

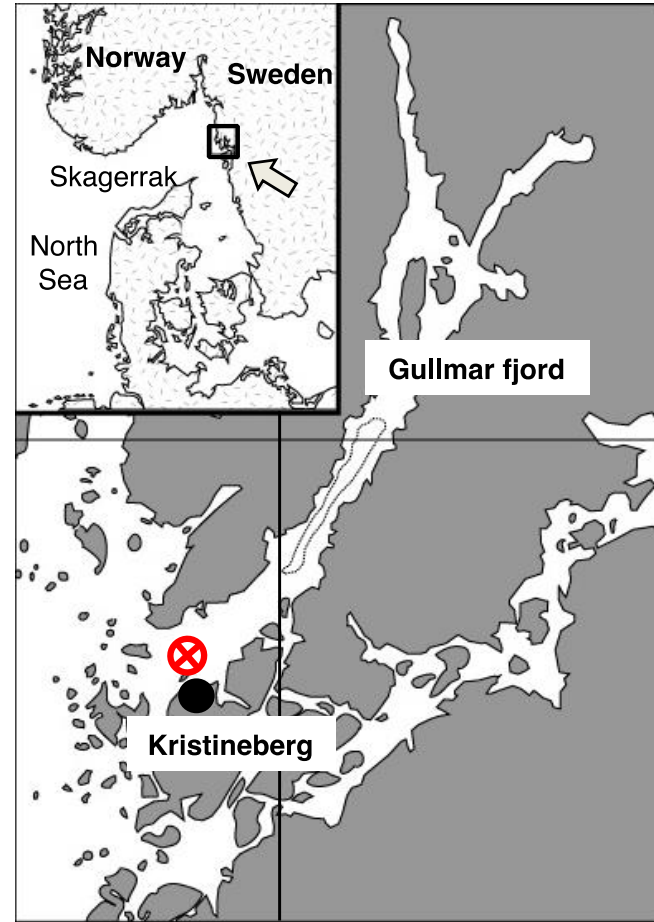
Trophic cascades over three trophic levels in
a coastal food web—
an 8-year study of the ctenophore
Mnemiopsis leidyi in the Gullmar Fjord

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Sven Lovén centre—Kristineberg,
University of Gothenburg

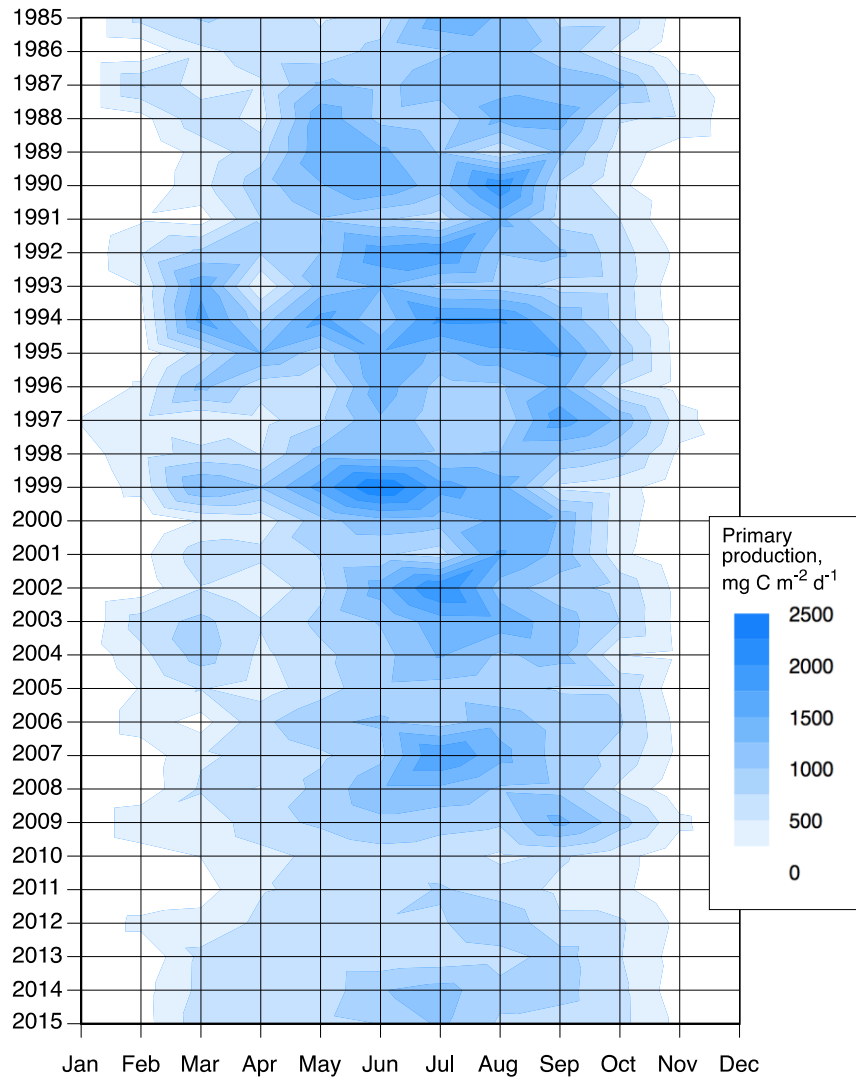
Lene Friis Møller
Danish Shellfish Centre—DTU Aqua



