

Tidewater glaciers control the phytoplankton growth environment in Kongsfjorden during summer

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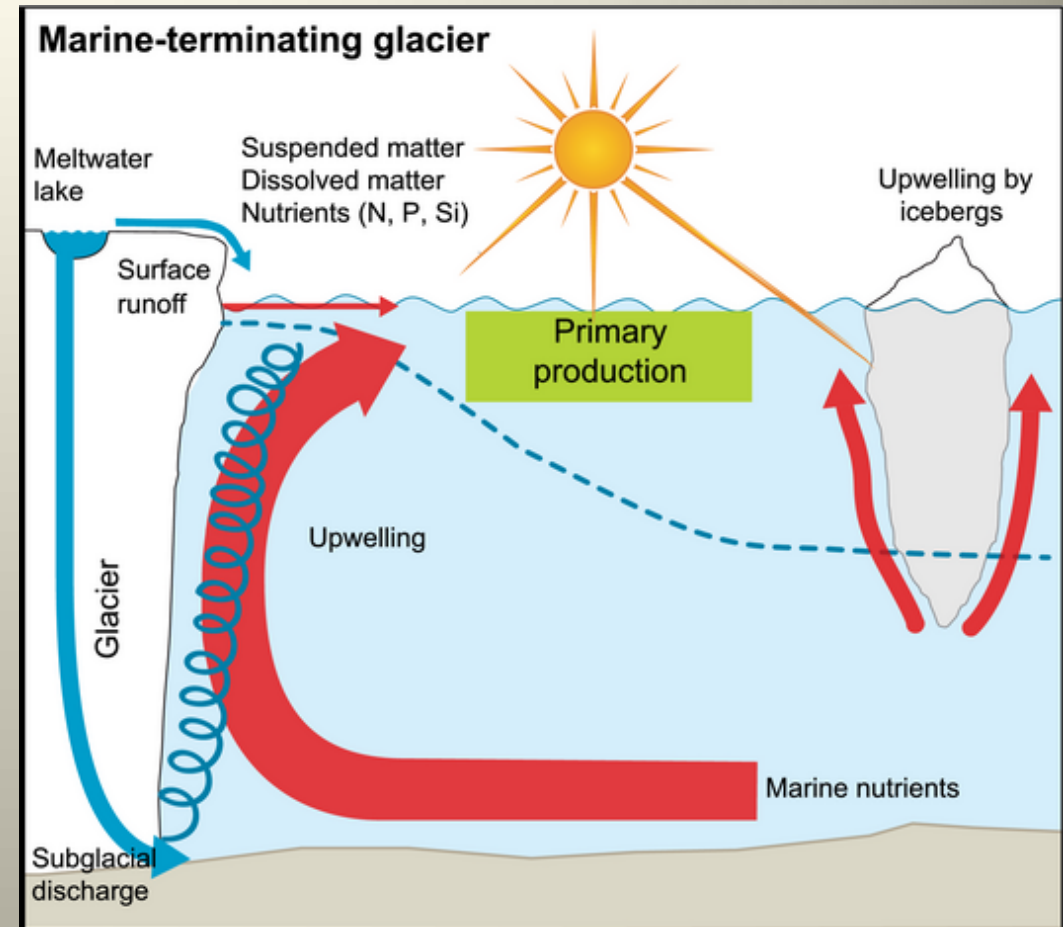
