

Bryozoan size structure across a gradient of thermal regimes in the Northern Hemisphere (DWARF) an overview of the project

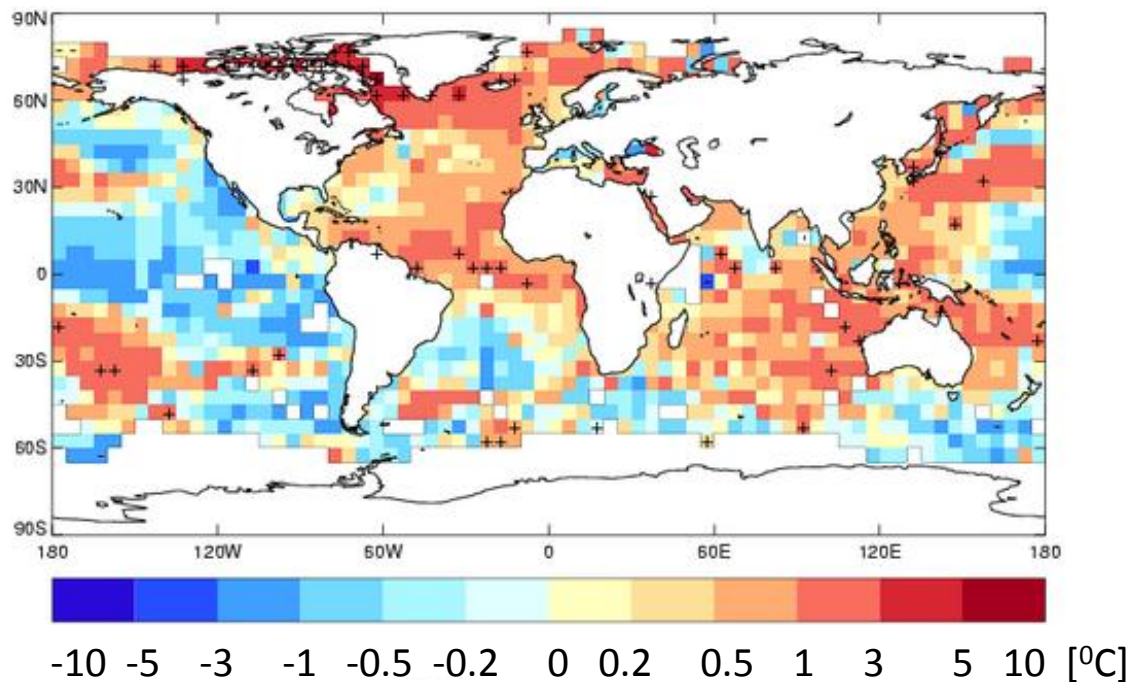
*Anna Stępień, Piotr Kukliński,
Maria Włodarska - Kowalczyk*

Climat changes consequences

What global
warming has
infuence on?

