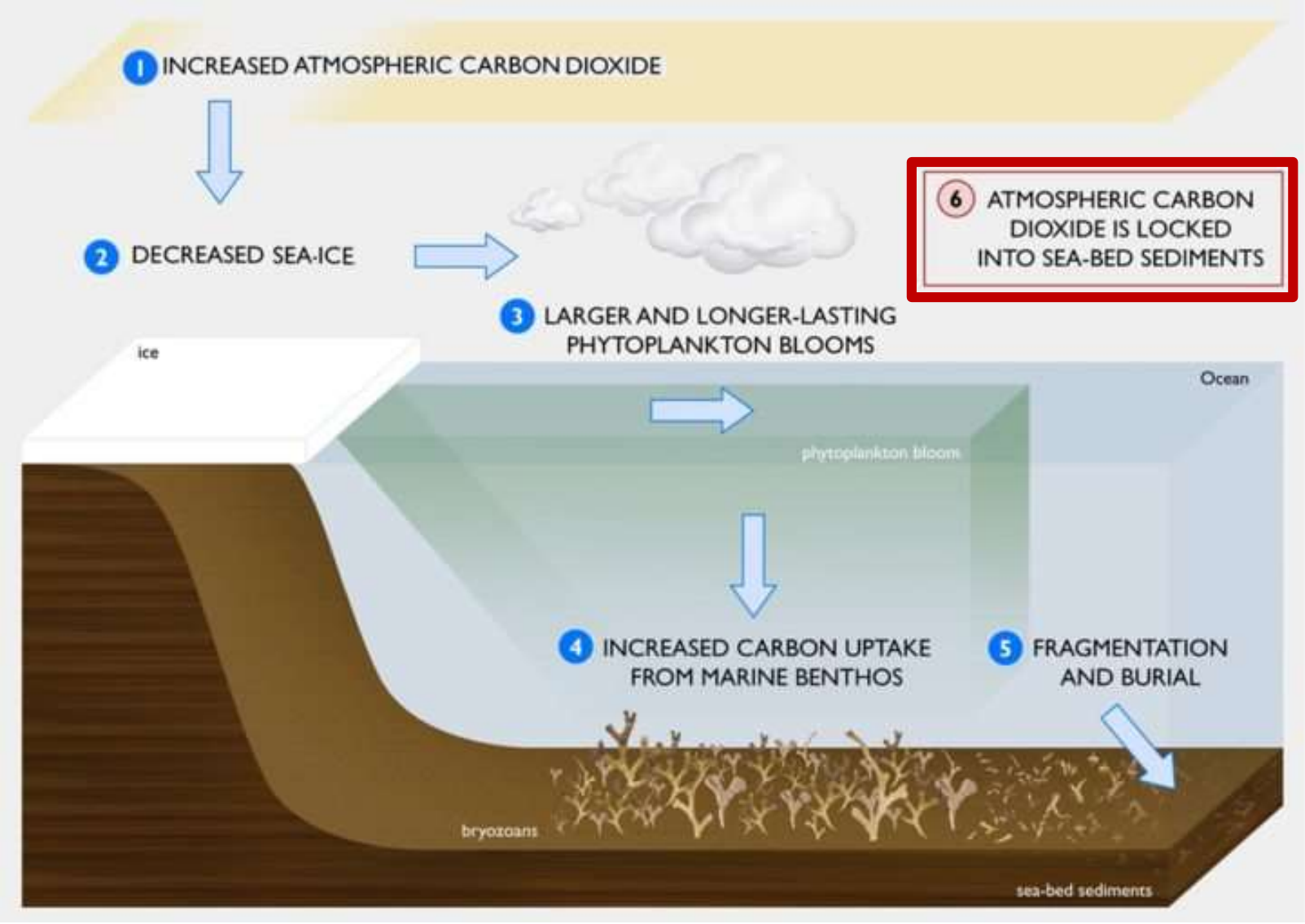
Sediment Geochemistry

ChAOS

JOHAN C. FAUST

