

The origin and fate of OM in circum-Arctic subglacial ecosystems.



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 EGU 2020 Sharing Geoscience Online –
 SSS 5.11/BG3.600



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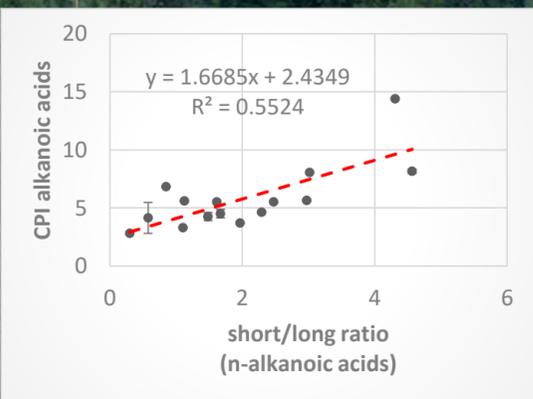
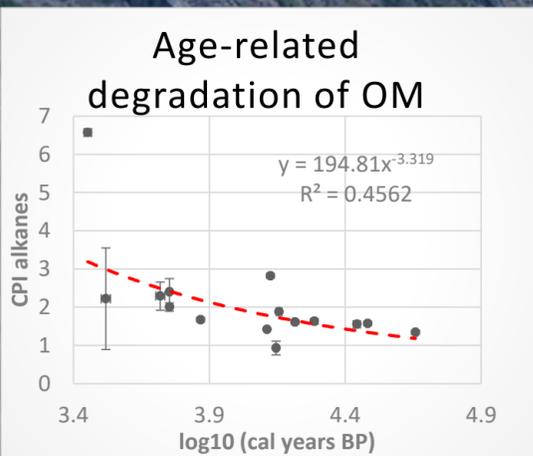
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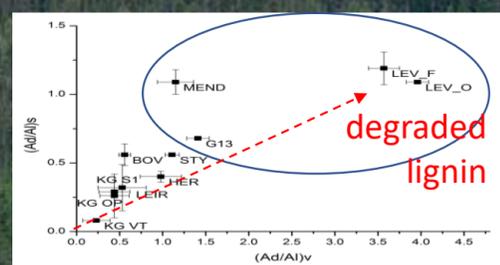
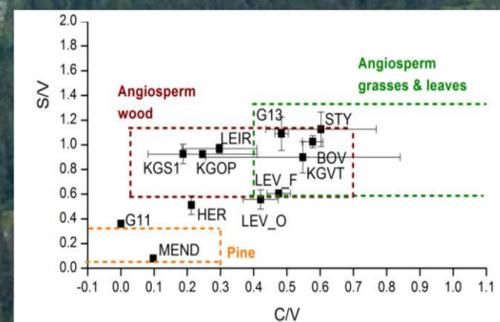
Melting glaciers supply and nourish proglacial habitats and coastal ecosystem with 'starter pack' incl. microbial cells and readily available nutrients...

..while emerging subglacial sediments open a window into times of glacier advances

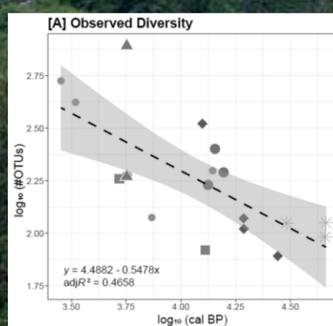


Matter of time, even though on a thousands-year time scale.

- > Microbial diversity decrease, versatile classes are **true survivors** below glaciers (i.e. *Betaproteobacteria*).
 - > OM derived from higher plants is being degraded when beneath glaciers.
 - > **highly degraded OM** found to be older than 13.5 thousand cal BP (CPI < 2)
- However,
- > lignin is tough and rather put 'on hold' (was observed mostly at a less degraded stage)



> OM derived from microbes, mosses and plants show rather fresh input, indicating **an active component** of subglacial ecosystem.



Fate of microbes?
 Total **abundance** and **diversity** both decrease with time spent on 'lockdown' beneath glacial ice mass.



Sampling of subglacial sediments (Greenland and Svalbard).



Ice cave opening – Leverett Glacier (Greenland Ice Sheet)

