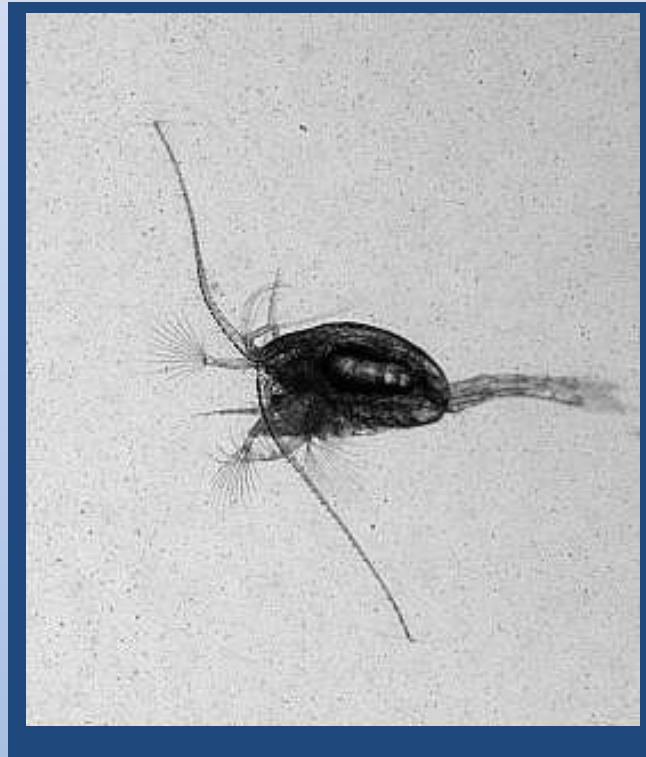


Population dynamics and life strategy of the copepod *Metridia longa* in a Greenlandic fjord, 2010.



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Supervisors: Torkel Gissel Nielsen & Thomas Kiørboe

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DTU



Location

The importance of the copepod species *Metridia longa* in the Godthåbsfjord at present and future climate conditions



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DTU



Greenland Climate
Research Centre

Location

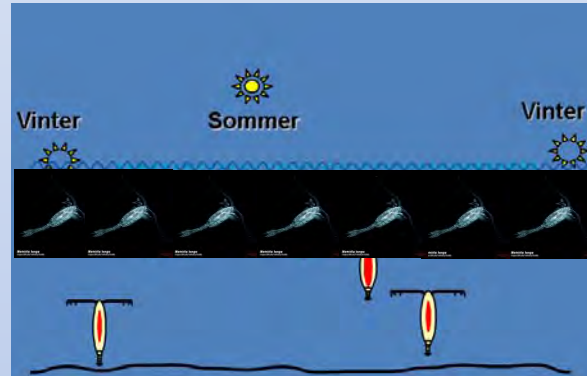
- Fishery is of high importance for the Greenlandic people – socially and financially
- This area is of high importance for the recruitment of Atlantic cod
- PhD student Rasmus Swaalethorp (rsw@aqu.dtu.dk)
- Information on why recruitment is successful in this area
- State the importance of *M. longa* as prey item for fish larvae



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Background

- The biology of *Metridia* is practically unknown and deviates from *Calanus*



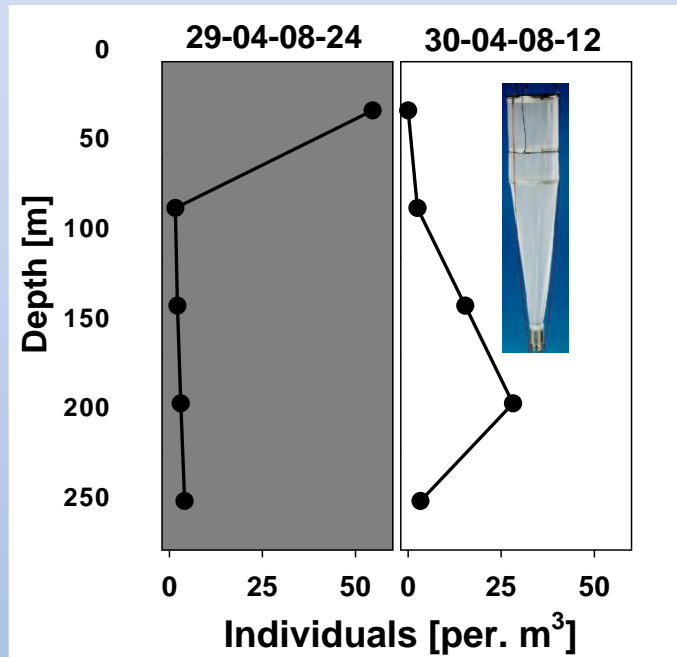
- Found active year long
- The ability to cope with low food concentrations during winter suggests an unselective food intake
- What do they feed on and how?