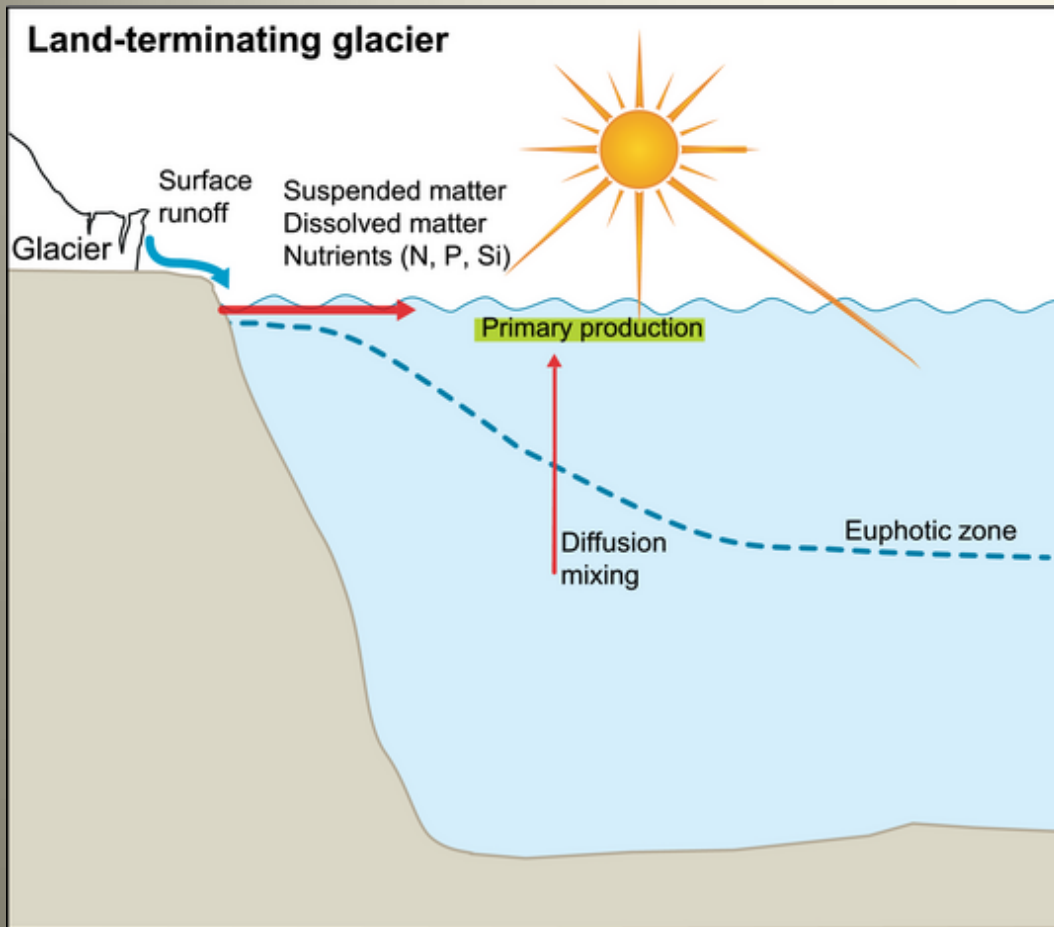
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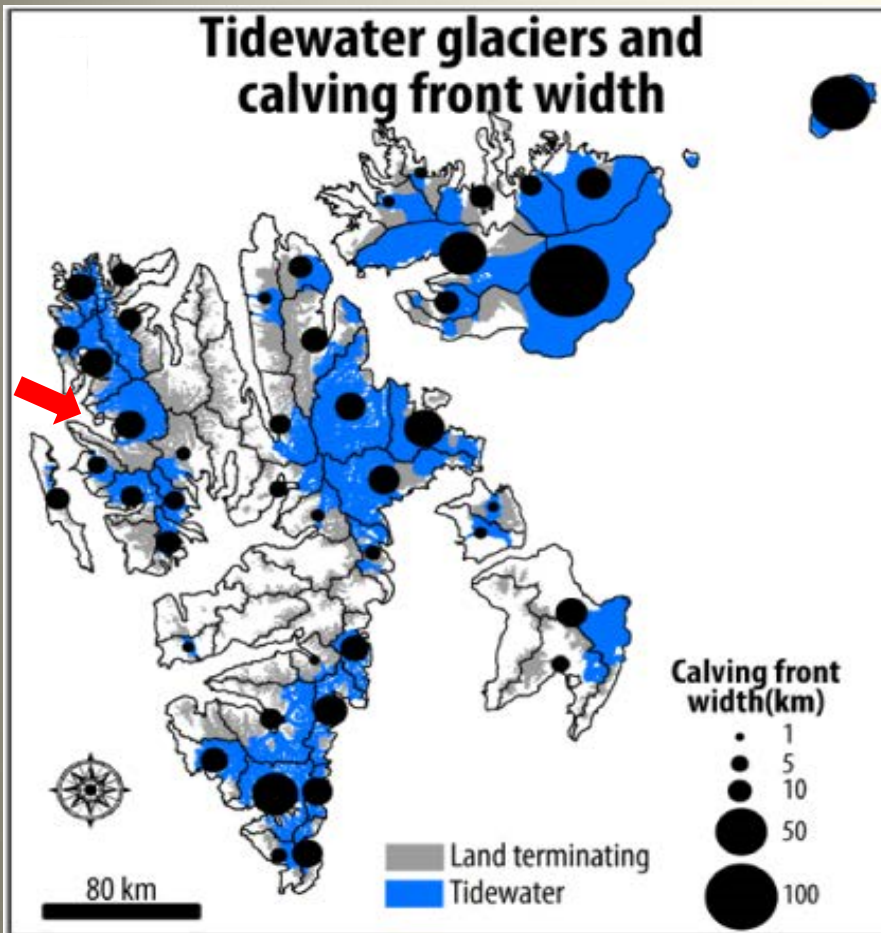
Havforsøermøte 2019

