

Arctic phytoplankton/nutrients

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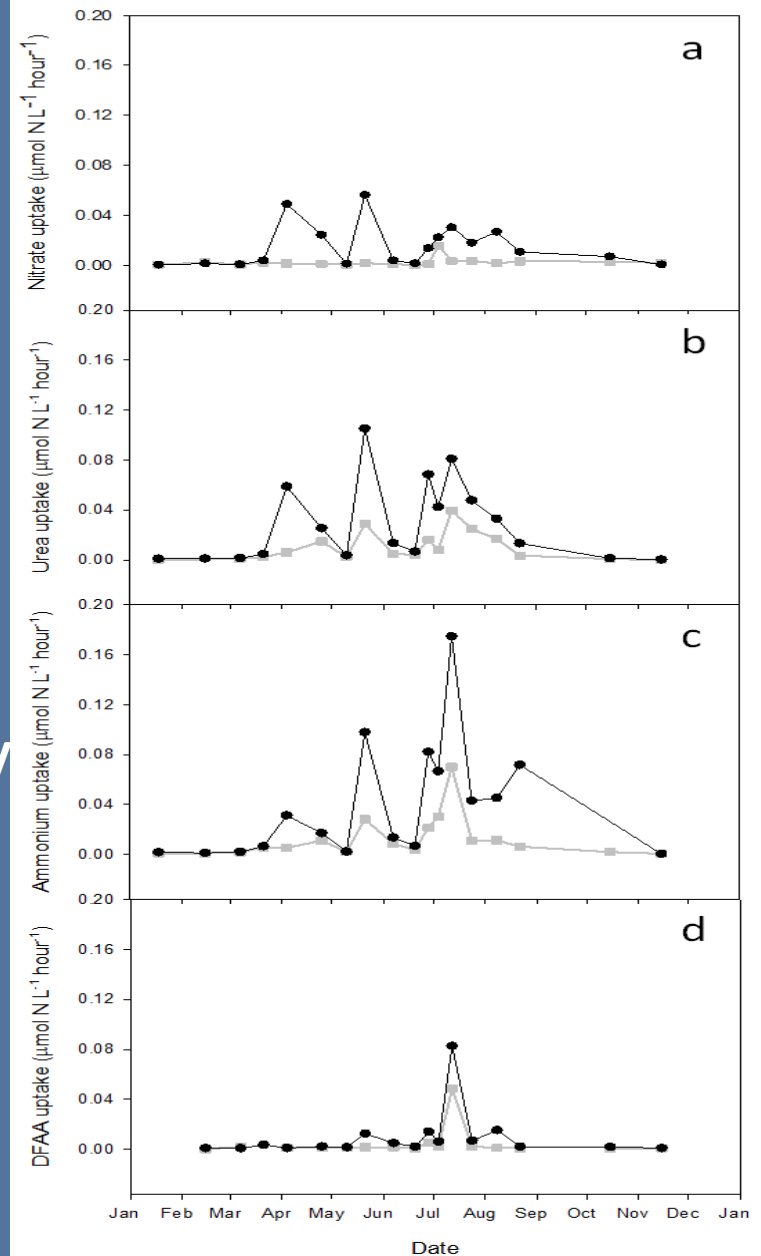


Phytoplankton distribution, productivity & community composition

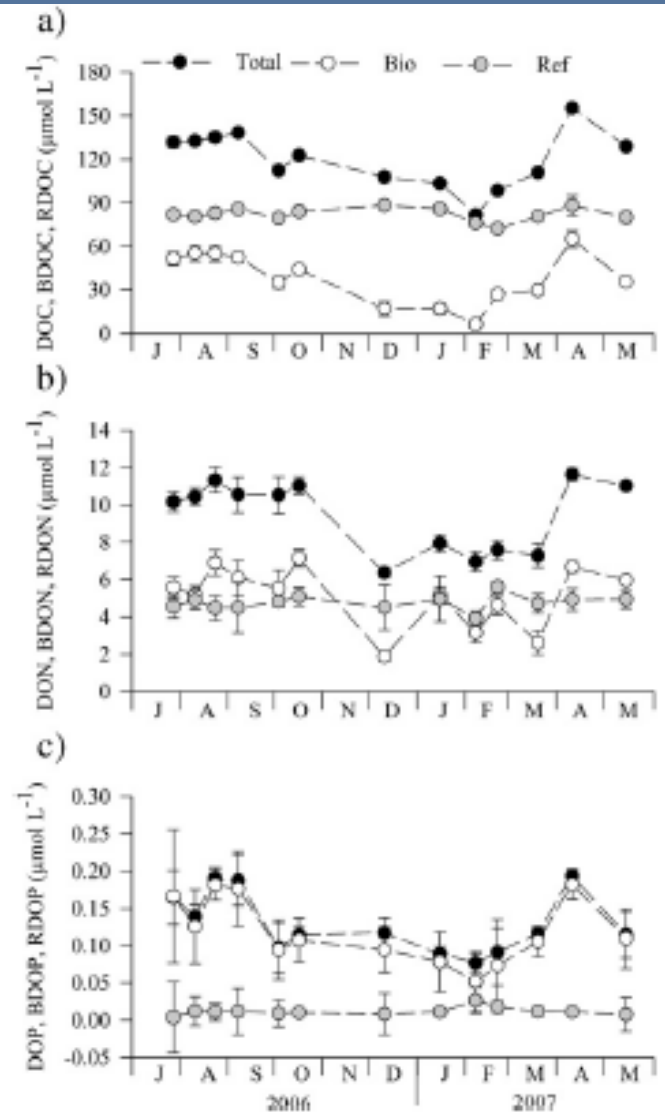
General interest:

Influence of changing inorganic/organic
nutrients and physical conditions on
phytoplankton communities and trophic transfer

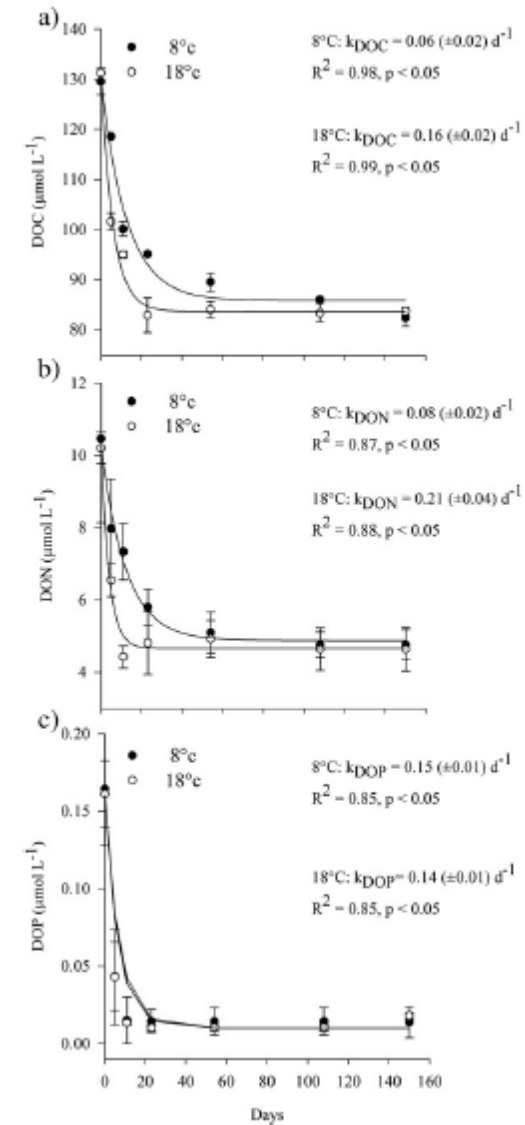
Use of ^{15}N uptake to investigate relative utilisation of inorganic and organic N in Arctic waters (and hence influence on productivity and community composition)



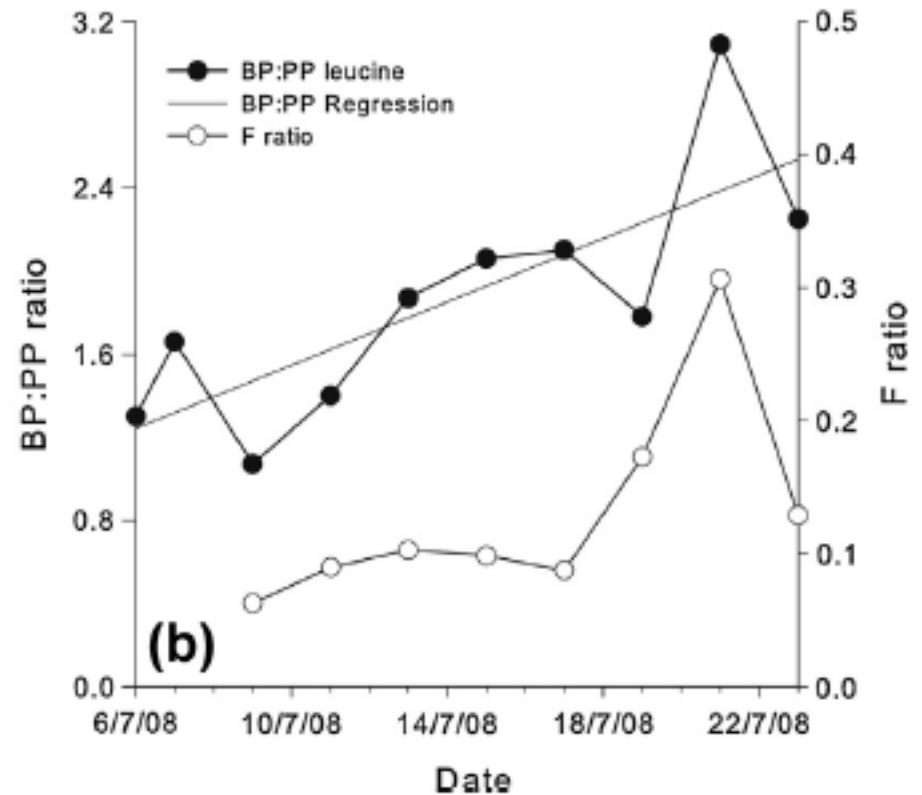
Seasonal cycle of
DOM and its bio-availability
may change as inputs from
terrestrial sources and sea
ice change