Background

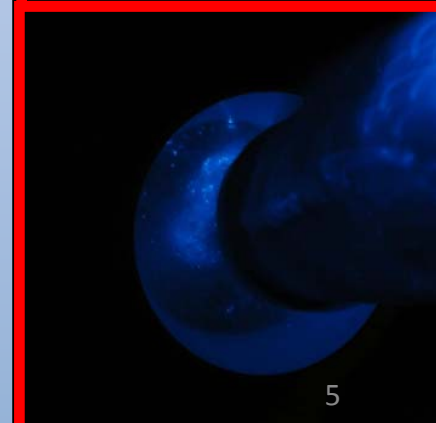
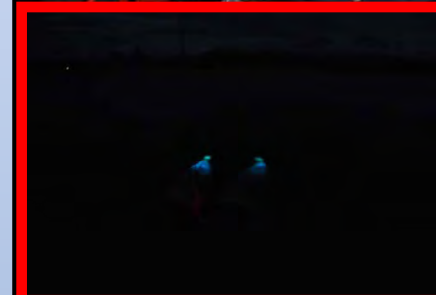
≈10 % of the biomass

Diurnal migration of *M. longa*



Same as running 280 km to go food shopping

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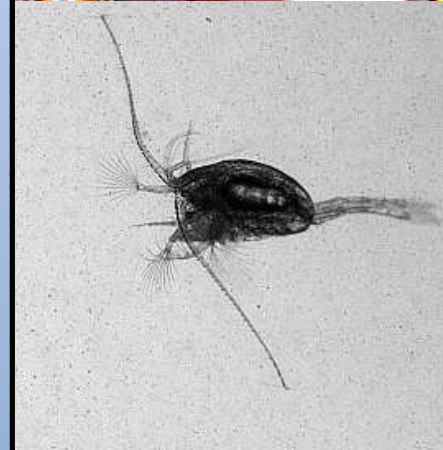
Aim

- To describe the biology of *M. longa* in relation to seasonal changes in the plankton community

The importance of the copepod species *Metridia longa* in the Godthåbsfjord at present and future climate conditions