Why should biologists care about tidewater glaciers?

The Greenland case

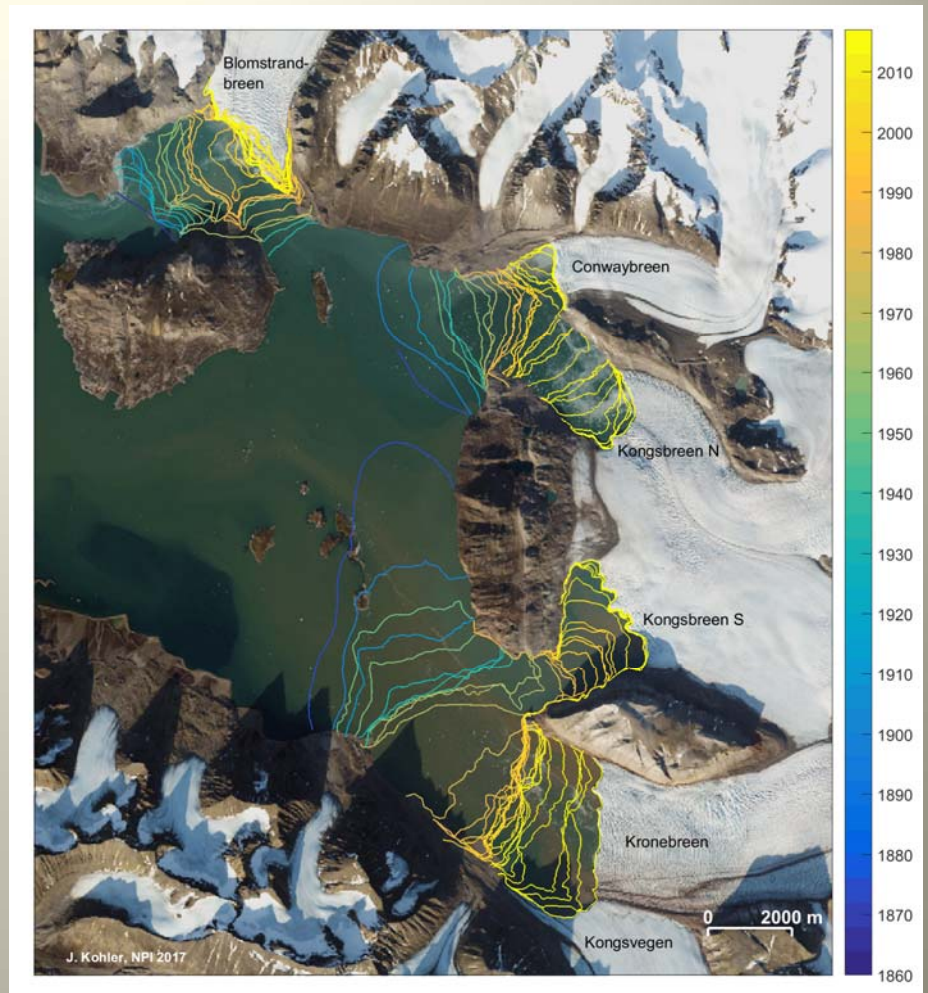


