PhD candidate -Analysis of the kelp forest ecosystem in Kongsfjorden, Svalbard

In the frame of a long term study at the Arctic Kongsfjorden ecosystem in Svalbard, the structure and food web interactions in the prevailing kelp forest ecosystem shall be analysed. The Kongsfjord area is of considerable interest as it already shows distinct indications of climate change which have however not been investigated in detail yet for the kelp forest and its associated fauna. Quantitative food web models in the Arctic are scarce and are also missing for this fjord although a large number of botanical and zoological studies have been performed here in the last decades. The existing data shall be reviewed and replenished with new data during two stays at the AWIPEV research station in Ny Alesund. Old and new quantitative field data of macroalgae and their associated invertebrates will be used for Ecological Network Analysis (ENA) in order to analyze the Arctic kelp forest food web structure and the effects of climate change on the functioning of the system.

Tasks: Species composition of macroalgae and animals, their abundance, and biomass will be studied in cooperation with the whole team in selected habitats of Kongsfjorden in summer 2012 and 2013. The focus of the PhD candidate will lie on the dominant macrobenthic and epibenthic components of the system. Production and respiration measurements of dominant floral and faunal components as well as their isotopic analysis shall be performed in order to establish a food web model for the system.

General skills and experience: The candidate should have a completed postgraduate degree (Master, Diploma) in Biology, Ecology (especially Marine Ecology) or Environmental Science. A scientific diving licence is a pre-requisite.

Project specific preconditions: The candidate has to work in the interface between organismic biology and modelling and should be interested in food webs. A broad background in ecology will be beneficial as well as practical experience in benthic research. His/her theoretical skills should include interest in mathematics and modelling. Some experience in static models, such as ECOPATH or ENA (Ecological network analysis) will be welcome.

The position is limited to 3 years. Places of work are the Wadden Sea Station Sylt and during summer the AWIPEV-station in Ny Alesund, Svalbard.

Further information: Dr. habil Harald Asmus (Harald.Asmus@awi.de), Prof. Dr. Christian Wiencke (Christian.Wiencke@awi.de)

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