





ARISE M3 PhD studentship:
The impact of climate change on arctic food webs:
a molecular approach

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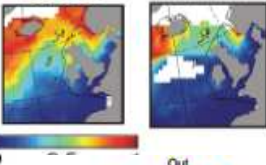




Q: Has environmental change altered the feeding habits of arctic zooplankton?

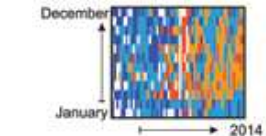


Copepods are a major component of arctic zooplankton .
They are omnivorous and opportunistic

A 1958-1981 2003-2005



B December Out

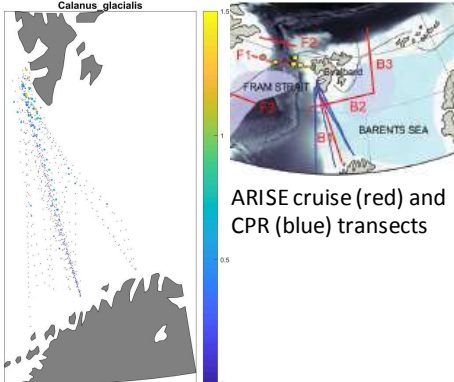


Since 1958 the Continuous plankton recorder survey (CPR) dataset has revealed:

- subarctic copepod spp. assemblages have retreated –mean no. sp/CPR sample/assemblage (A)
- Changes to phytoplankton, their prey, have also been observed (B)

Beaugrand et al. 2002. Science
SAHFOS Global status report 11.

Methodology to determine the diet of copepod plankton



Abundance of arctic copepod *C. glacialis* on ST arctic route: 2002-2015

- Use samples from
 - archival CPR samples (2002-15)
 - Field samples (Barents sea, Fram strait-ARISE cruise)
 - 15NAA Isotope analysis (trophic position of prey)
 - DNA analysis of gut content (taxonomic identification of prey)
 - Asses diet in relation to changes in ice cover and phytoplankton biomass from a combination of satellite and CPR phytoplankton measurements