Tidewater glaciers in Svalbard and Kongsfjorden



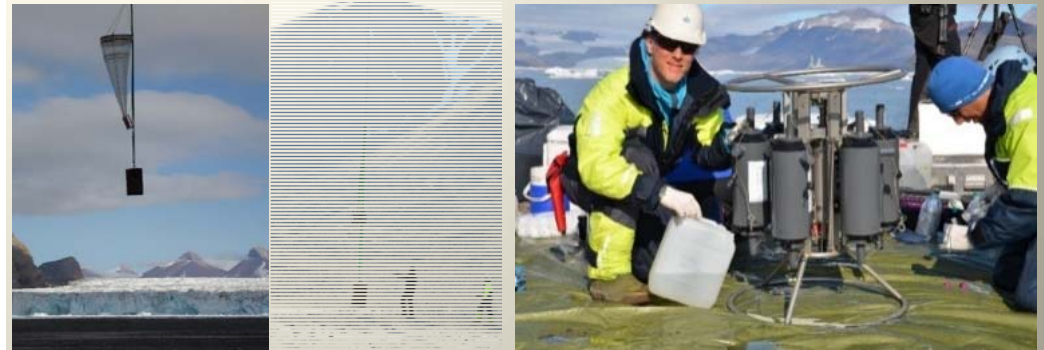
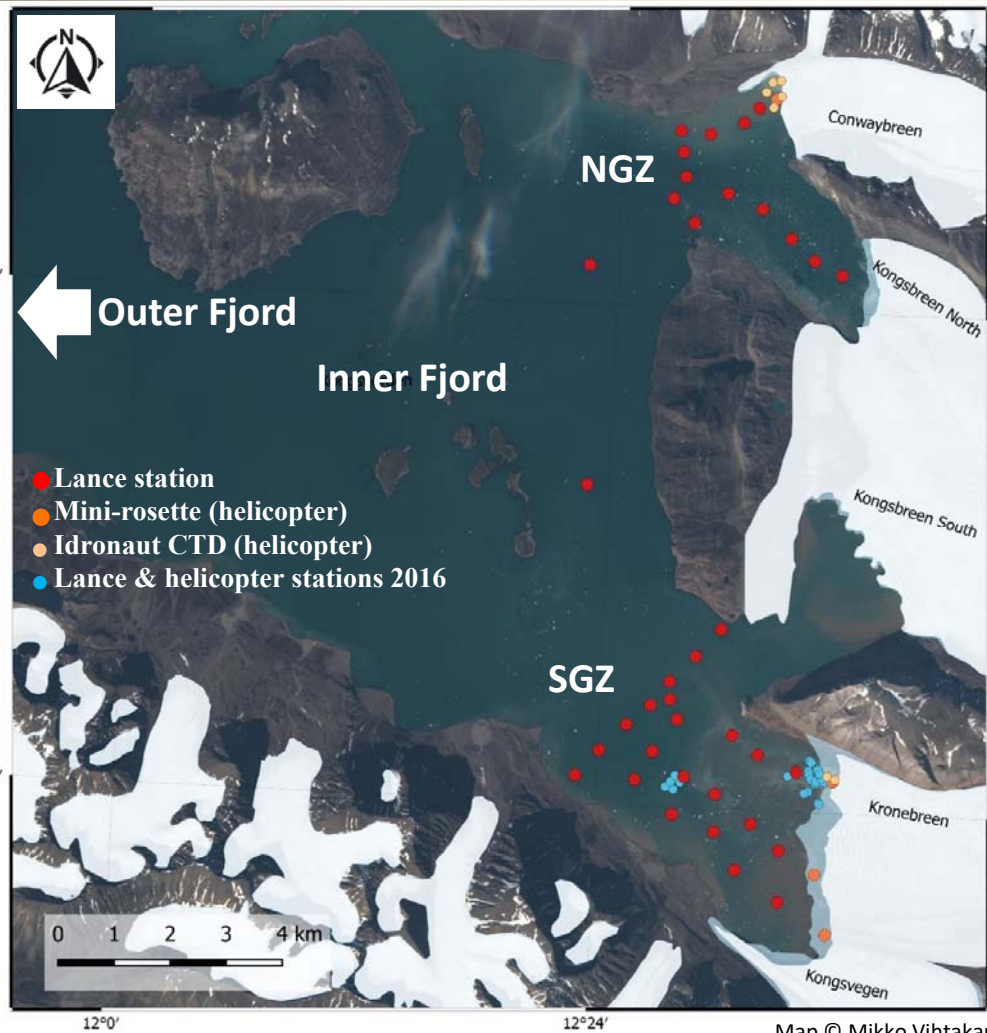
Nuth et al. 2013