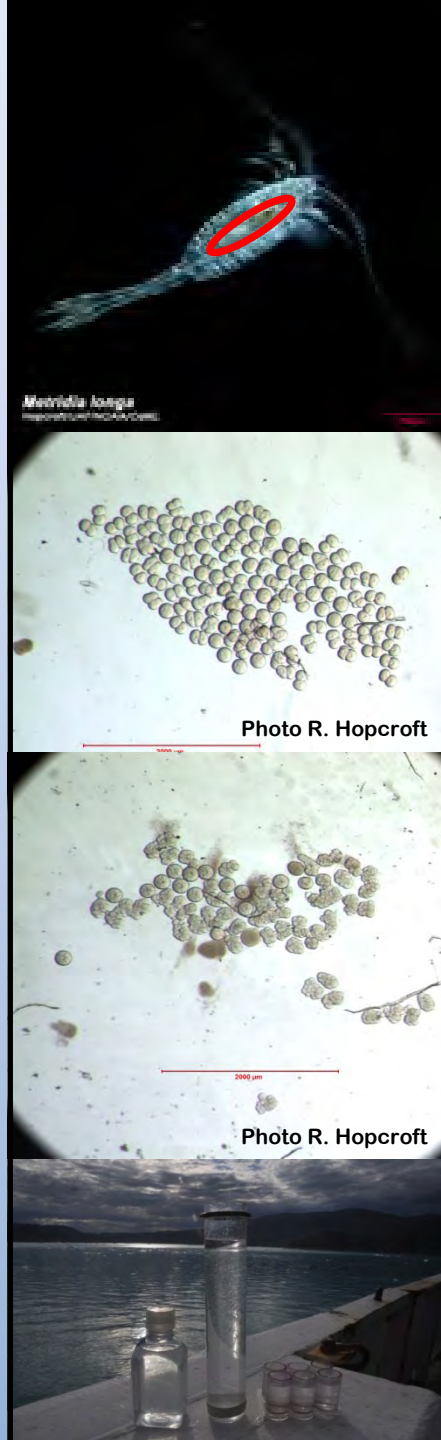


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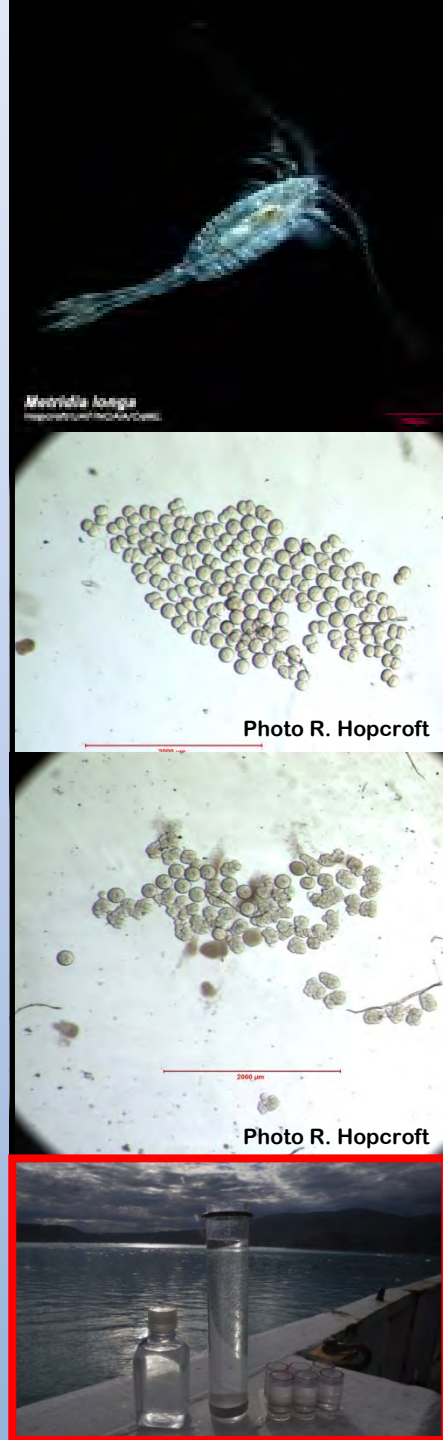
Parameters measured

- Hydrography during the season
- Abundance of the dominant large copepods
- Migration patterns
- Ontogenetic succession
- Carbon and lipid content of *M. longa*



Parameters measured

- Egg and fecal pellet production of *M. longa*, *C. finmarchicus* and *C. glacialis*
 - Compare different incubation methods
- Gut fluorescence
- Possible food objects for *M. longa* - grazing experiment