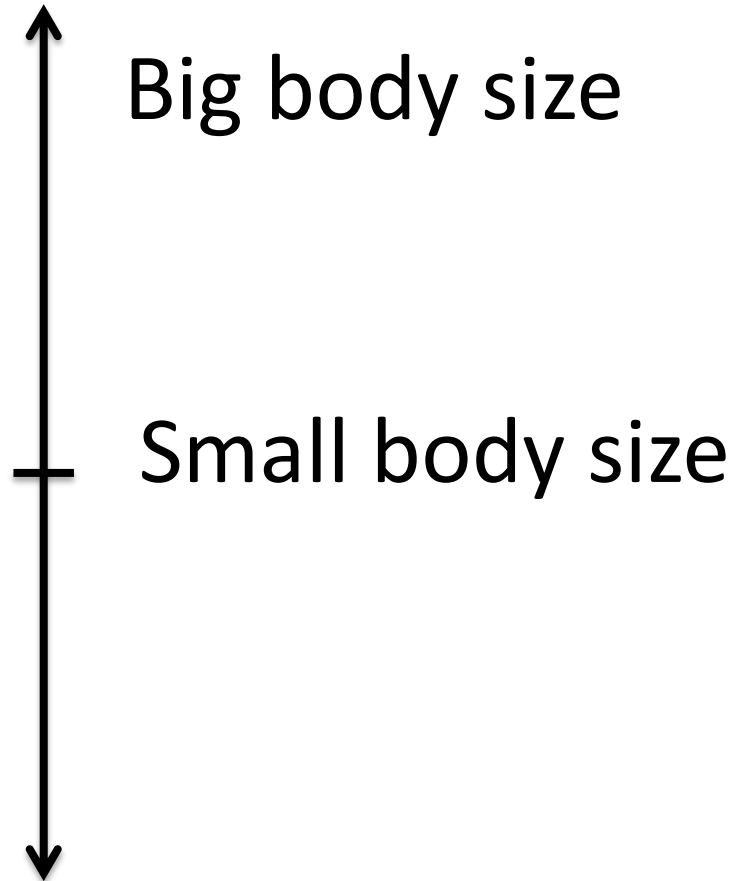
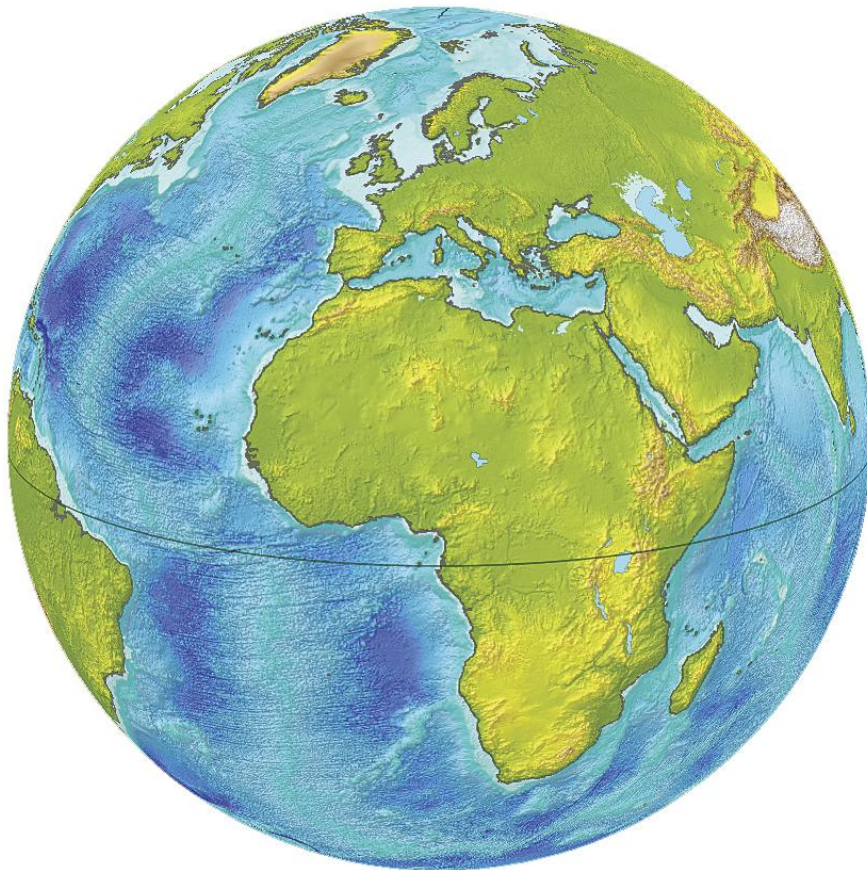
- Distribution of species
- Phenology
- Body size