At present, 68% of the glacierized area of Svalbard drains through tidewater glaciers that have a total terminus width of ~740km.

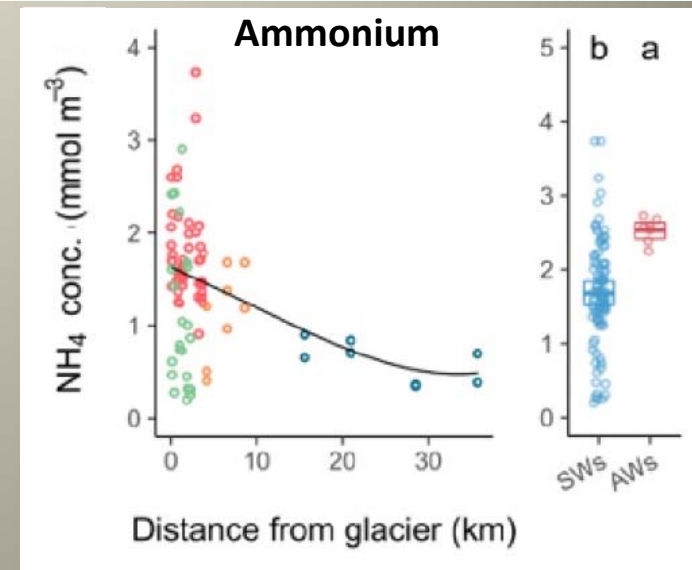
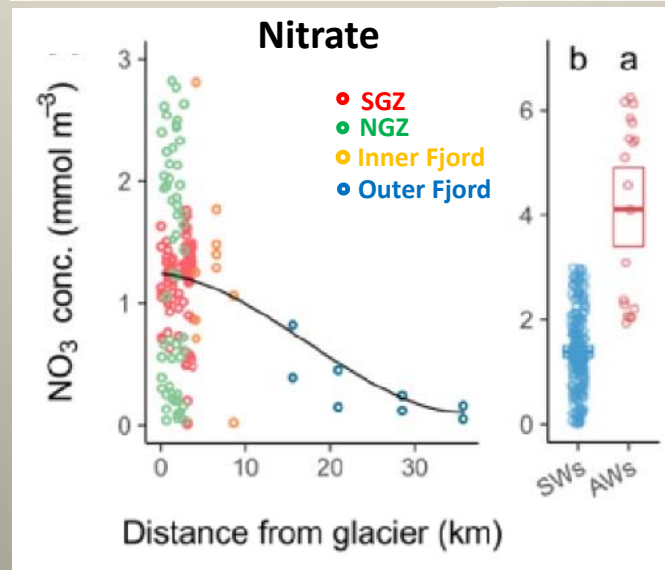
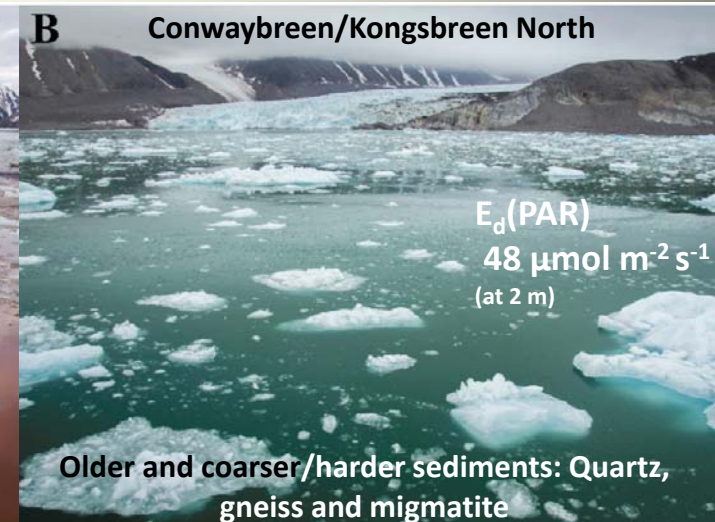
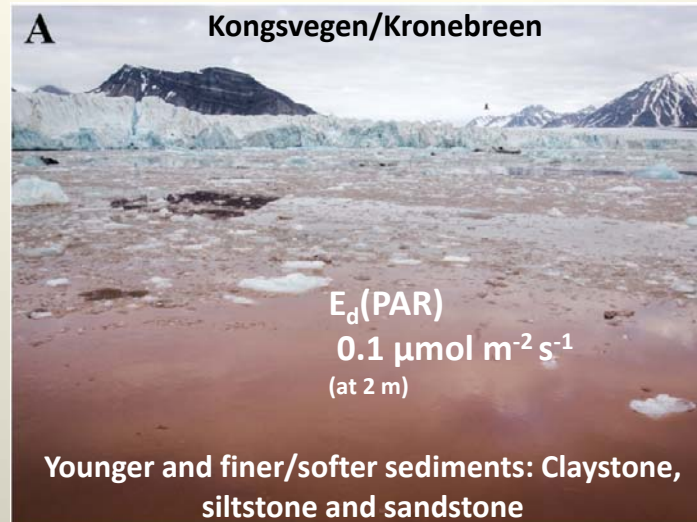


