

The Arctic is the fastest changing environment on the planet. These changes are affecting biological processes at every level and in ways that are not yet fully understood.

The programme focuses on quantifying the impacts of climate change on the Arctic Ocean.

The programme's research contributes to refining numerical model predictions of the consequences on, for example, surface ocean productivity, food webs and ecosystem services.

Research Challenges

1. The controls on the spatial and temporal structure and functioning of Arctic ecosystems and biogeochemical cycles.
2. The impacts of multiple stressors on Arctic species, biogeochemical cycles and ecosystem structure and functioning.

Scientific output of relevance to stakeholders

- Projection of climate change impacts on ecosystem services
- Conservation and management of marine mammals
- Management of commercially important fish species
- Solutions and management strategies for environmental protection
- Detailed information on Arctic seafloor conditions

Further information:

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 Website www.changing-arctic-ocean.ac.uk
www.fona.de/de/arktis-im-wandel

32 PROJECT PARTNERS in the UK and Germany



£20 million, 5-year programme (2017-2022) to understand the effects of climate change on the ecosystems, biology and biogeochemistry of the Arctic Ocean.



Photo: Johan Faust, ChAOS

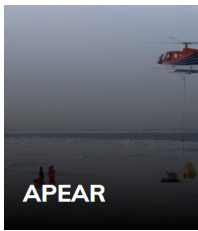
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The Changing Arctic Ocean is funded by the UKRI Natural Environment Research Council (NERC) and the German Federal Ministry of Education and Research (BMBF)

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APEAR

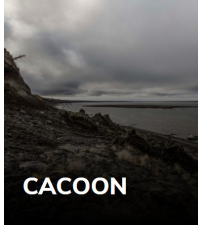
How does the exchange of Atlantic and Pacific waters in the Arctic Ocean impact the marine ecosystem?



Dr Yevgeny Aksenov
National Oceanography Centre, UK



Dr Benjamin Rabe
Alfred Wegener Institute, DE



CACOON

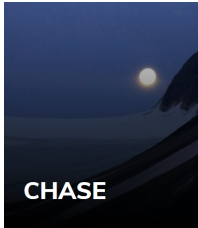
How will the Arctic Ocean respond to changing freshwater and ancient carbon delivery from land?



Dr Paul Mann
Northumbria University, UK



Dr Jens Strauss
Alfred Wegener Institute, DE



CHASE

What is the role of the biological clock in a changing Arctic Ocean?



Dr Kim Last
Scottish Association for Marine Science, UK



Prof Bettina Meyer
Alfred Wegener Institute, DE



Coldfish

How do key Arctic fish species respond to declining sea ice and warming?



Prof Nicholas Polunin
Newcastle University, UK



Dr Hauke Flores
Alfred Wegener Institute, DE



Diatom-ARCTIC

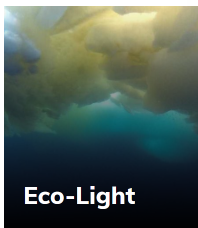
How do sea ice diatoms respond to environmental variability and climate change?



Prof Alexandre Anesio
University of Bristol, UK



Dr Marcel Nicolaus
Alfred Wegener Institute, DE



Eco-Light

What is the influence of changing sea ice and snow conditions on ecosystem function in the Arctic Ocean?



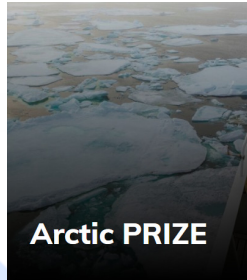
Dr Jeremy Wilkinson
British Antarctic Survey, UK



Dr Giulia Castellani
Alfred Wegener Institute, DE

16 PROJECTS

The programme has 4 large, NERC-funded projects that started in February 2017. A further 12 projects joined in July 2018, co-funded by NERC and the BMBF.

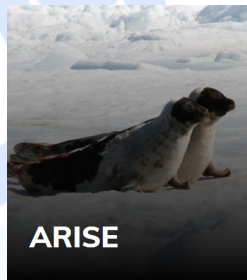


Arctic PRIZE

How does seasonal sea ice control Arctic productivity?



Prof Finlo Cottier
Scottish Association for Marine Science, UK

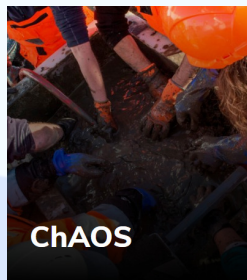


ARISE

Are food webs sensitive to Arctic change? How will they respond to future change?



Dr Claire Mahaffey
University of Liverpool, UK



ChAOS

How do changes in the surface ocean affect seafloor processes? Will carbon sequestration change?



Dr Christian März
University of Leeds, UK



DIAPOD

How does Arctic change affect *Calanus*, a key Arctic food source?



Prof David Pond
University of Stirling, UK

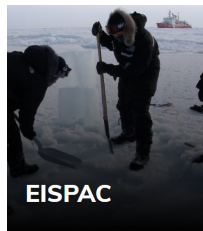


Dr Crispin Halsall
Lancaster University, UK



Dr Kirstin Dähnke
Helmholtz-Zentrum Geesthacht, DE

What effects do pollutants and plastic debris have on the base of the Arctic Ocean foodweb?



EISPAC

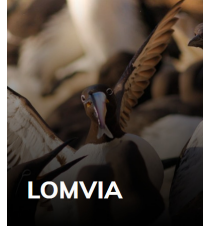


Dr Norman Ratcliffe
British Antarctic Survey, UK



Dr Patrick Roberts
Max Planck Institute, DE

How does climate change affect competition and species distribution in Arctic and temperate seabirds?



LOMVA

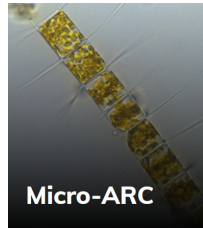


Dr Michael Cunliffe
Marine Biological Association, UK



Prof Anja Engel
GEOMAR, DE

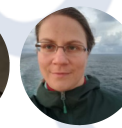
How do seasonal and climate-driven changes in the Arctic Ocean impact pelagic microbial ecosystems?



Micro-ARC

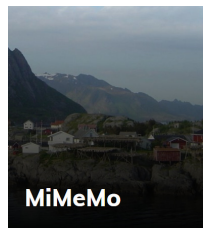


Prof Mike Heath
University of Strathclyde, UK



Dr Ute Daewel
Helmholtz-Zentrum Geesthacht, DE

How will climate change affect potential fishery yields from the Atlantic Arctic?



MiMeMo

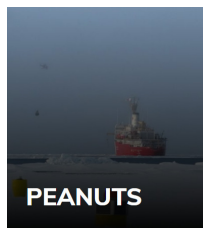


Dr Yueng-Djern Lenn
Bangor University, UK



Dr Markus Janout
Alfred Wegener Institute, DE

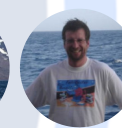
How does change in Arctic Ocean circulation affect nutrients in surface waters and biological productivity?



PEANUTS

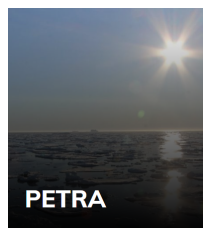


Dr Andrew Rees
Plymouth Marine Laboratory, UK



Prof Hermann Bange
GEOMAR, DE

How will warming, sea ice retreat and acidification in the Arctic Ocean affect production of climate-active gases?



PETRA