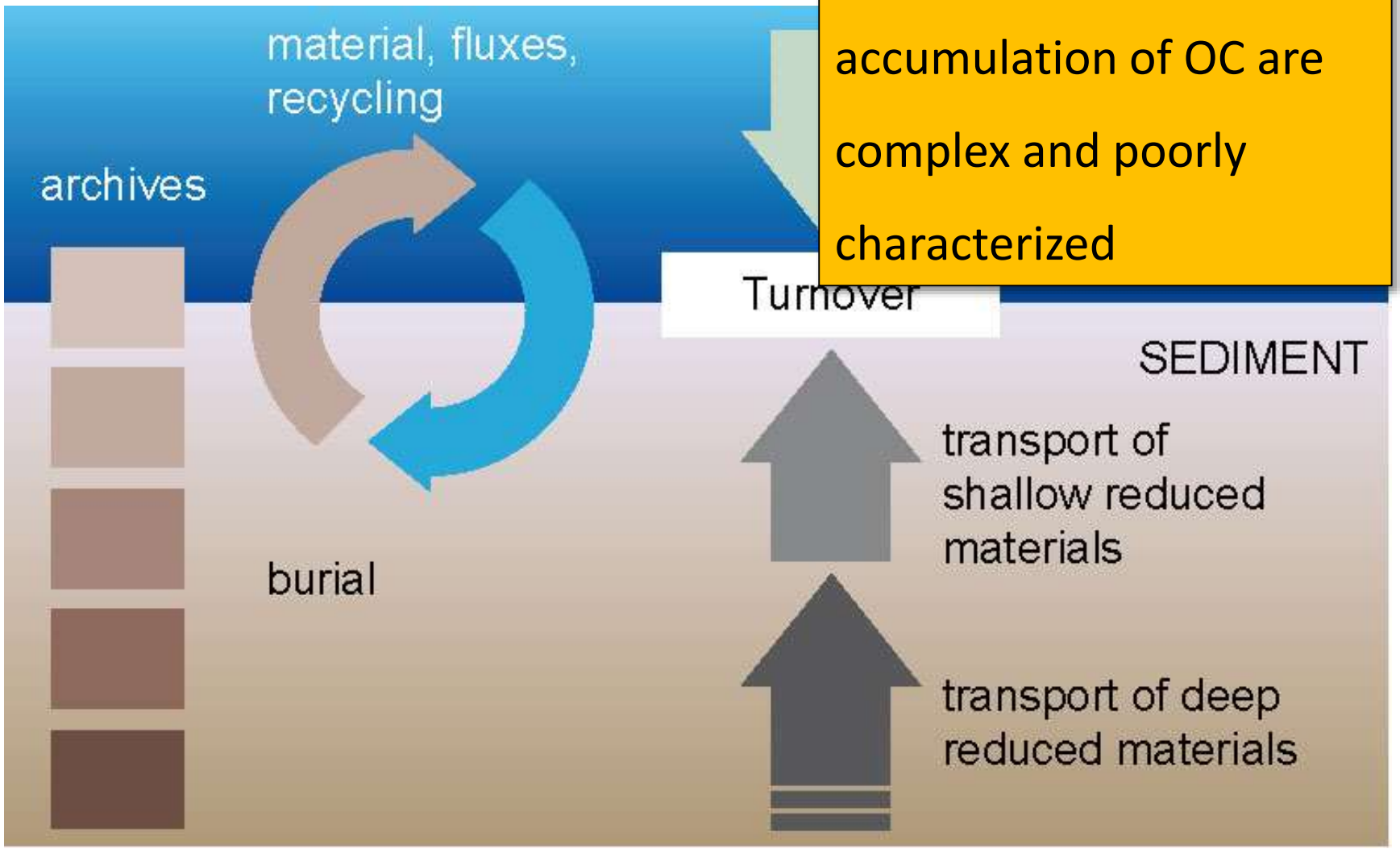
ChAOS Leeds



British Antarctic Survey (Dave Barnes)