Tidewater glacier annually contribute 1 km³ of meltwater in Kongsfjorden and Kronebreen and Kongsvegen alone discharge 2.5 million tons of suspended sediments during the melt season (Meslard et al. 2018)

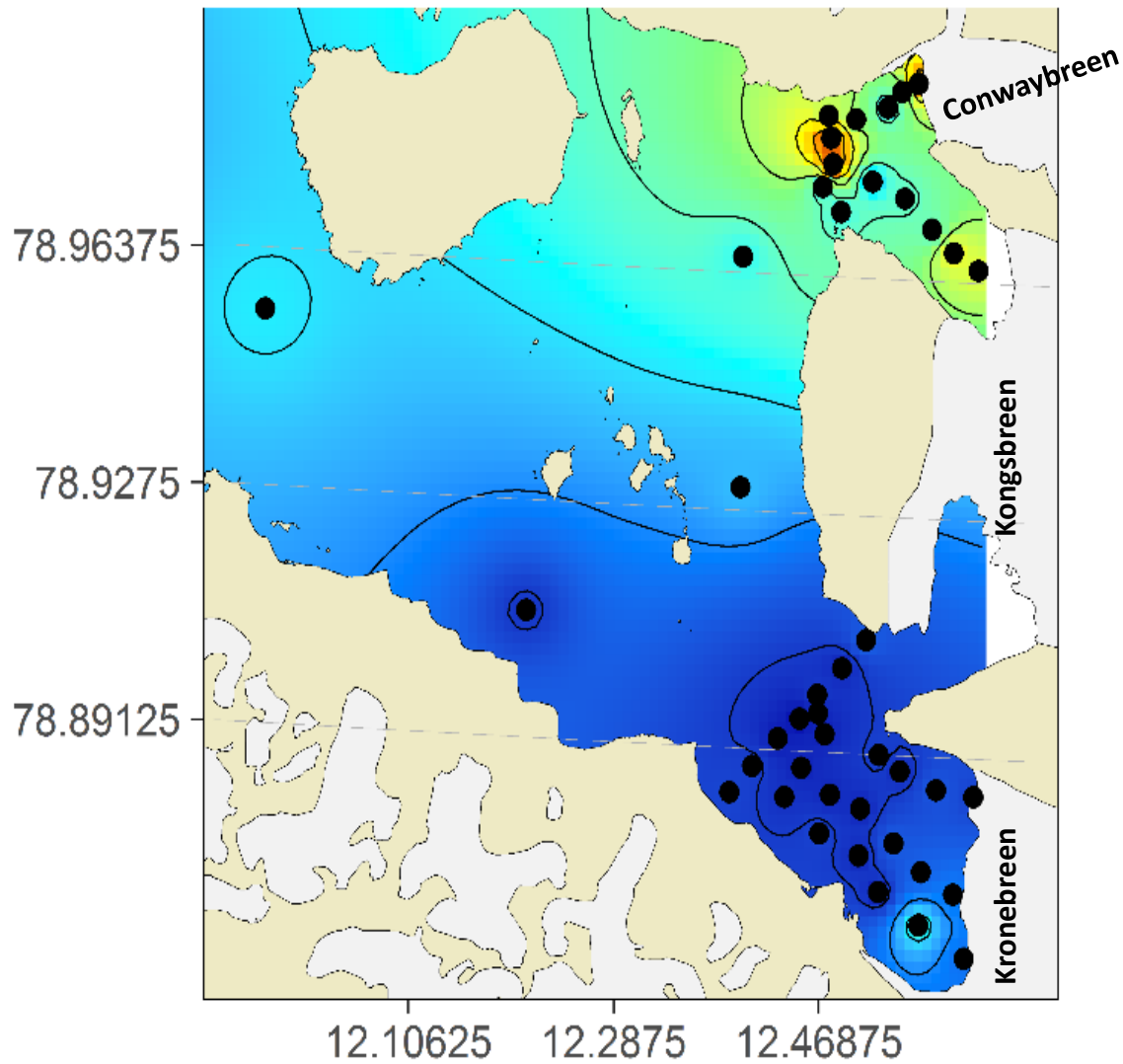