Anomaly difference from 1961 - 90

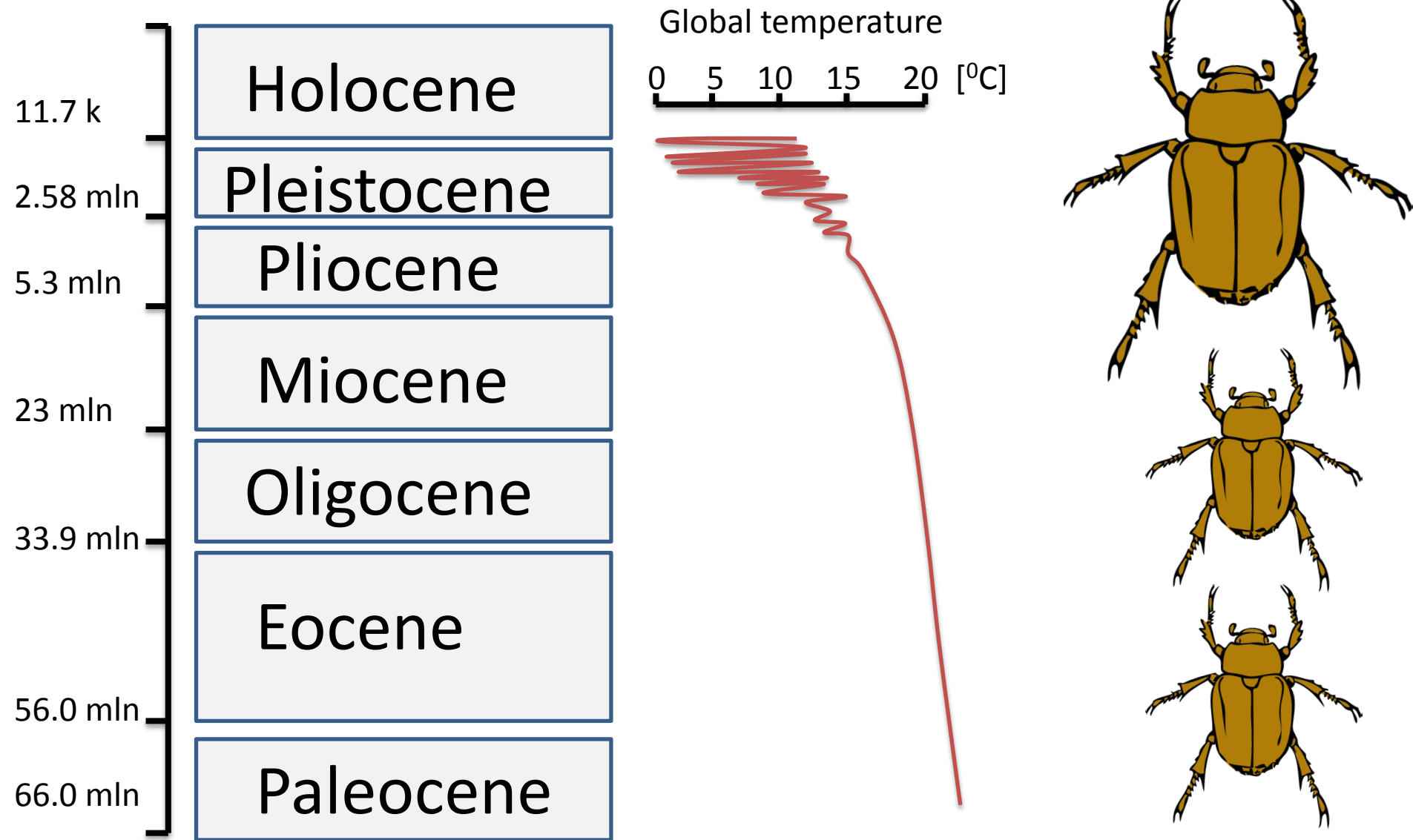


Declining body size

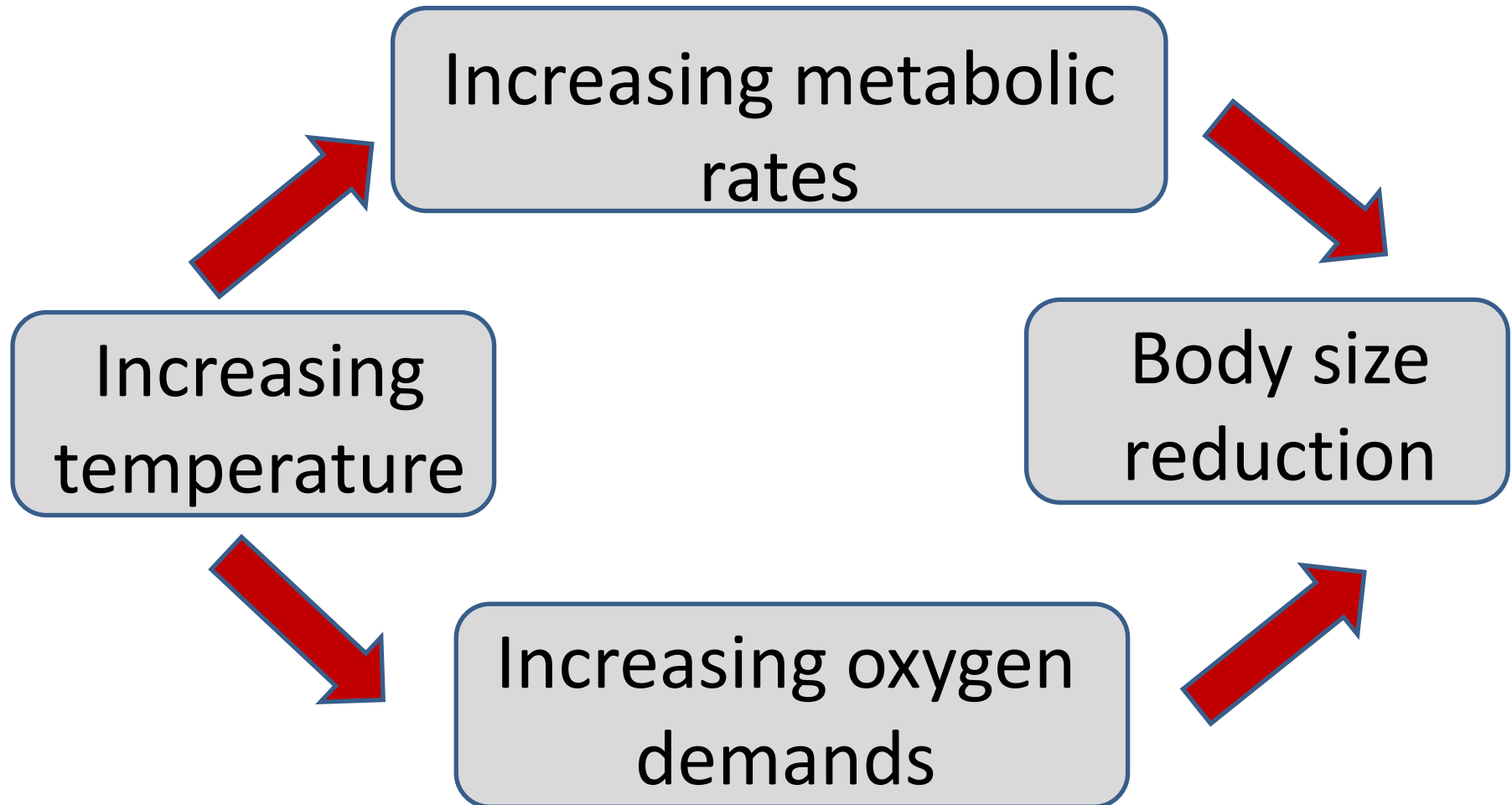
Bergmann's rule



Declining body size fossil evidence