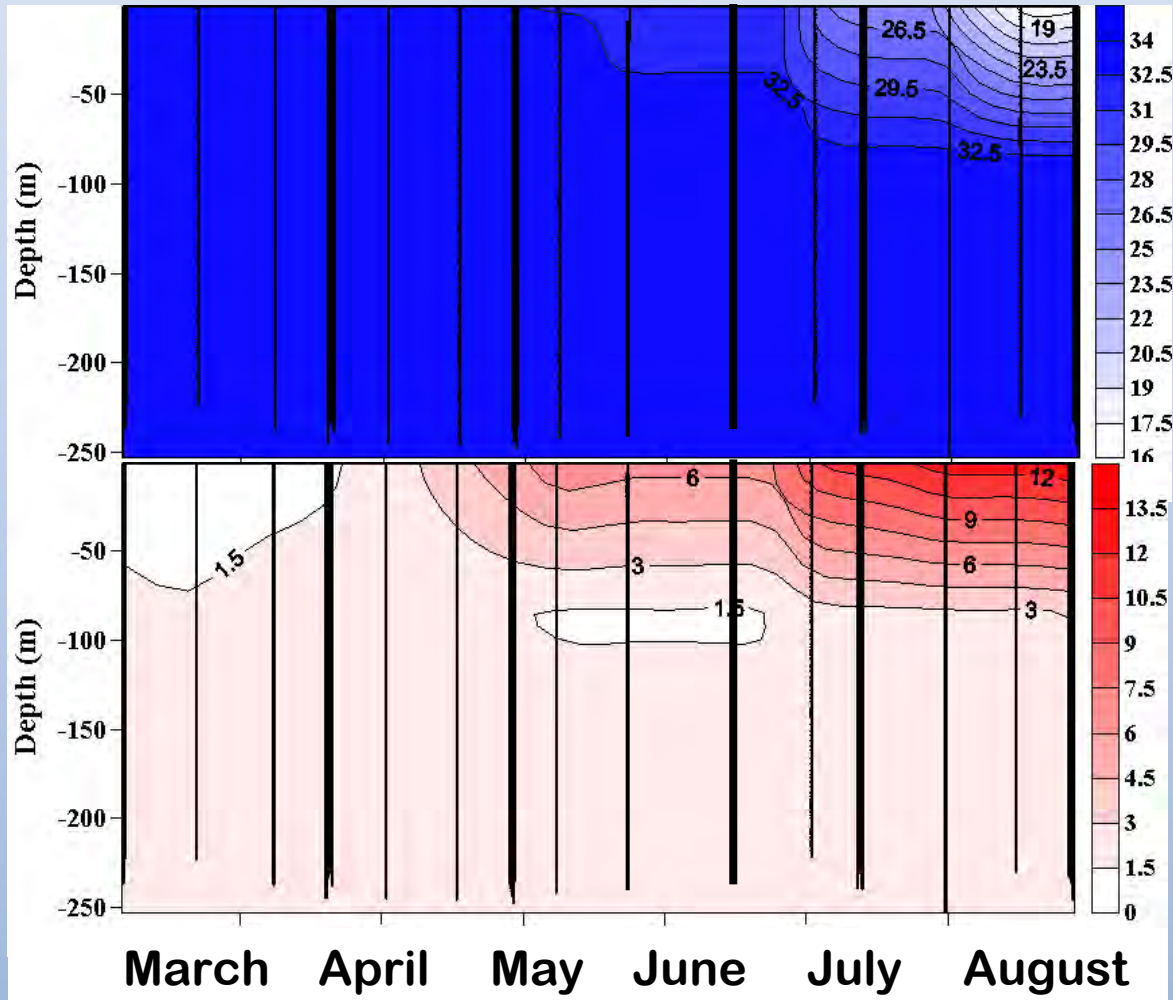
Metridia longa
Image courtesy of R. Hopcroft

Photo R. Hopcroft

Photo R. Hopcroft

Results

Hydrography



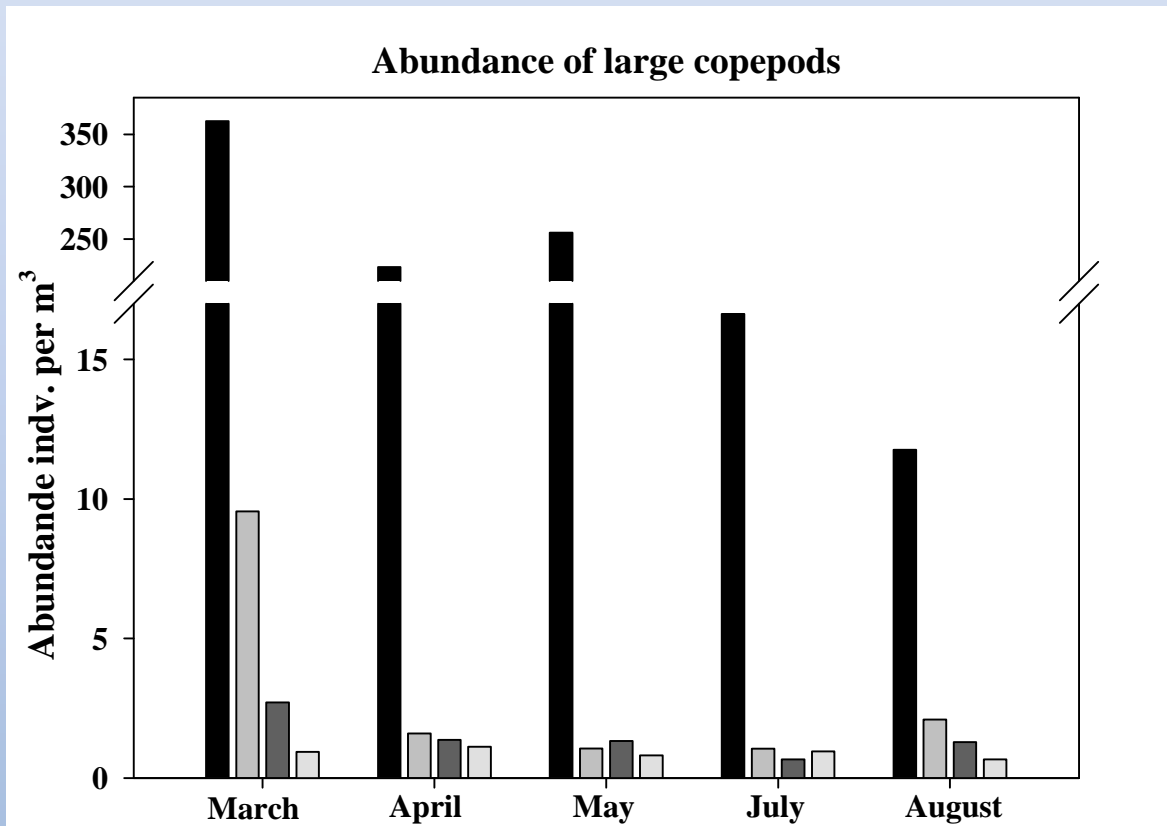
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Results