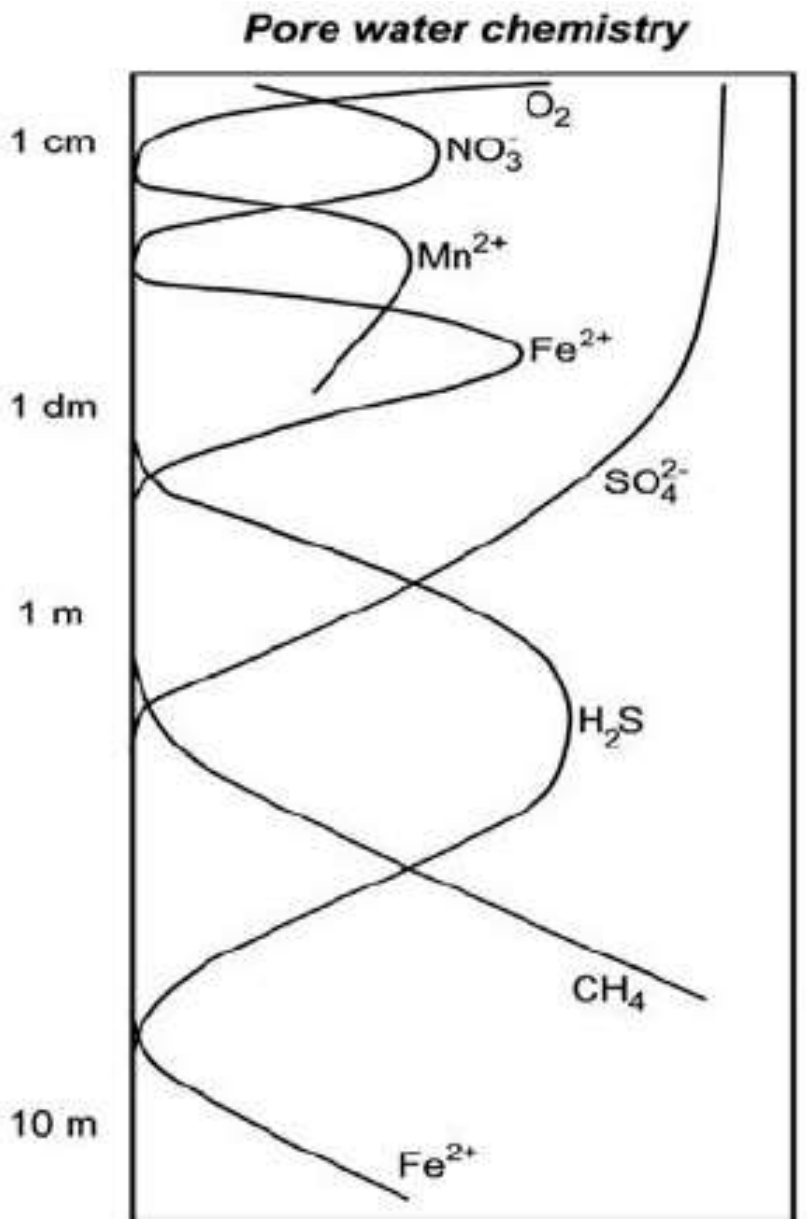
ChAOS Leeds

Mechanisms that control preservation and accumulation of OC are complex and poorly characterized