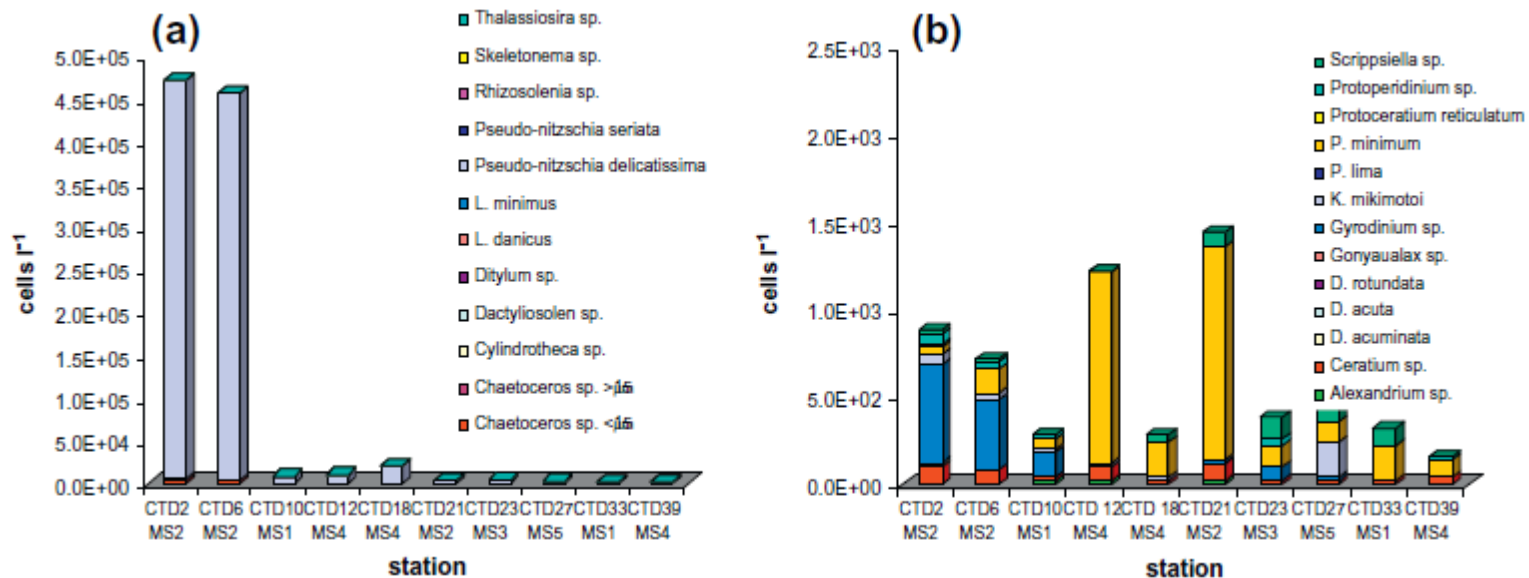
Associated changes in temperature mediated DOM degradation?



Relative importance
of phytoplankton
and bacteria
to productivity may
change with
temperature
and community
composition



Community composition and its drivers



Davidson et al. Prog Ocean (2013)

Potential to use harmful algal genera as markers?

Capabilities

- Phytoplankton taxonomy (microscope and molecular)
- Bacterial and picoplankton (flow cytometry)
- Inorganic/organic nutrient analysis
- Chlorophyll analysis
- POC/N analysis
- $^{15}\text{N}/^{13}\text{C}$ uptake
- ^{14}C primary and bacterial productivity
- Lab, ship and Mesocosms....