Tidewater glacier sampling campaigns in 2016 and 2017



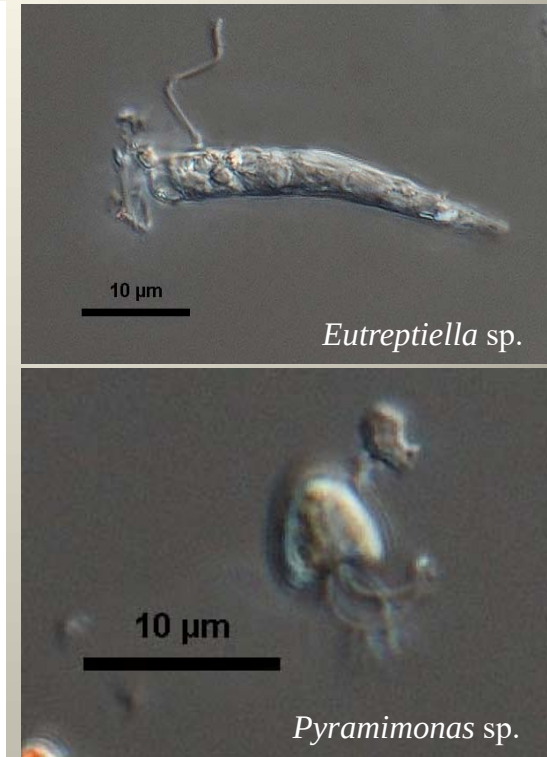
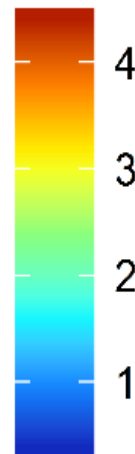
Bedrock geology and subglacial meltwater runoff control light and nutrient dynamics