Sediment pore water

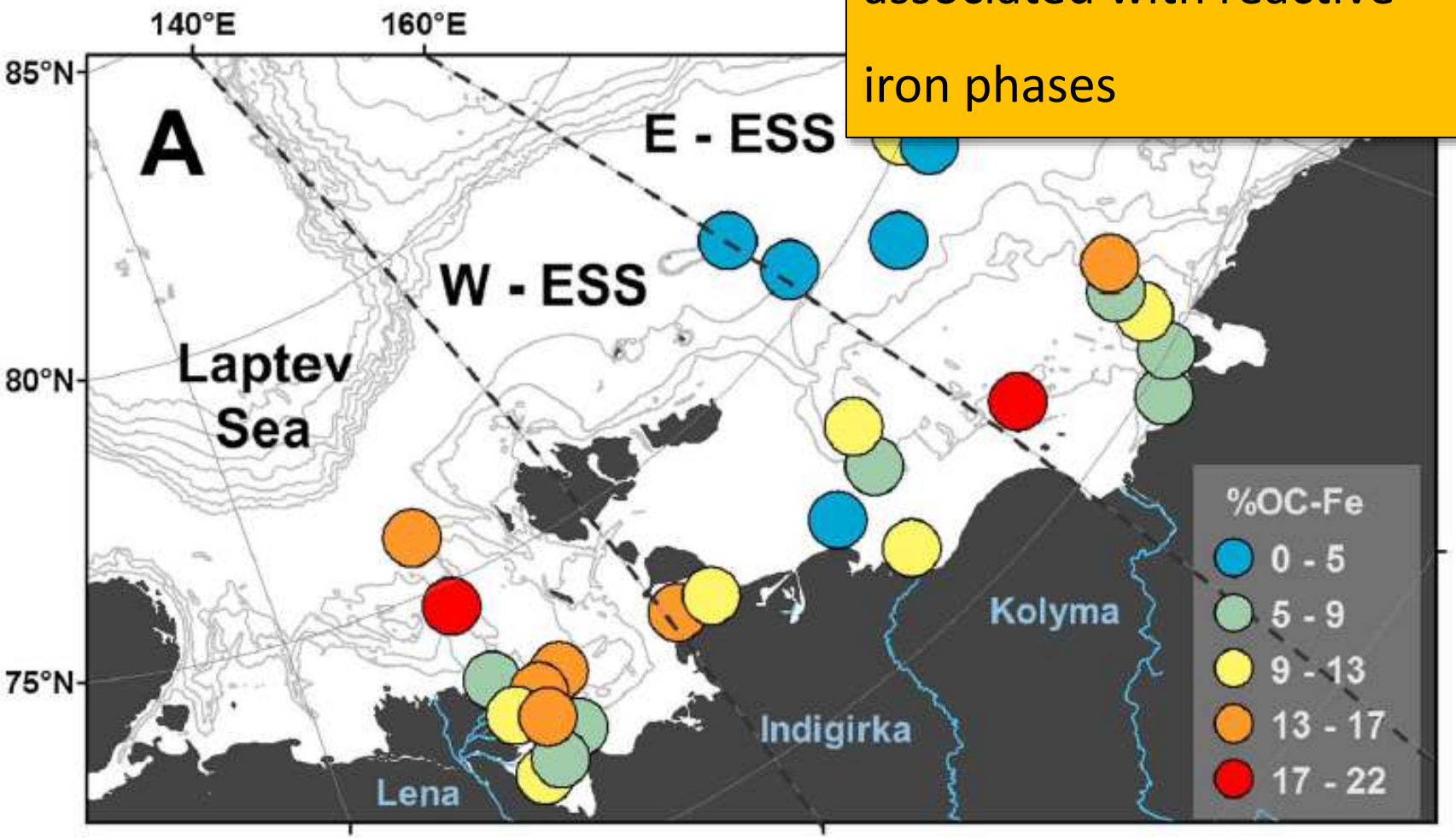
Reveal remineralization processes and the release of carbon and nutrients into the sediment pore water



Froelich et al. (1979)