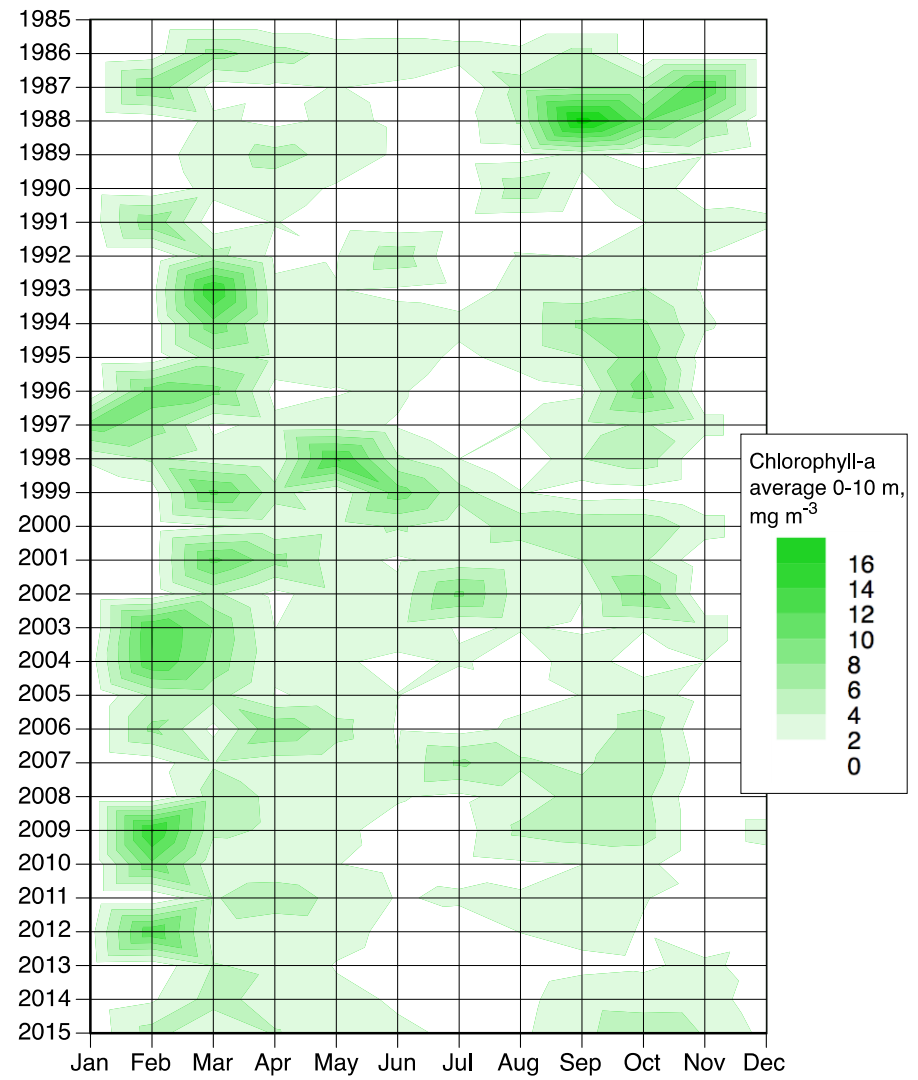
30 year times series of primary production and chlorophyll in the Gullmar fjord