Phytoplankton bloom in the Northern Glacier Zone

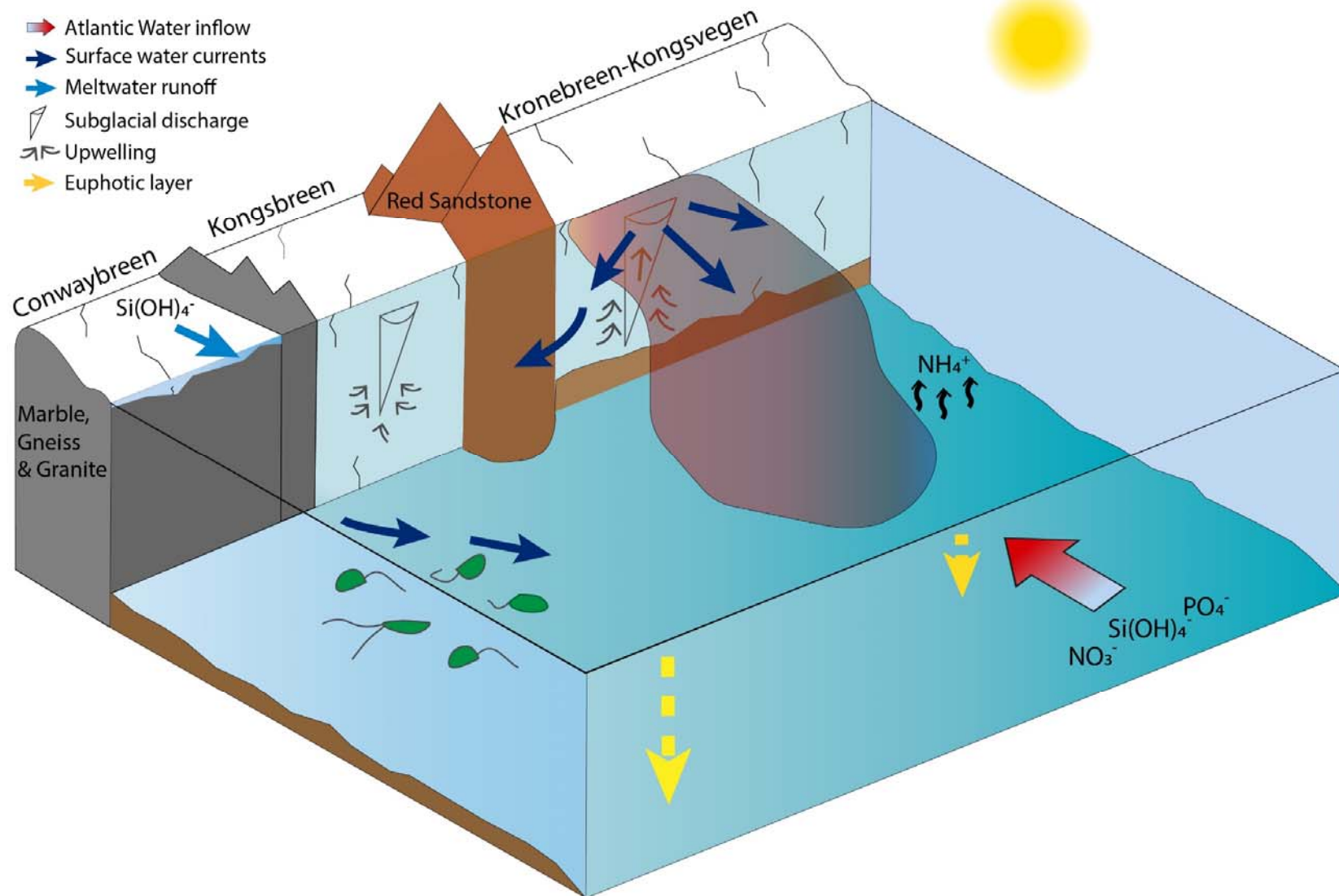


Chlorophyll a
(mg m⁻³)



Pictures Agnieszka Tatarek, IOPAS

Environmental controls in a nutshell



Halbach et al. in revision *Frontiers in Marine Science*

Thank you for your attention!