OC associated with iron oxides

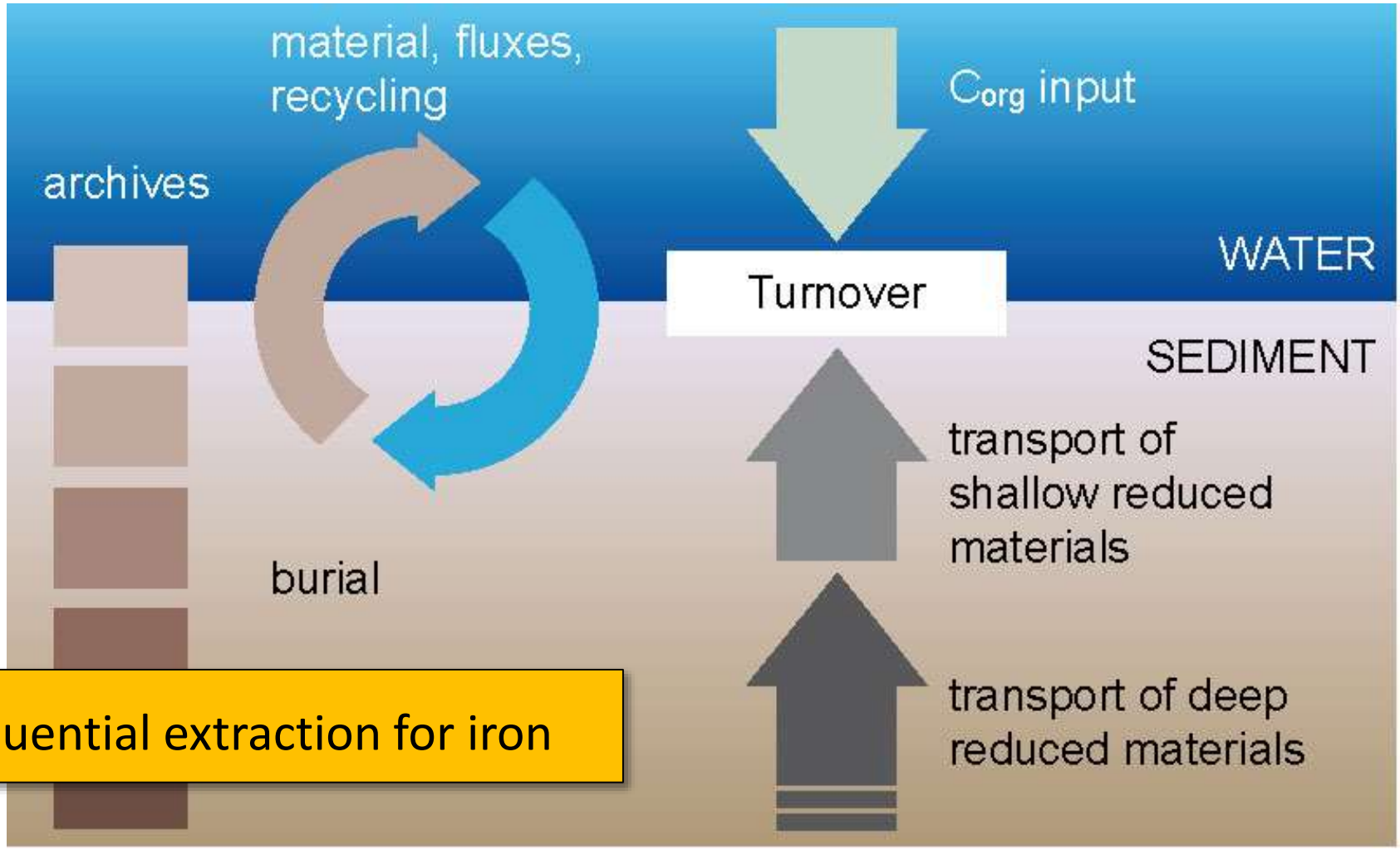
Substantial fraction of OC associated with reactive iron phases



Salvadó et al. 2015

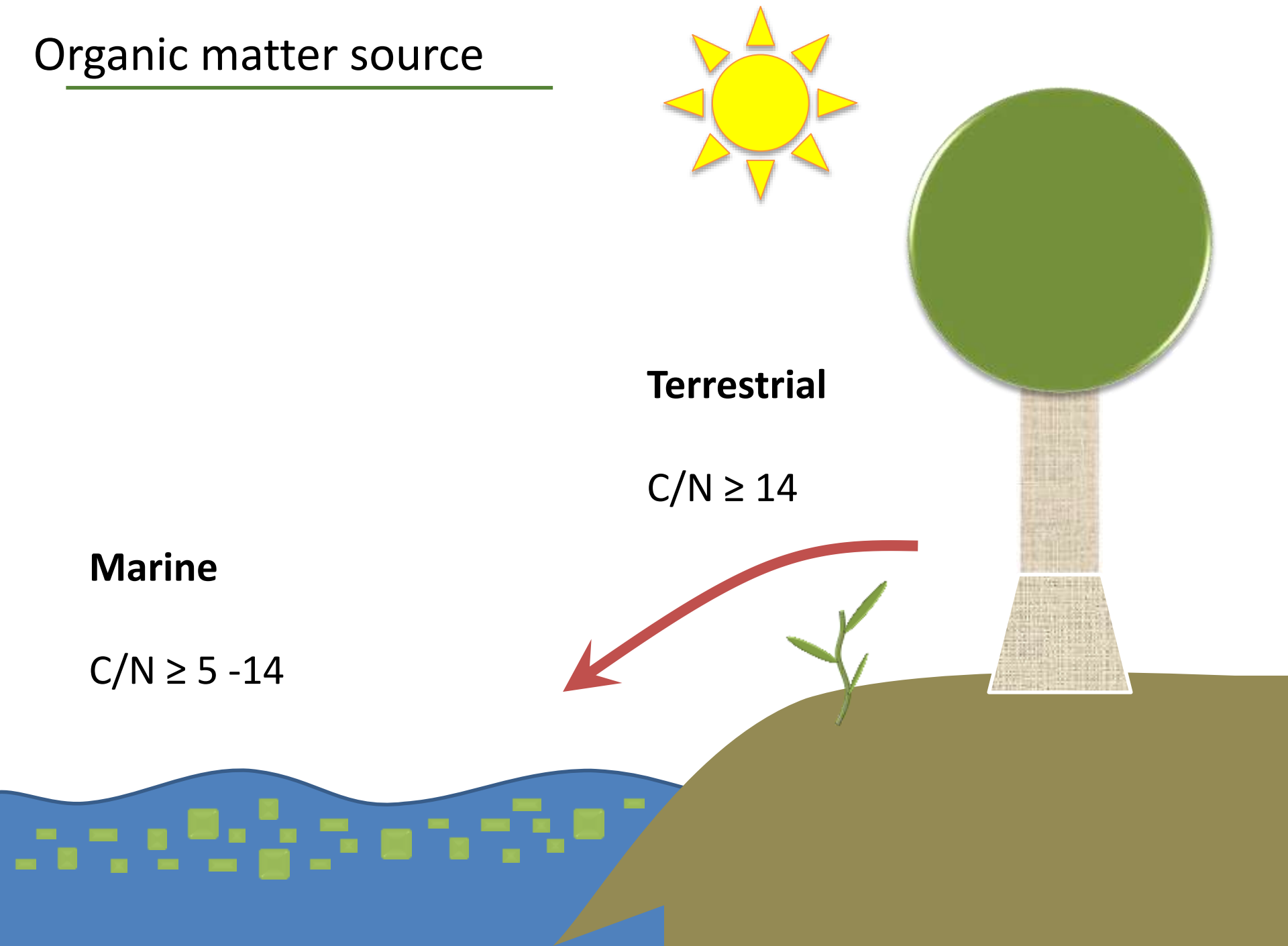
OC associated with iron oxides

Barents Sea?



Sequential extraction for iron

Organic matter source



Terrestrial

C/N ≥ 14

Marine

C/N ≥ 5 -14

Organic matter source

Carbon and nitrogen stable isotopes ($\delta^{13}C_{org}$, $\delta^{15}N_{org}$)

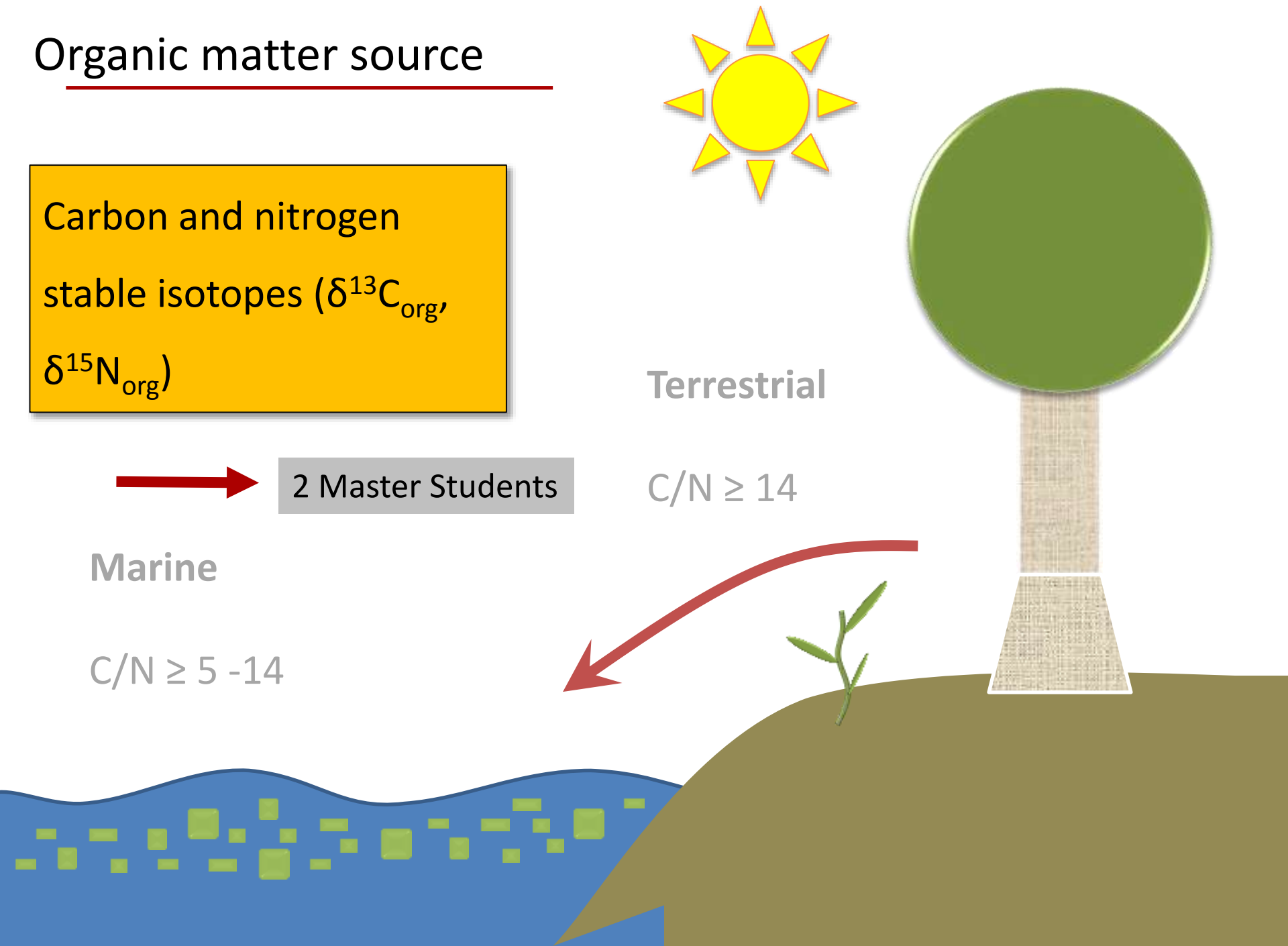
2 Master Students

Terrestrial

C/N ≥ 14

Marine

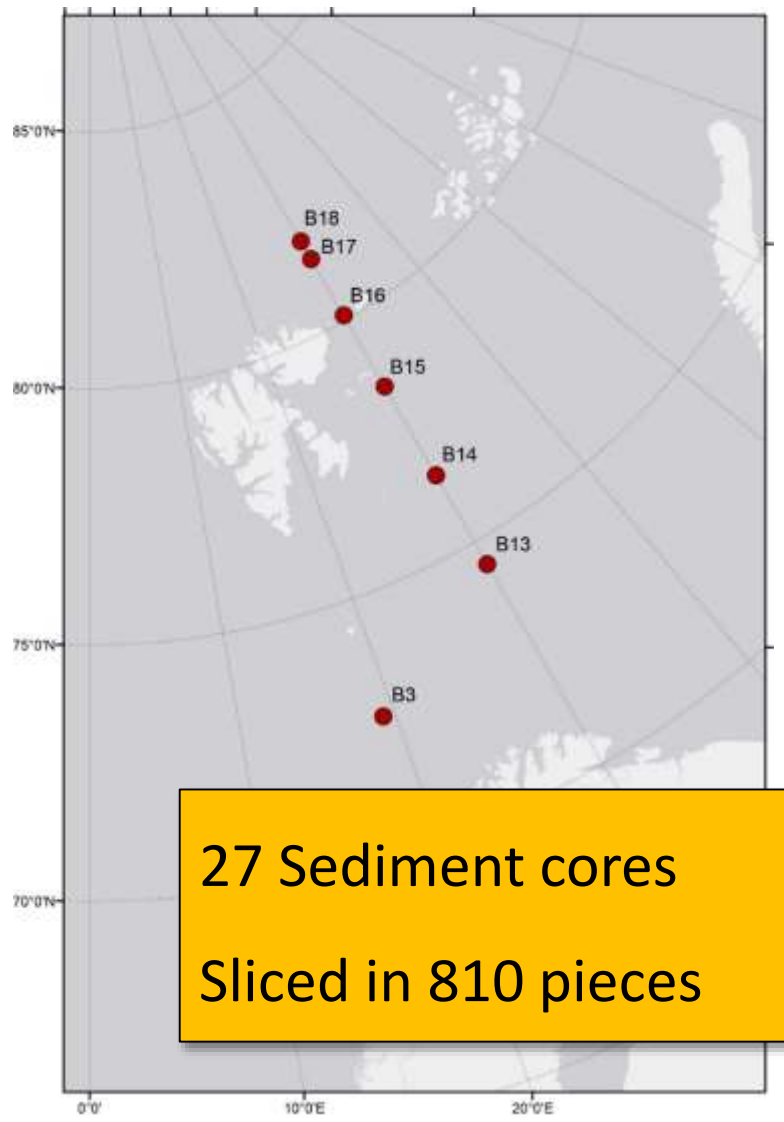
C/N ≥ 5 -14



Further analysis

- ^{210}Pb and ^{14}C dating
- Elemental Composition
- (Grain Size)
- (Biogenic Opal)

What have we done?