Primary production:



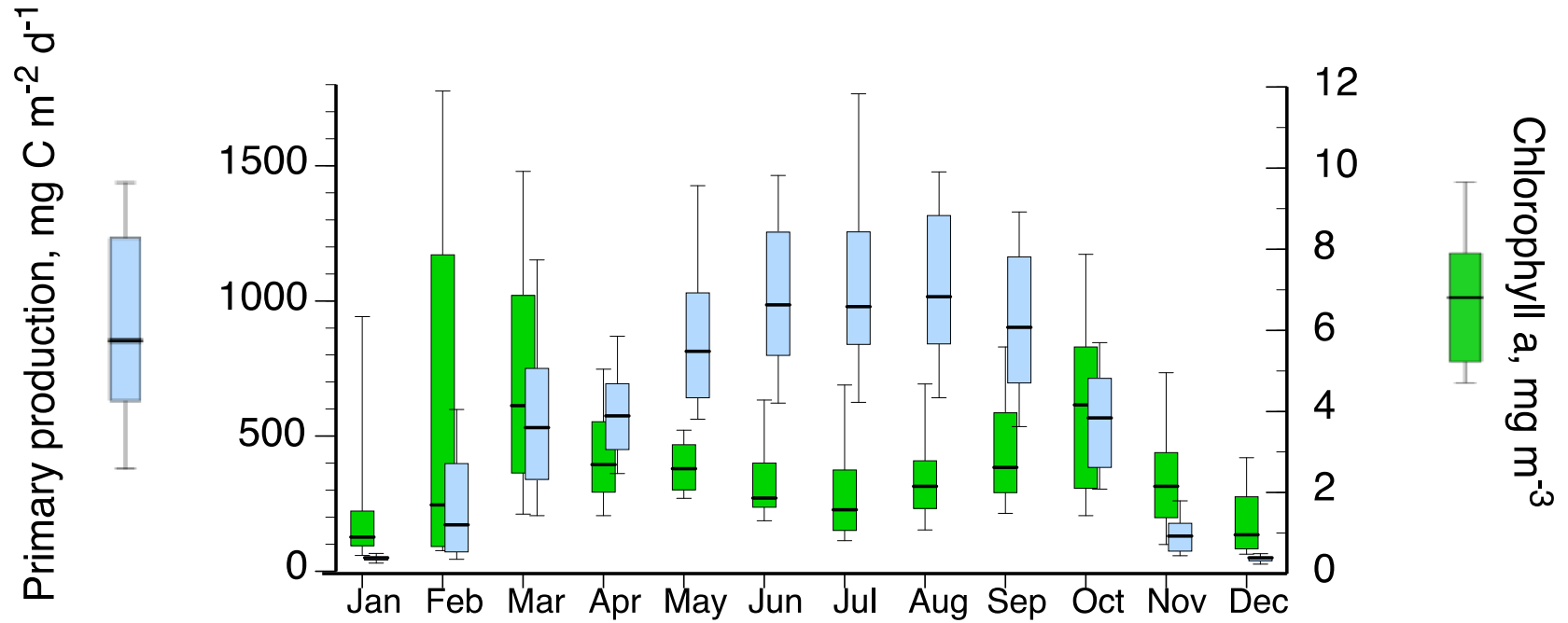
Chlorophyll a:



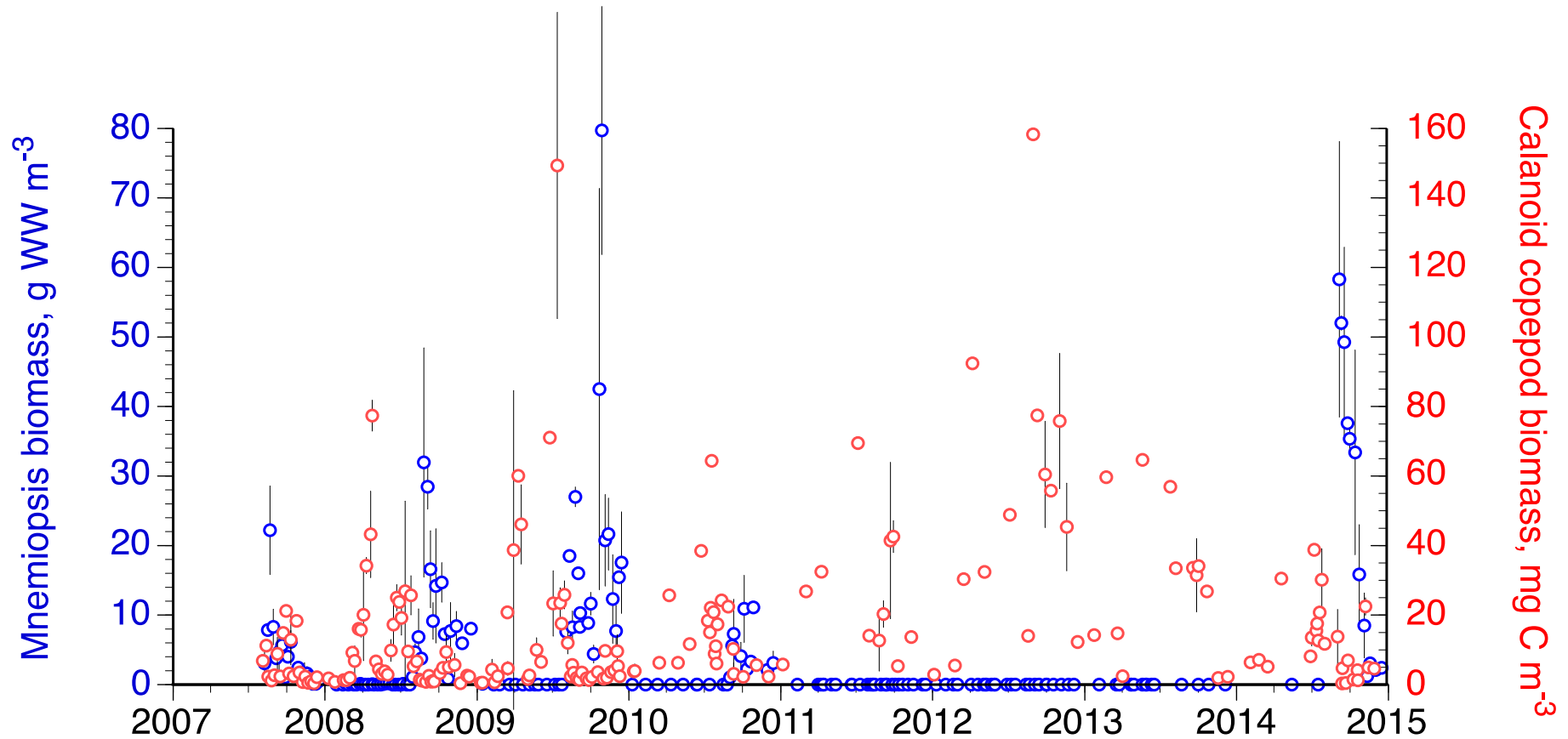


Mnemiopsis leidyi