Mechanism of body size reduction



Impact of body size reduction

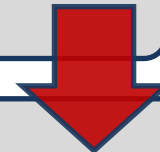
Community structure



Biological productivity



Energy flow



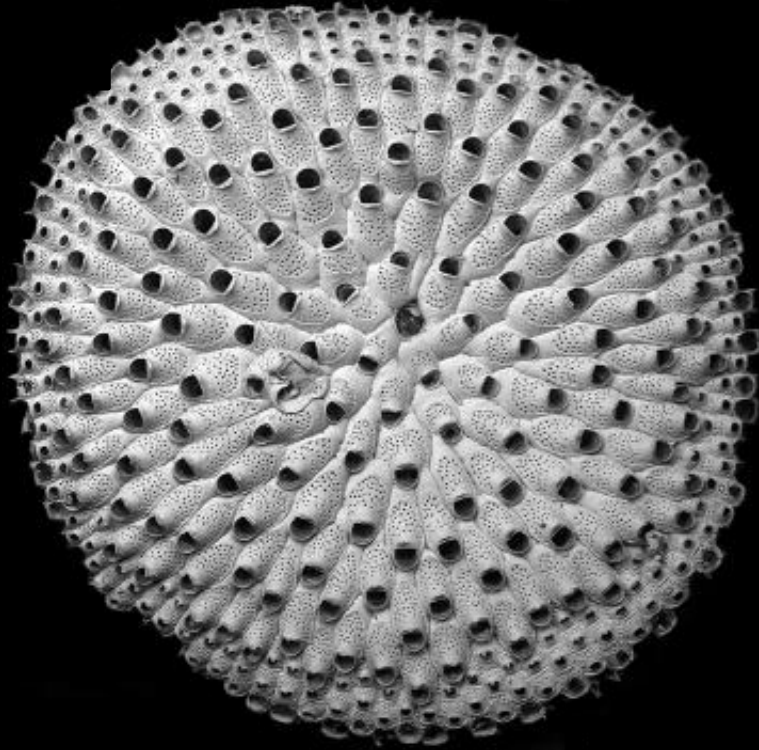
Functioning the whole
trophic web



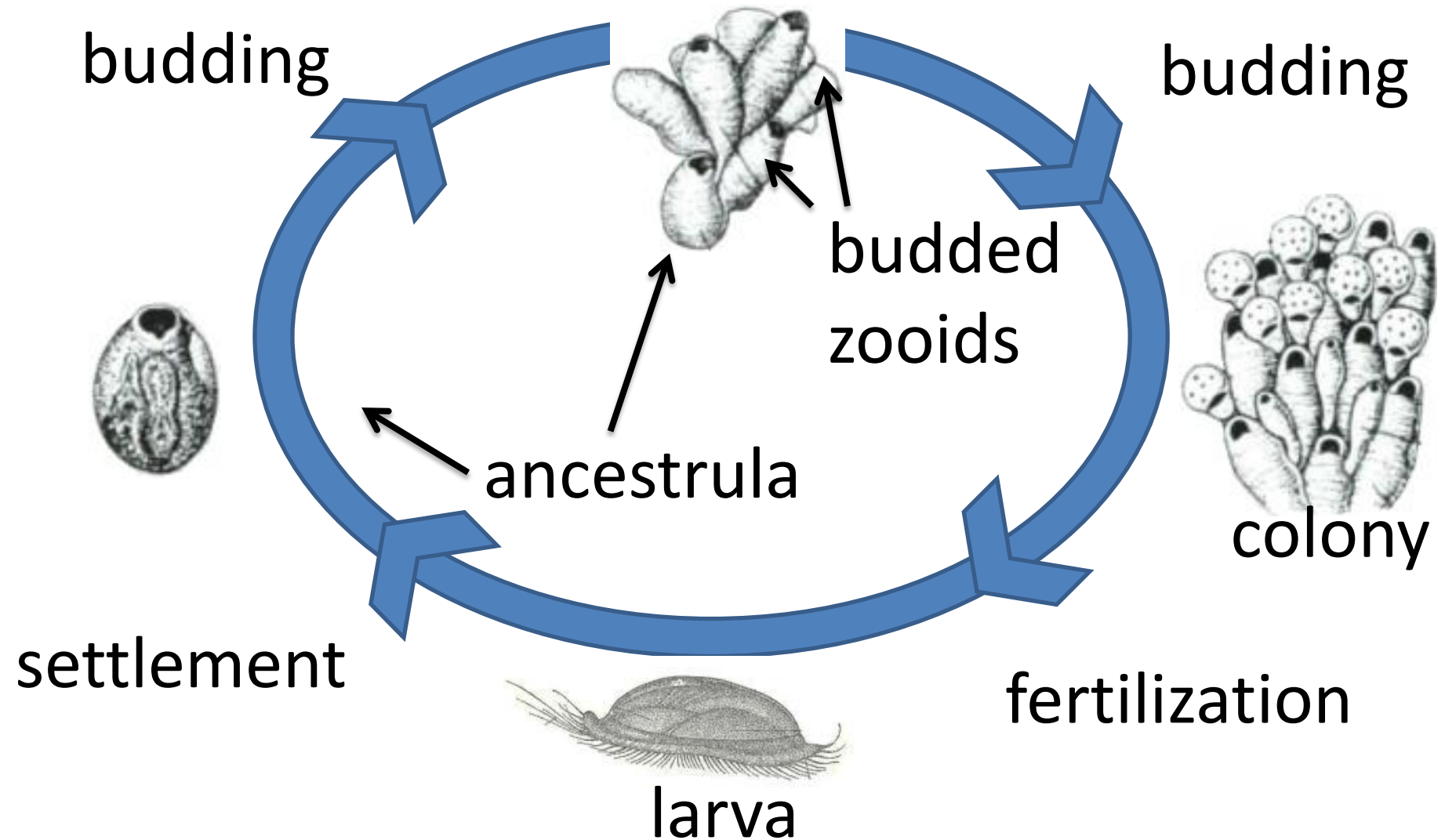
Declining Size – a general response to Climate **W**arming in **A**rctic **F**auna