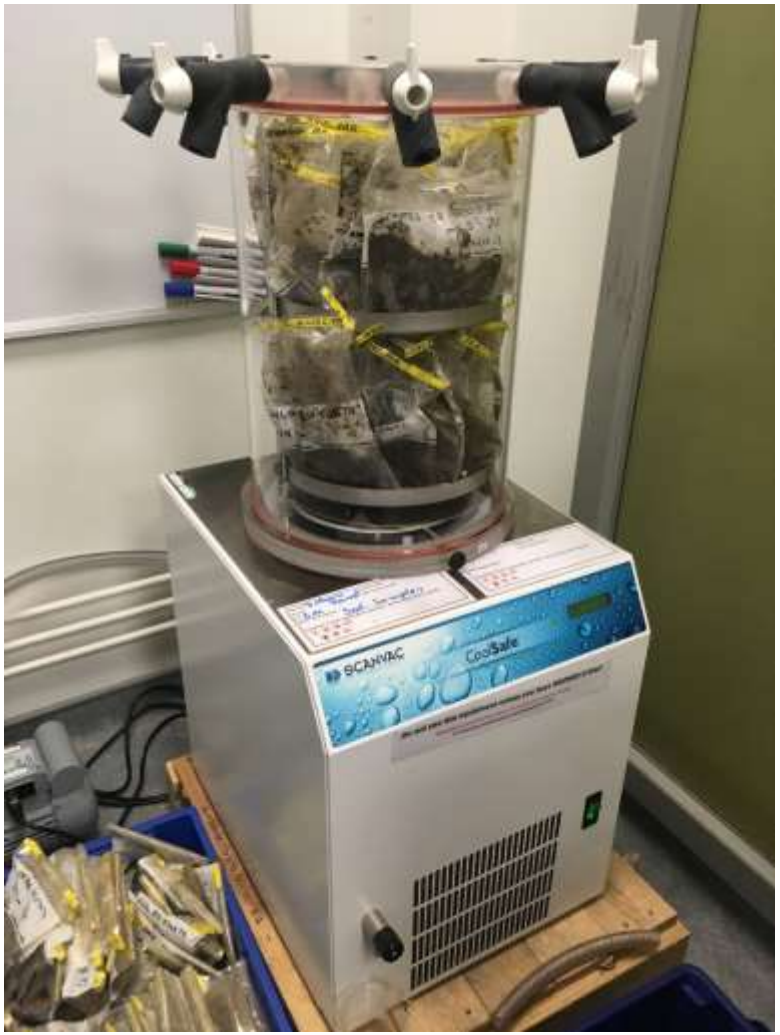
27 Sediment cores

Sliced in 810 pieces

What have we done?

What have we done?

Sediment samples freeze drying, XRF analysis in Oldenburg, OC etc.



Pore water samples ready for ICP-OES analysis

Next Steps

Cruise Barents Sea 2017