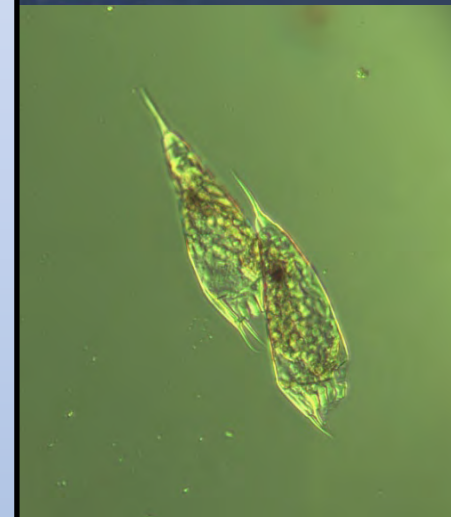
Abundance

The importance of the copepod species *Metridia longa* in the Godthåbsfjord at present and future climate conditions



≈ 95 % of the large copepod abundance

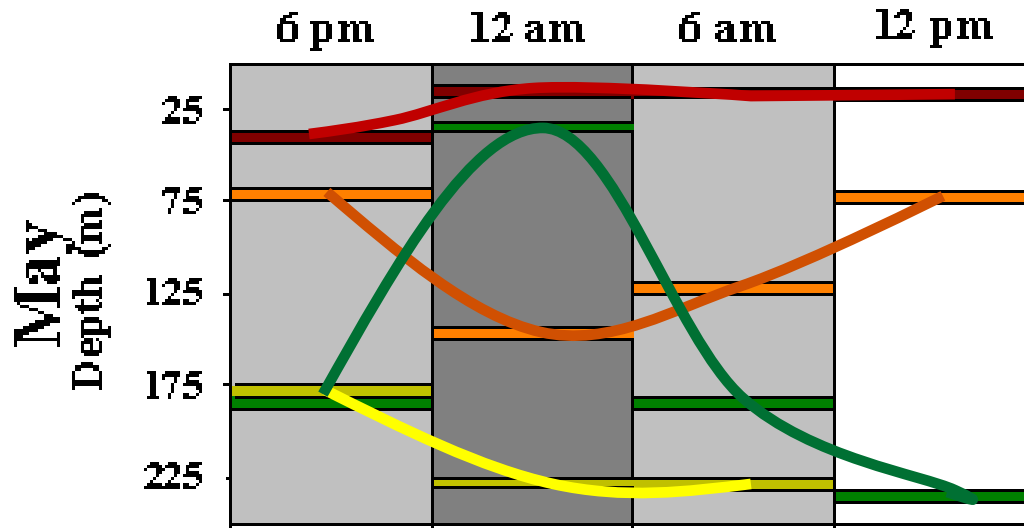
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Results