Bryozoa



Bryozoan life strategy



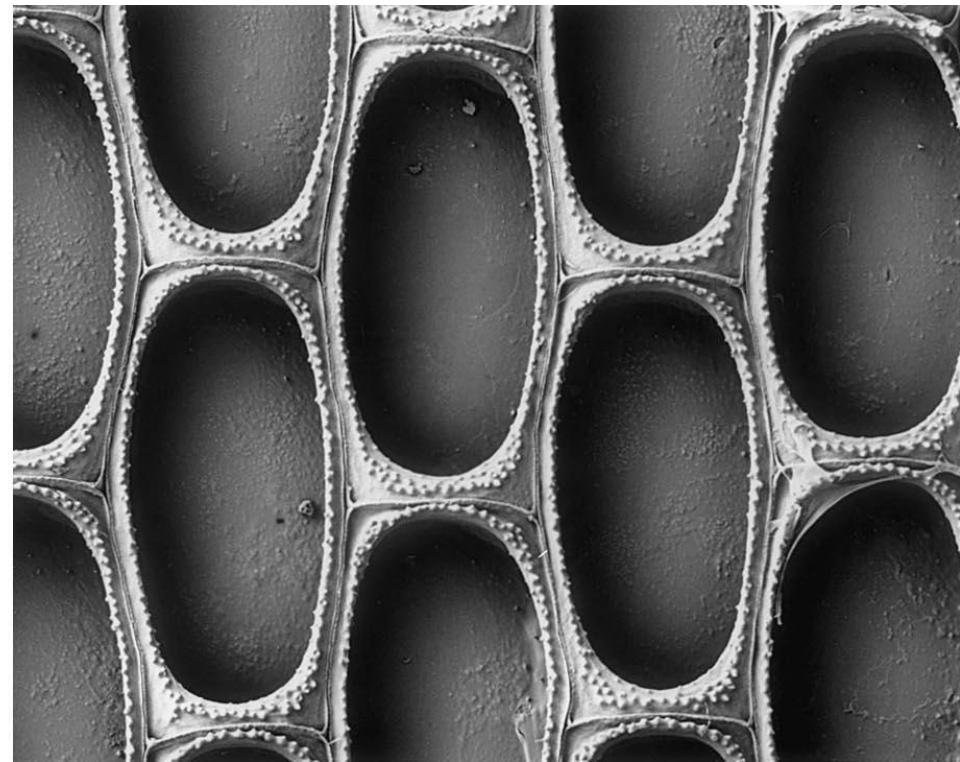
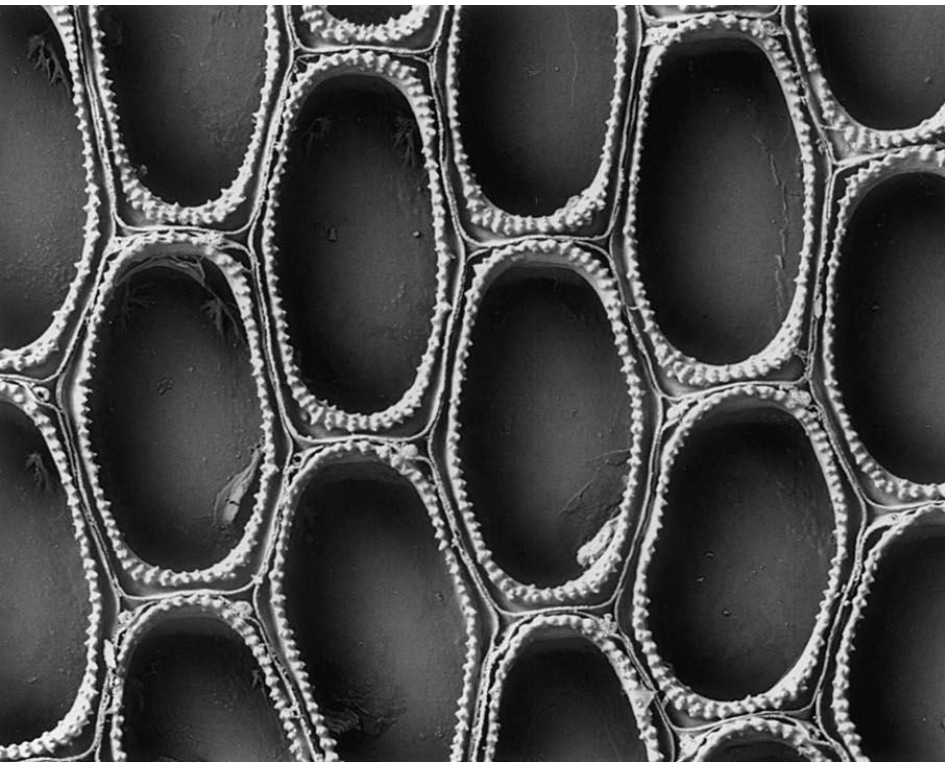
Temperature and zooid size correlation

