
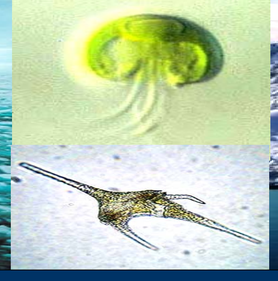


Mapping the genetic diversity of eukaryotic protists in the Arctic Ocean

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Introduction

Changes apparent in the Arctic climate system require evaluations of their impact on phytoplankton dynamics. Climate change is expected to cause shifts in the structure of Arctic plankton. Due to the fact that phytoplankton is the base of marine food webs, changes in structure will have an impact on the whole. In order to estimate consequences of climate change it is necessary to possess comprehensive information on phytoplankton structure including pico- and nanoplankton. Hence, this study focuses on mapping the diversity of phytoplankton in the Arctic, taking advantage of molecular methods. Samples have been taken during the RV Polarstern expedition ARK XXIII/3 in the Barents-/ Kara Sea and on ARKXXIV/2 in the “AWI-Hausgarten” area (Fram Strait).

Method

- Amplification of the **ITS** region (**I**nternal **T**ranscribed **S**pacer)
- Sequencing of 18SrDNA Clone libraries

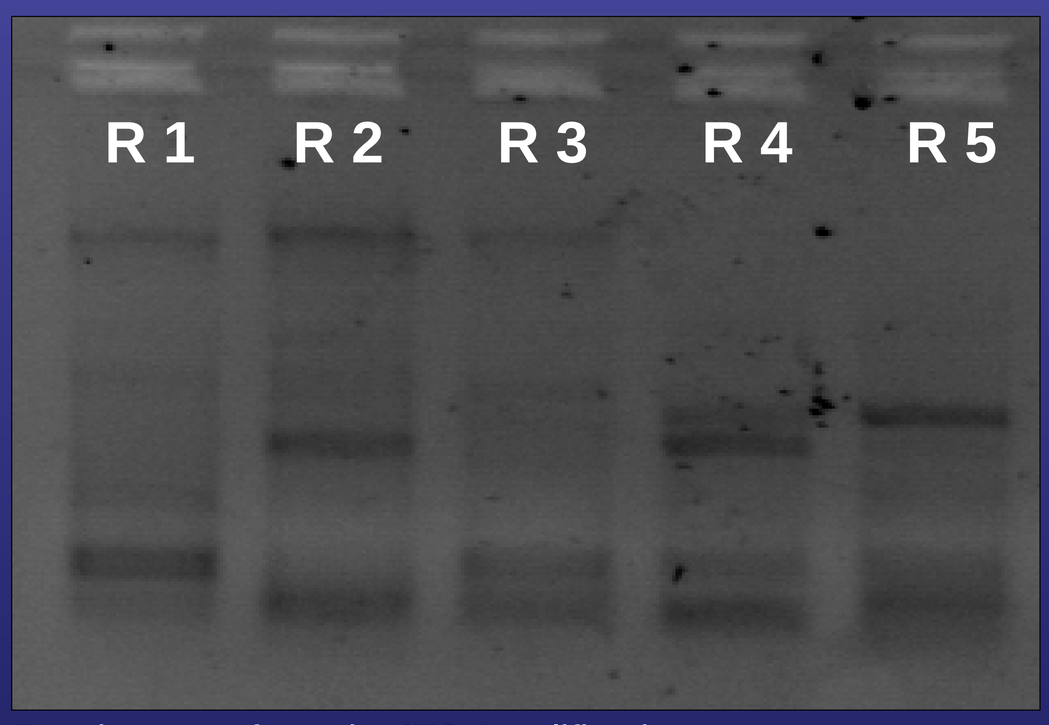
Objective

Investigation of eukaryotic protists:

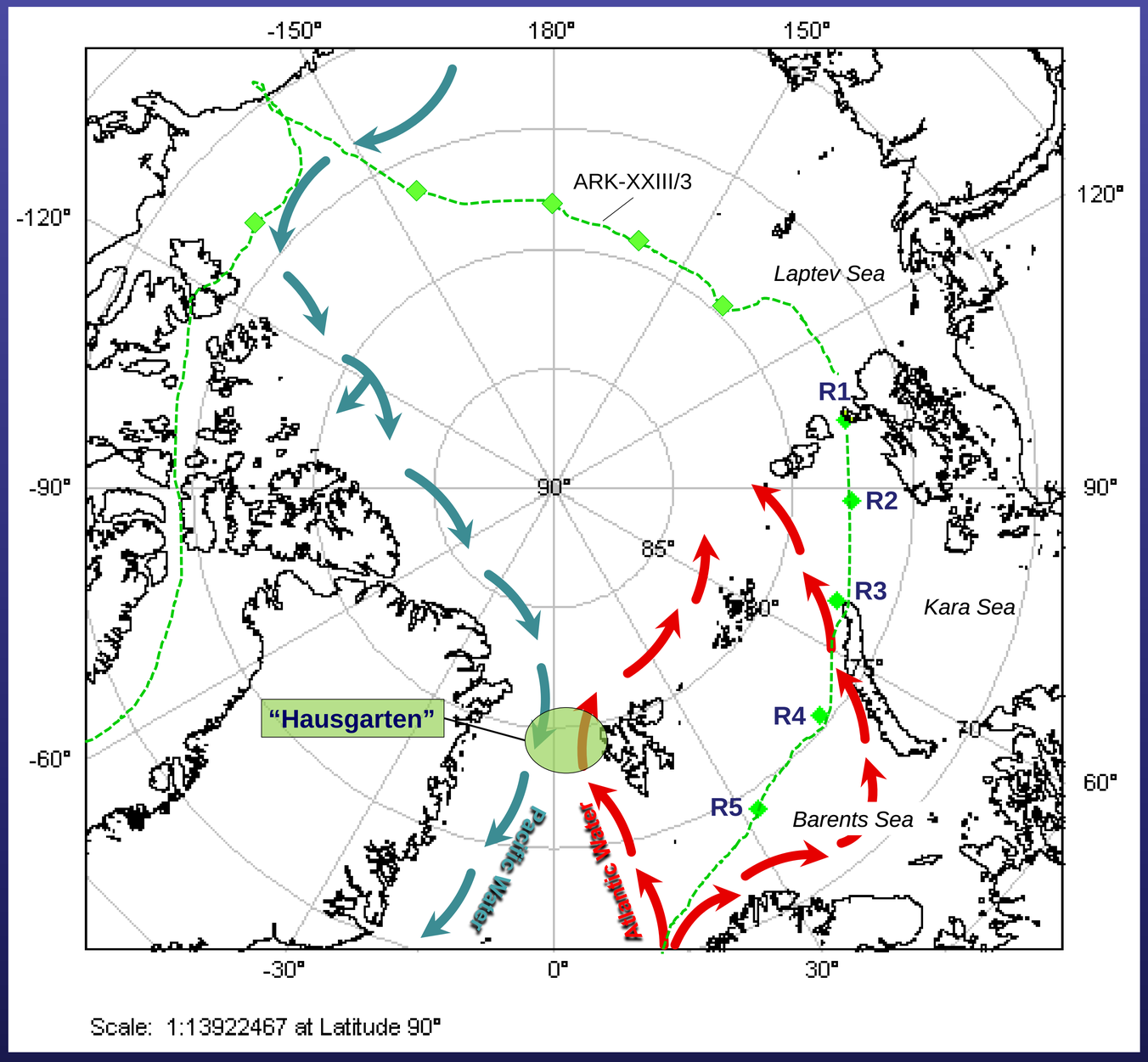
- **D**iversity
- **C**omposition
- **D**istribution & **B**iogeography

Preliminary results

ITS ⟹ Suggesting differences in the phytoplankton structure along Russian transect.



Band pattern from the ITS Amplification



Map of the current sampling areas

- AWI-Hausgarten observatory:
  Established in summer 1999, the Hausgarten comprises15 permanent sampling stations.
- RV Polarstern expedition ARK-XXIII/3
  Period: 08.‘08 till 10.‘08

Outlook

- First insight in the diversity of the stations at the Barents-, Kara- & Laptev Sea
- More detailed apportionment after sequencing
- Samples from the Beaufort Sea & Canadian Basin will be added