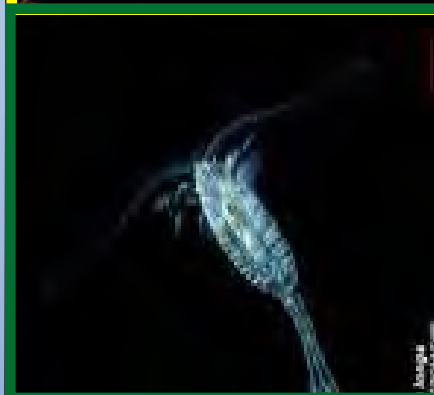
Migration patterns

Distribution of maximum abundance of large copepods



- C. finmarchicus*
- C. glacialis*
- C. hyperboreus*
- M. Longa*

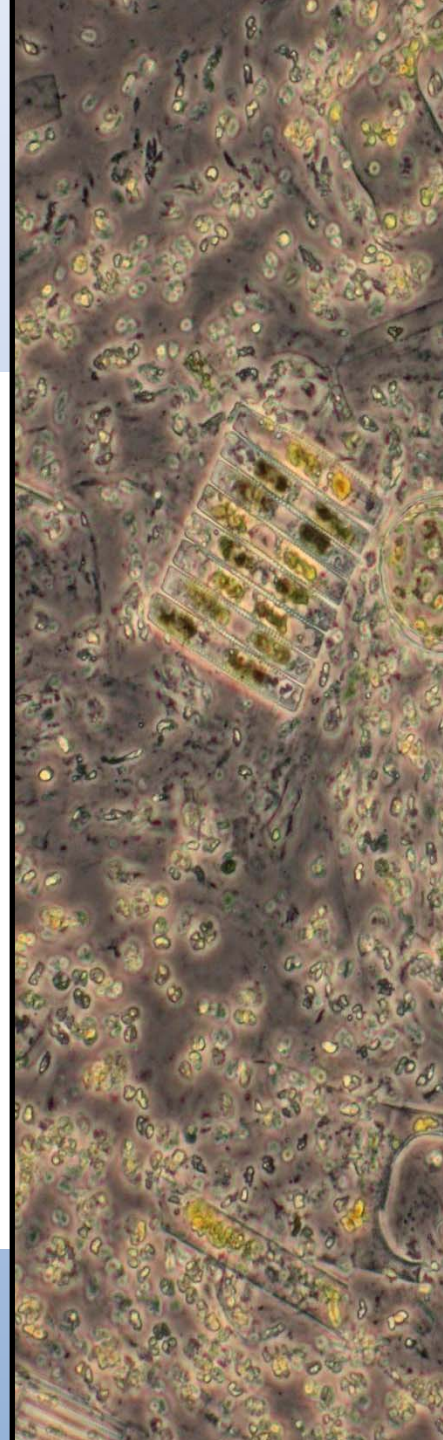
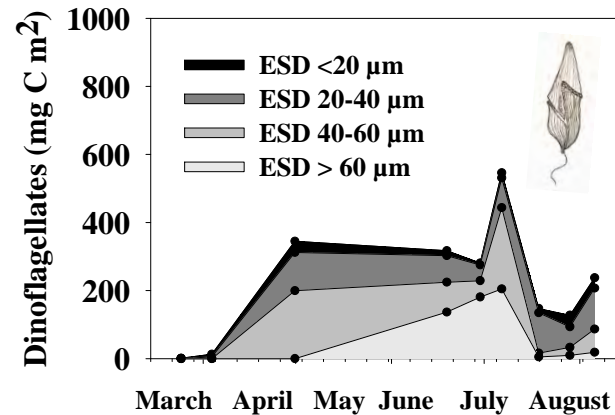
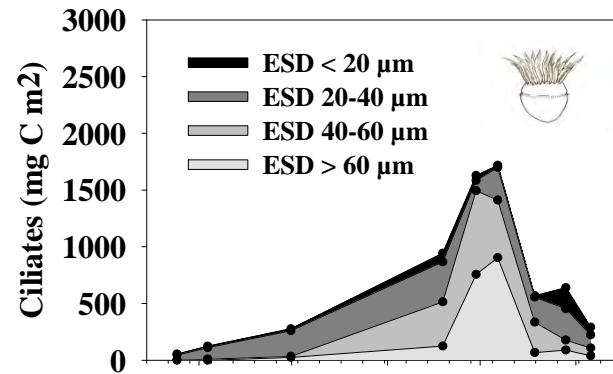
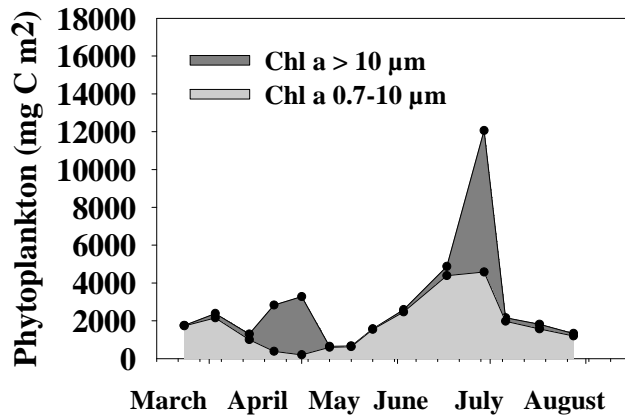
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Results

