

New marine ecology research group

The ARCTOS network

By Paul Wassmann & Stig Falk-Petersen

THE ARCTOS NETWORK (www.nfh.uit.no/arctos) based in Tromsø, Norway, aims to build a leading marine ecological research group in Europe with its focus on the Arctic. Taking advantage of the excellent geographical and logistical position for research in the Tromsø-Svalbard axis, ARCTOS aims to increase cooperation in the High North by maintaining and strengthening a prominent international network.

Research under the ARCTOS umbrella aims to understand and predict long-term effects and changes in the Arctic marine ecosystem in response to changes in climate and human activities. The ARCTOS initiative was taken by scientists at the University of Tromsø, the Norwegian Polar Institute, Akvaplan-niva (all Tromsø) and the University Centre in Svalbard, with Paul Wassmann, Stig Falk-Petersen, Salve Dahle and Ketil Eiane in the lead. The network was officially opened on March 1, 2004.

ARCTOS research

ARCTOS research springs from a large knowledge gap identified by ACIA (Arctic Climate Impact Assessment) and the management plan for the Barents Sea. Priorities are: (a) studies of the ice edge and the area between the Polar Front and the ice edge, (b) areas with expected increase in petroleum-related activities, marine transport and fisheries, and (c) the need for increased cooperation with Russia in research and scientific education. The base for the network has been large, multi-disciplinary research projects. The core team of 35 scientists are currently involved in more than 30 research projects, and ARCTOS currently cooperates with six Nordic and 24 international research institutes. ARCTOS encompasses the original ideas for development

of cooperation in the Barents Region. This includes cooperation with leading Russian research institutions.

ARCTOS PhD School

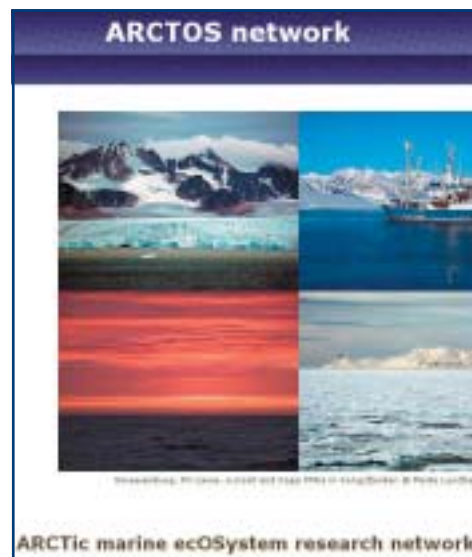
Arctic ecosystems, biogeochemical cycles and climate change in the anthropocene 1

A PhD School has been established under ARCTOS and is formally run by the Department of Aquatic BioSciences, Norwegian College of Fishery Science, University of Tromsø. More than 30 PhD, post-doc and masters students are currently taking courses offered through the PhD School, and international researchers are invited to come to the school to teach. A main goal of the school is to develop and secure a new generation of arctic marine ecologists.

ARCTOS Applied Science Forum (AASF)

Supplier of knowledge to the industry

AASF extends the basic research results derived through ARCTOS network activities to applied research goals and scientific outreach activities in support of societal needs. ARCTOS scientists hold extensive knowledge on the functioning and structure of Arctic ecosystems and how the organisms function in their arctic environment. In addition, research on effects of pollutants and



The ARCTOS website has information including members, students, research projects, courses, etc. Visit the site at <http://www.nfh.uit.no/arctos>.

oil components is important. A transfer of knowledge from research to environmental and fisheries management, as well as the oil industry, is a central element in ARCTOS.

Need for more research in the Barents Sea

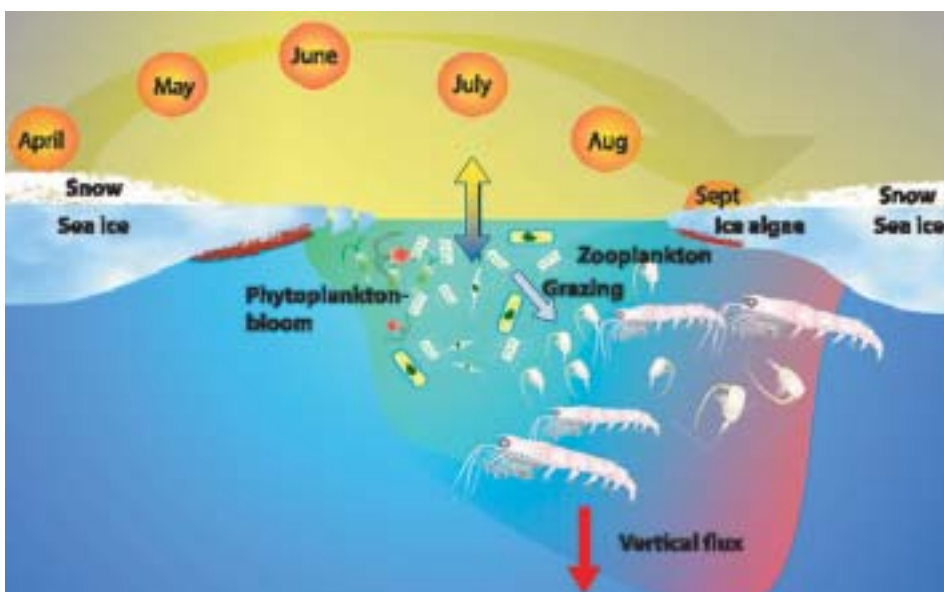
Successful environmental management must be based on quality research. To succeed in this work, we need a better understanding of the effects of climate change in the High North. Changes in the ice extent and transport, possible regime shift in the Barents Sea ecosystem, and changes in the food base for commercial resources need to be studied. Increased cooperation with Russia is necessary to develop a common understanding of the environmental challenges in the Barents Region, and increased international collaboration is needed with regard to the Arctic challenges. Basic and applied frontier research carried out by the ARCTOS network will be of direct use to society by creating a knowledge base for management and industry. This will be needed for adjustments and development of environmental surveys and environmental risk assessments, including scenario models for environmental change due to climate and anthropogenic effects.

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Simplified food web and processes in the Arctic marginal ice zone through the growth season.