



Master student (Biology/Zoology) for the topic "Respiration and trophic interaction of Arctic hard bottom communities in the course of ecological succession"

Research Division: Biosciences

The Section Benthic-Pelagic Processes offers the theme

"Respiration and trophic interaction of Arctic hard bottom communities in the course of ecological succession "

for a

Master thesis (Biology/Zoology)

Rationale

Knowledge of trophic interactions of faunal assemblages and community respiration of recently established macroepibenthic communities is scarce in Arctic waters. Nevertheless, these are basic parameters of understanding the synecology of the benthic cold-water sub-ecosystem in the course of its succession after disturbances or when substrate becomes newly available after glacier retreat. Thus, the aim of the offered thesis subject is to describe the oxygen flux through various hard bottom community fractions encompassing the entire size range from microbes to mobile megafauna of a still establishing hard bottom community. Additionally, the clearance rate of the epibenthic community colonizing artificial hard substrates (plates) in Arctic Kongsfjorden since 2002 will be described. An innovative setup consisting of incubation chambers and a multi sensor array will be used *in situ* during his year's dive expedition. The results will support estimations of carbon and nitrogen cycles of arctic hard bottom communities.

Objectives

- Estimation of oxygen flux through various hard bottom community fractions
- Assessment of trophic interactions between the epibenthic hard bottom community and its surrounding Pelagial

Tasks

- Conduction of *in situ*-respiration experiments (scientific diving) with newly developed benthic chambers
- Determination of size-fractioned clearance rates
- Analyses of interactions between the epibenthic community and its surrounding Pelagial

Qualification

It is recommended, but not obligatory that you hold a certificate as European Scientific Diver (Forschungstaucher).

If you are interested or if you have any further questions, please contact:

Dr. Jürgen Laudien, Juergen.Laudien@awi.de; 0471/4831-1315

Dr. Hans-Jürgen Hirche, Hans-Juergen.Hirche@awi.de; 0471/4831-1336

Alfred Wegener Institute for Polar and Marine Research, Am Alten Hafen 26, 27568 Bremerhaven