Chl *a* and protozooplankton

- Possible food objects - Integrated top 50 meters



Results

Grazing experiment - August

49 x 600 ml bottles with water from 20 m



7 start

} t_0



14 x 1 *M. longa*

} t_{12}



7 blank



14 x 1 *M. longa*

} t_{24}

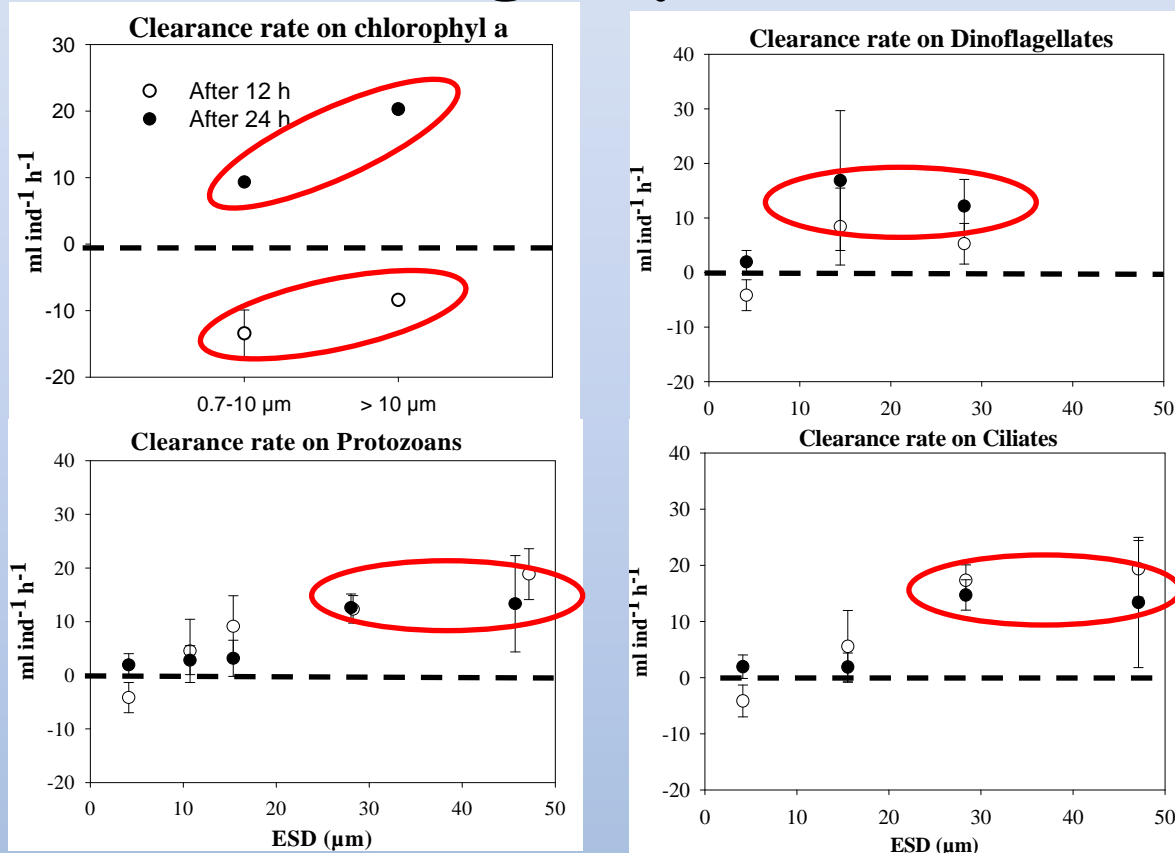


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Results

Grazing experiment



Grazing on phytoplankton is important – also indicated by the gut fluorescence measurements skh@aqu.dtu.dk



Results

- Now we have an idea on what is available for *M. longa* as well as what they eat during part of the season!
 - more data to analyze
- How do they feed?

