

Presentation of MAR-ECO Students

Name: Helene Axelsen

Nationality: Norwegian



Institution: Department of Biology, University of Bergen (UiB) and Institute of Marine Research (IMR)

e-mail: Helene.Axelsen@student.uib.no

Degree: MS student

Supervisors: Tonje Castberg (IMR), Tone Falkenhaug (IMR), and Ruth Anne Sandaa (UiB)

Working title of project: Identification of the medusas *Periphylla periphylla* and *Atolla* sp. in the gut/diet of the mesopelagic shrimp *Notostomus robustus*, from the mid-Atlantic ridge, using DNA techniques.

Summary of Project: The identification of species consumed by predators is necessary to understand marine food webs. Pelagic shrimps are an important link in the food web between mesozooplankton and larger predators. Predation on jellyfish has previously been found in fish and crustaceans, but the degree and importance of this is not yet known. Earlier diet studies and analysis of the gut content indicates that *Notostomus robustus* predaes on the medusa *Atolla wyvillei* and *Periphylla periphylla*. *Periphylla periphylla* and *Atolla* sp. is two deepwater medusas observed in large amounts on the mid-Atlantic ridge.

Identification of the gut content can be done by morphological studies and chemical analysis. Using morphological methods to identify the prey are difficult, particular for gelatinous organisms, because the morphology is damaged during capture and digestion. It is possible that DNA from the prey can still be found in the gut of predators after digestion. DNA technique will be used to determine whether *Atolla* sp. and *Periphylla periphylla* are present in the guts of *Notostomus robustus*. One fragment of mitochondrial cytochrome c oxidase I (COI) gene of the medusas will be sequenced and put in the GenBank. The DNA sequence data for the medusas will make it possible to identify these species in the diet of other predators too, such as fish and octopus.

The study is an element of more wide-ranging food-web studies of the mid-Atlantic Ridge macro- and megafauna communities within the international MAR-ECO project.