Conopeum seurati

22 °C

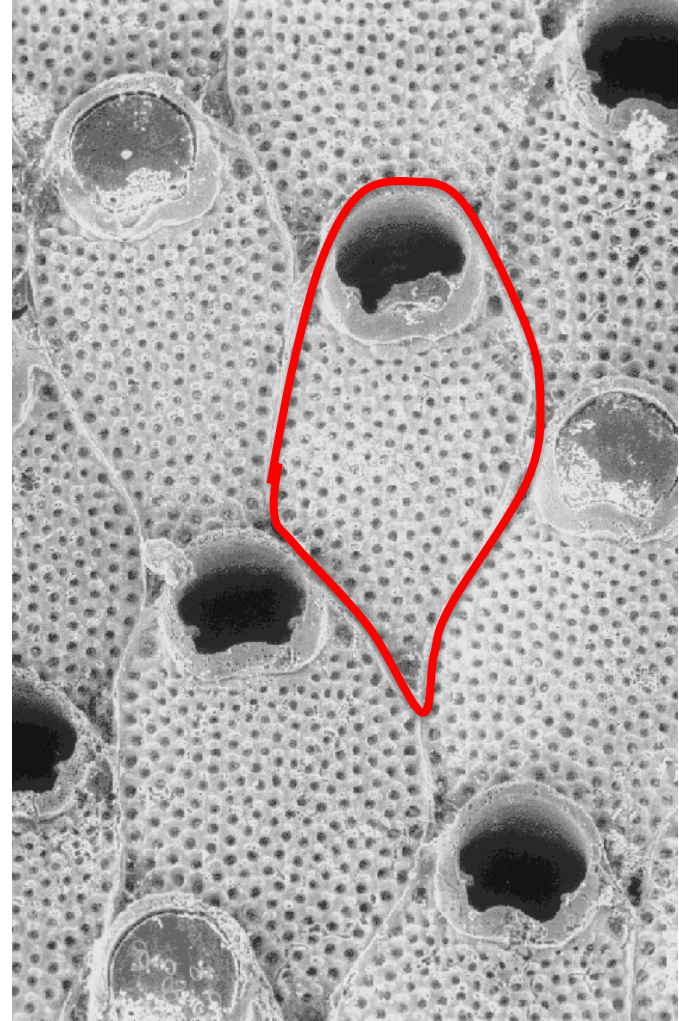
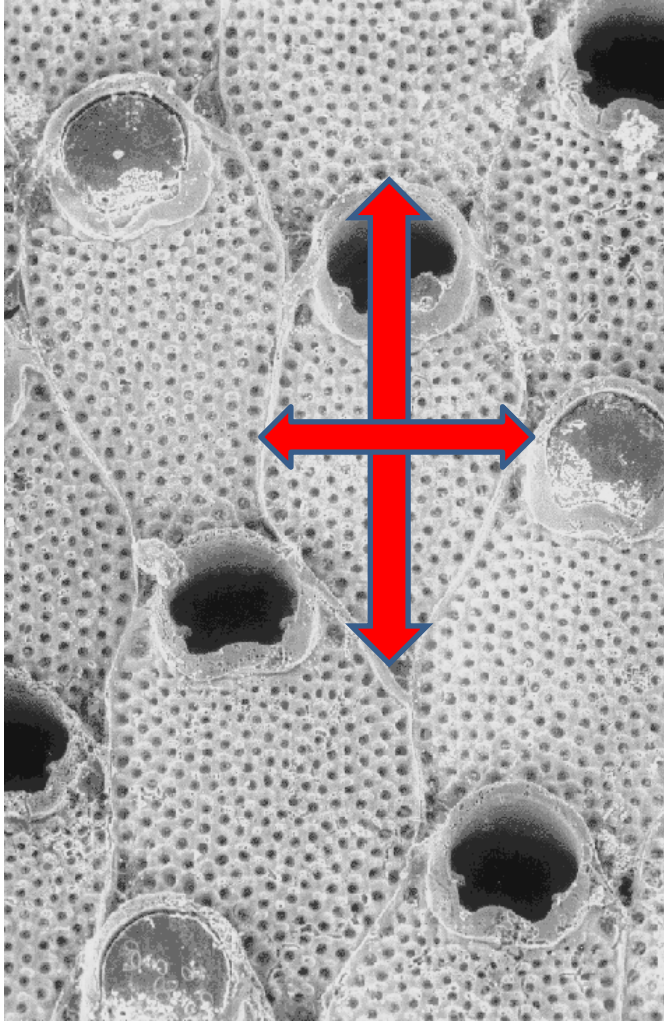
magnification about 80x

14 °C



After O'Dea and Okamura 1999

Methods



BIOICE Collection

1000 samples
527 stations
depth ranges:
15 – 3000m



Material

‘cold Arctic’

Ripfjorden

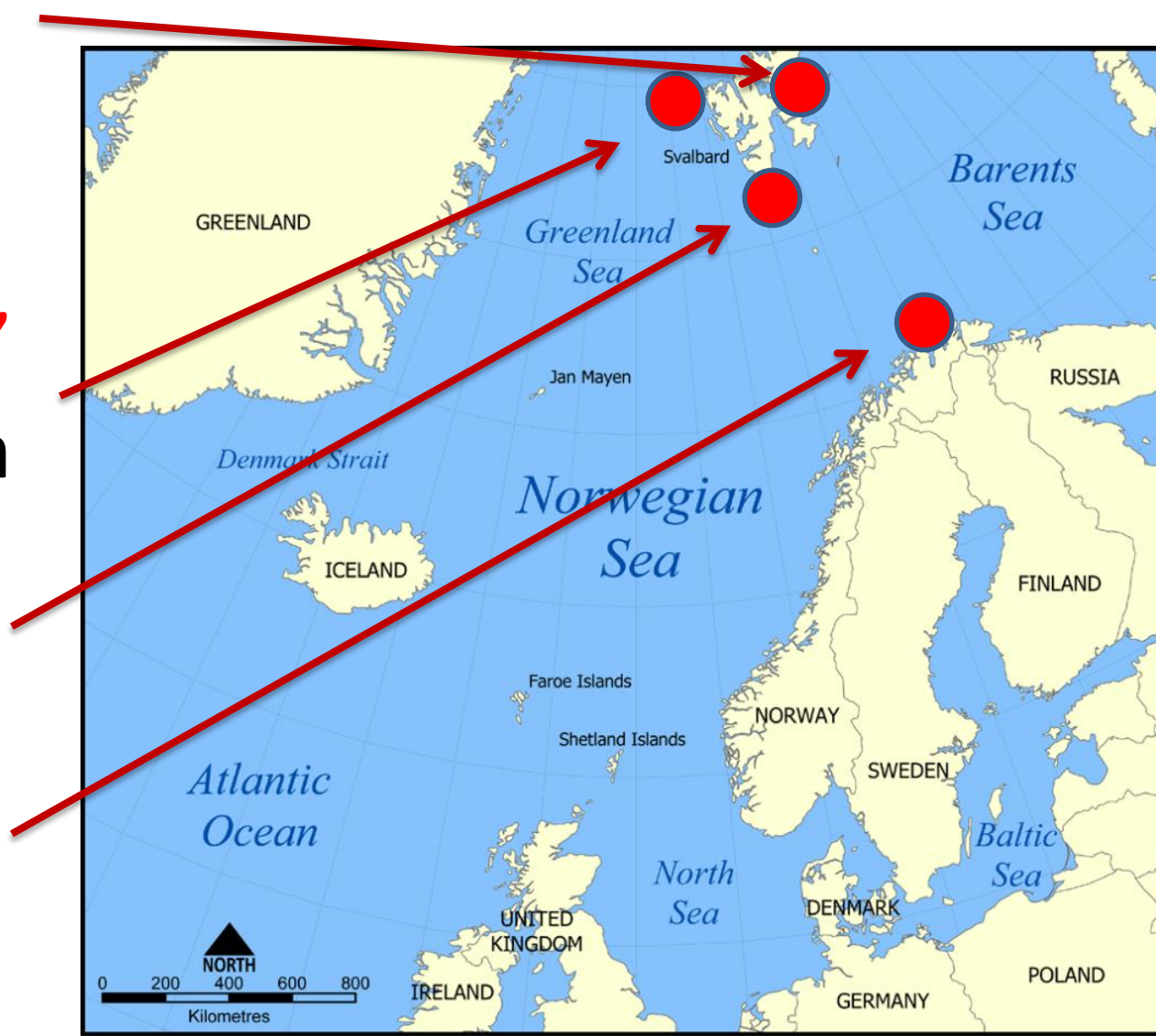
‘warm Arctic’

Kongsfjorden

Hornsund

subArctic

Ullsfjorden



Research tasks

1. Data set of Bryozoa zooid sizes in museum collections
2. Comparative analyses of zooid size in historical and recent collections
3. Assessment of size distribution in relation to spatial environmental gradients

The Bryozoan zooid size as a possible indicator of environmental changes

www.iopan.gda.pl/projects/Dwarf/