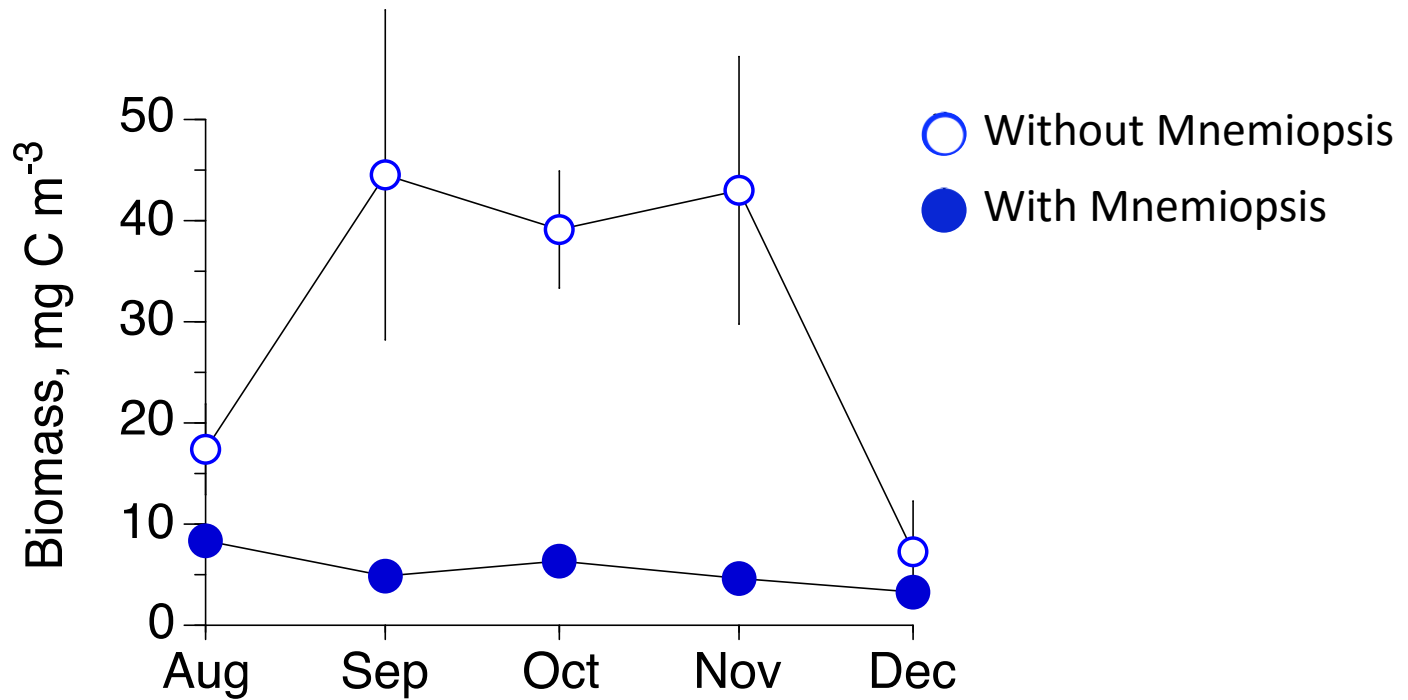
Primary production and chlorophyll:



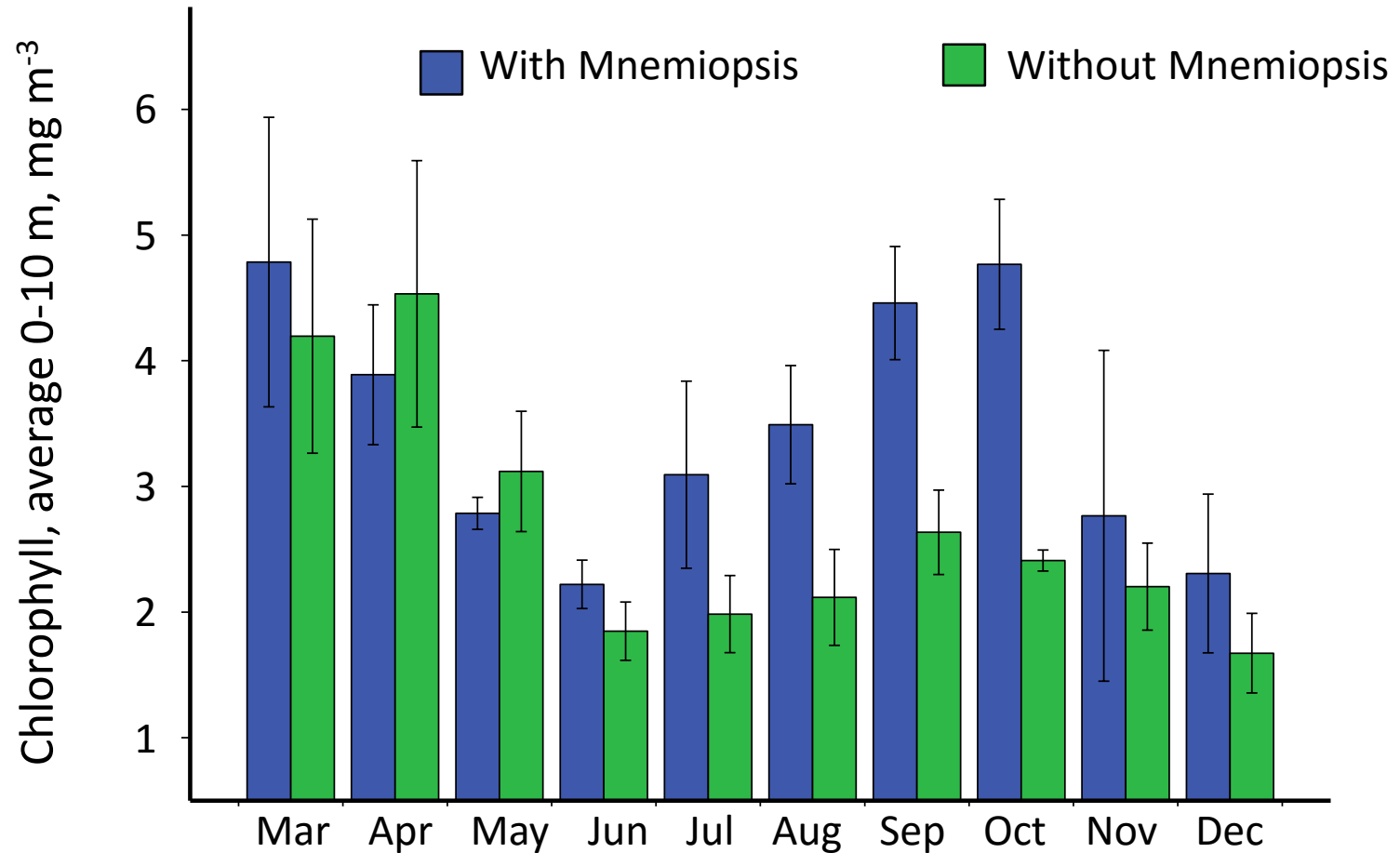
Mnemiopsis and calanoid copepods:



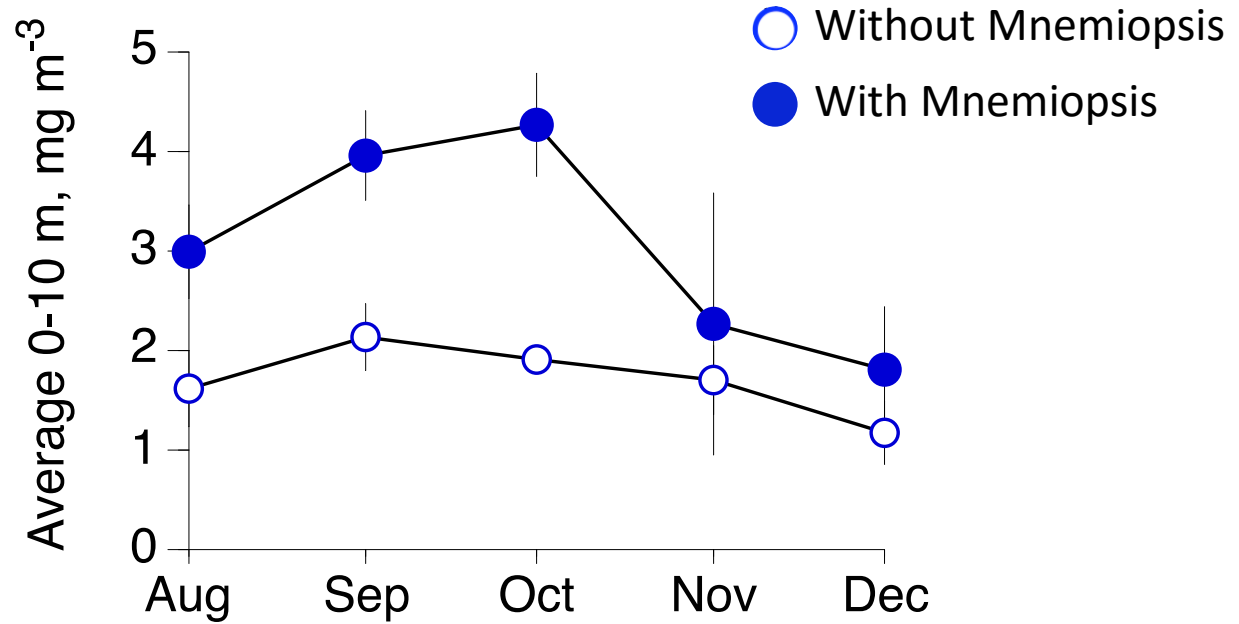
Calanoid copepods



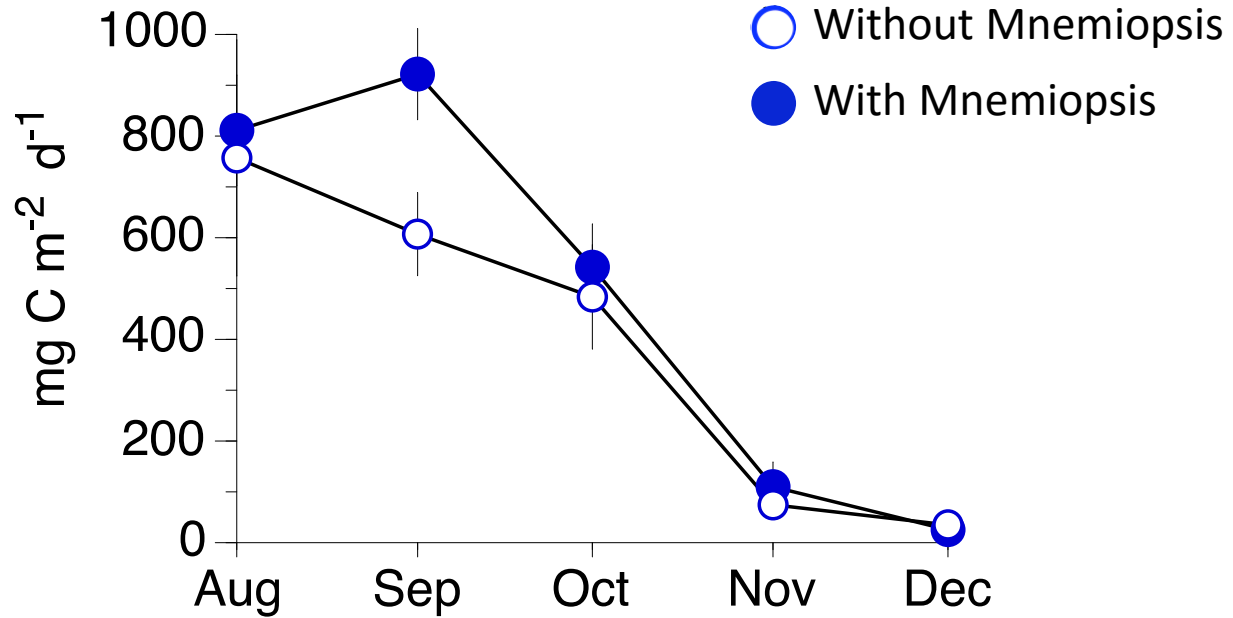
Chlorophyll in years with and without Mnemiopsis:



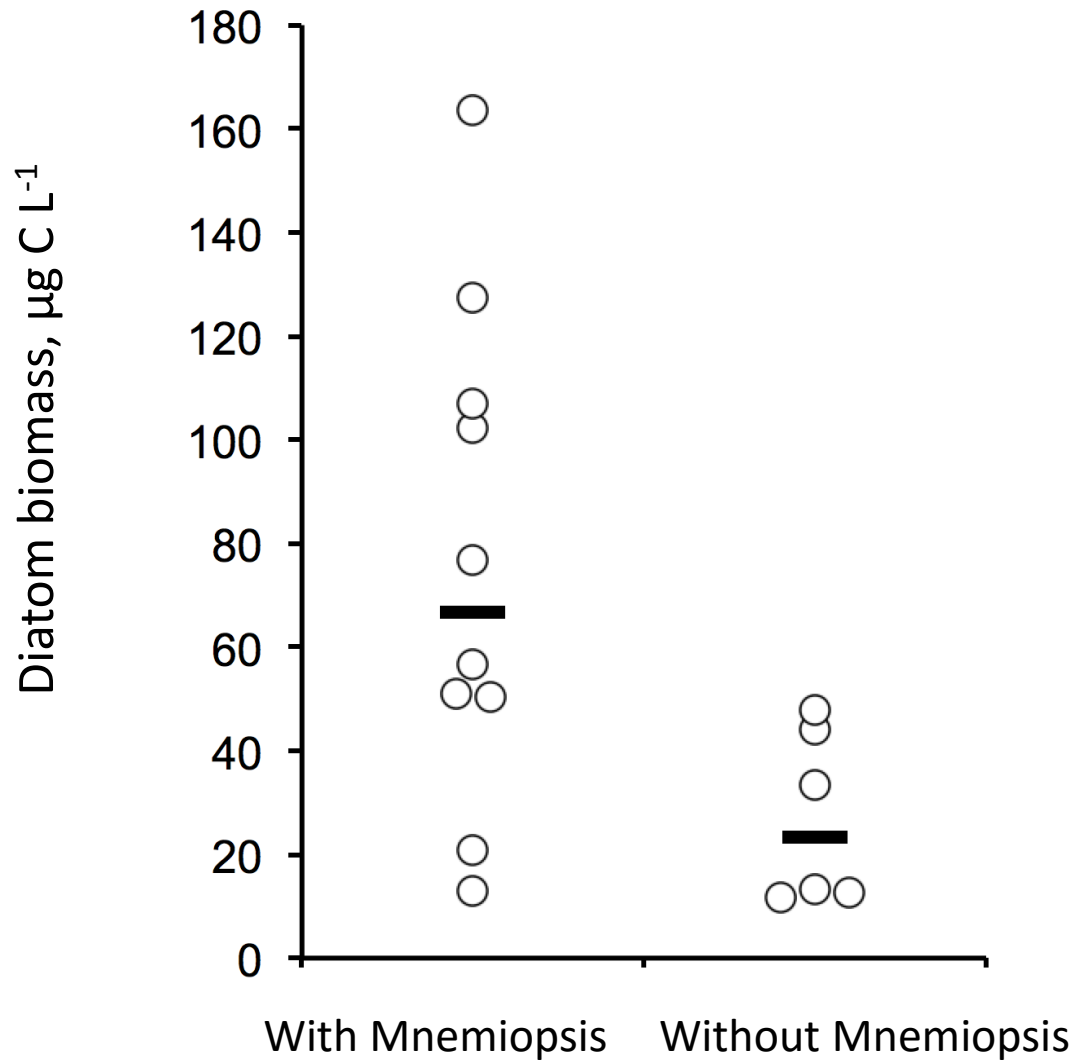
Chlorophyll a



Primary production



Diatom biomass in Sept and Oct 2007-2014



Conclusions

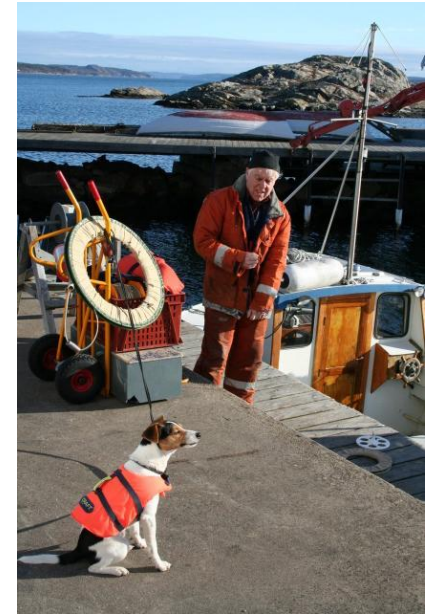
- The invasive ctenophore *Mnemiopsis leidyi* can significantly change the pelagic ecosystem during autumn in the Gullmar Fjord
- In years with *Mnemiopsis*:
 - Copepods almost disappear
 - Chlorophyll increase as a result of trophic cascades
 - Diatoms instead of dinoflagellate dominate the phytoplankton
 - Primary production is not affected
- **Top-down control and trophic cascades can be observed even in productive and eutrophic coastal waters**



Acknowledgements

OddLindahl, Bodil Hernroth, Lennart Davidsson, Pia Engström, Hans Olsson and Lars Ljungqvist for running the monitoring programme.

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Odd Lindahl when it all began

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Microzooplankton and copepod interactions in summer:

