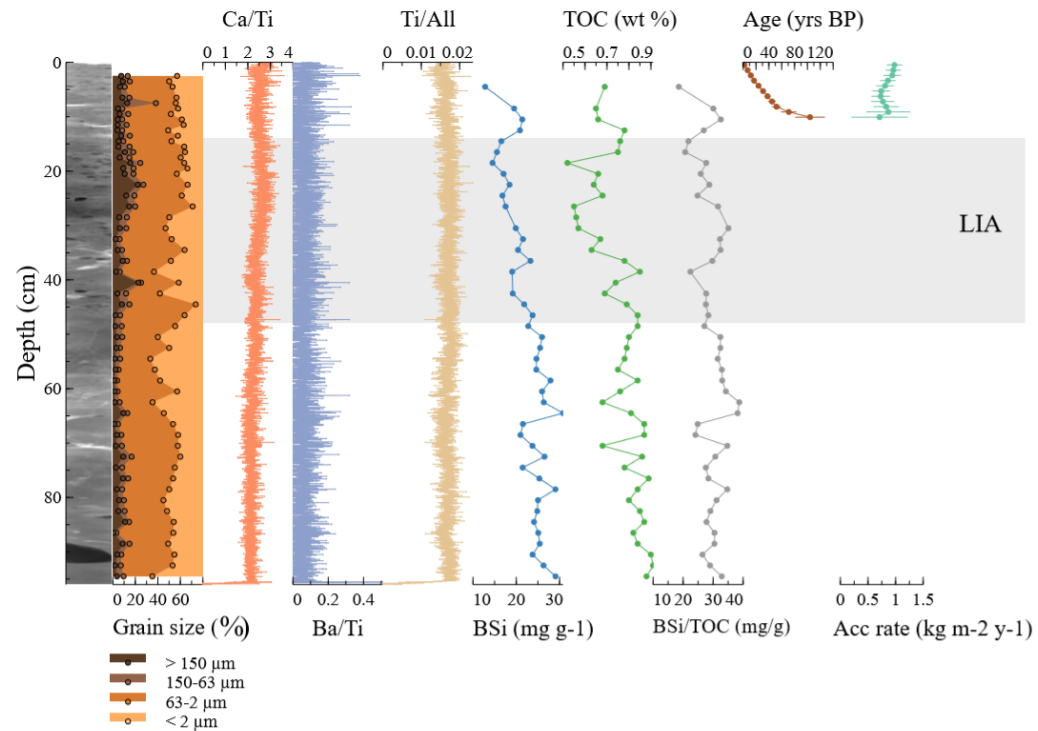
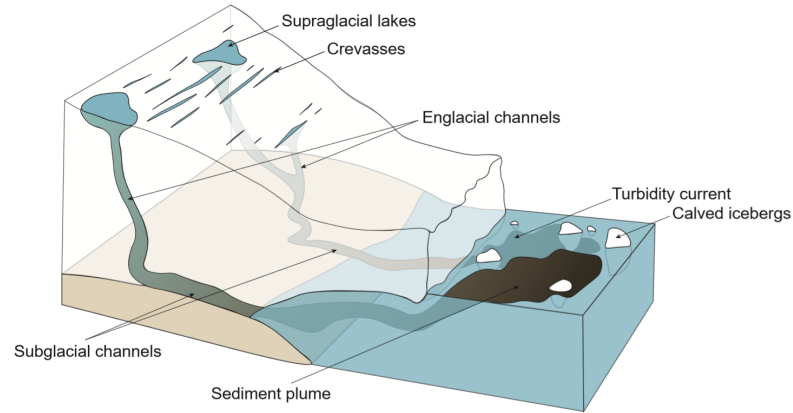
This is done to gain a **better understanding on the possible linkages between GIS melt and productivity in Greenland fjord systems**, with a view to improve future projections.



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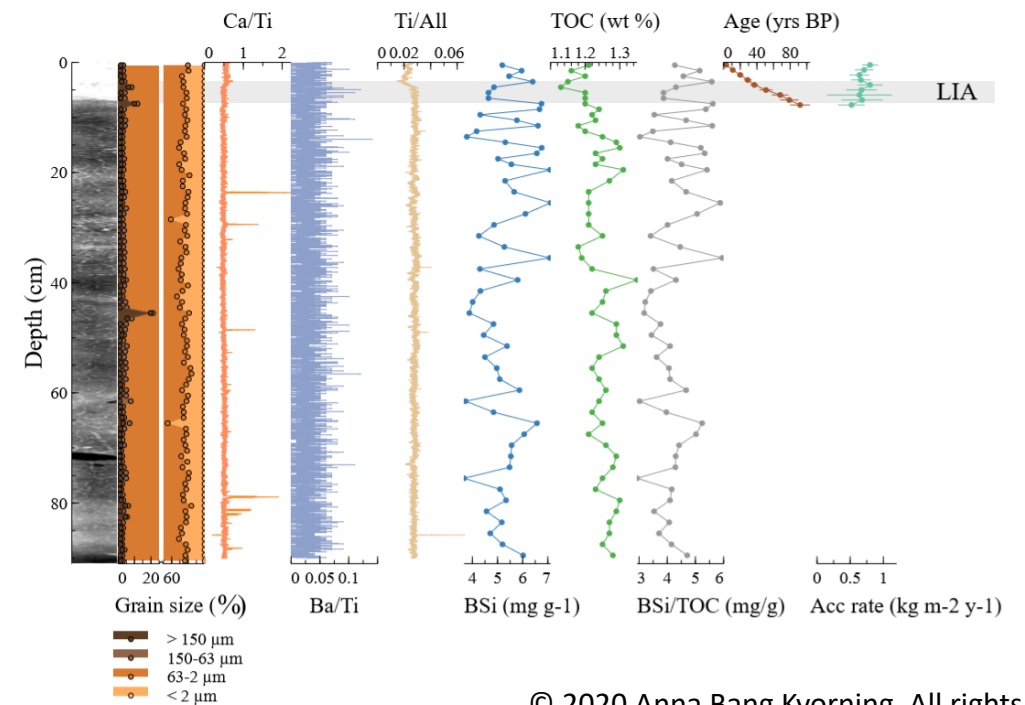
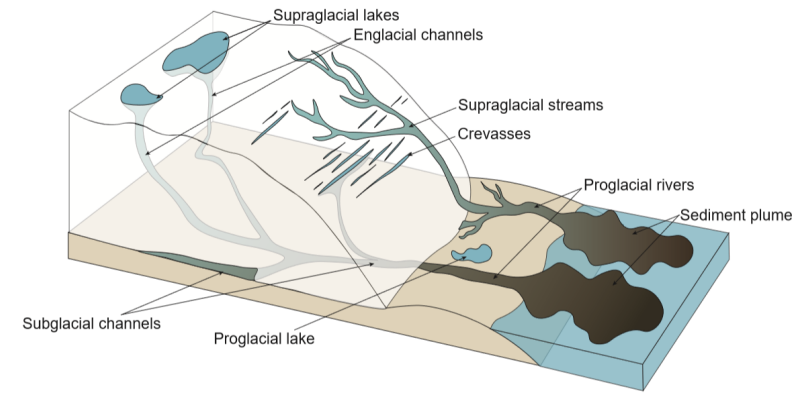
Godthåbsfjord

Primarily influenced by
marine terminating glaciers



Young Sound

Influenced by
Land terminating glaciers



Preliminary results and future work

- Our **preliminary results** show reduced productivity in recent decades for both fjords affected by land-terminating (NE) and marine-terminating (SW) glaciers.
- Our **future work** aims to assess the impact of Greenland Ice Sheet melt on sediment fluxes and primary productivity, by analyzing a high-resolution Holocene sediment core record from Godthåbsfjord. Furthermore, assess diversity and community structure changes for one of the main groups of primary producers (dinoflagellates) based on their microfossil record.