

The Leibniz Centre for Tropical Marine Research (www.leibniz-zmt.de) in Bremen is a member of the Leibniz Association, which is supported by the German Federal and State Governments. Through its research, ZMT contributes to developing science-based strategies for sustainable use of tropical coastal systems.

Master thesis project

Benthic food web structure in coastal ecosystems

Starting in September 2017

Background of the project:

Hainan Island is an important economic area in terms of agriculture, aquaculture, fisheries, and tourism. China is by far the largest producer of aquaculture goods in the world and the contributions from and potential threats of aquaculture now become an emerging issue. These, along with other potentially harmful substances like inorganic and organic contaminants and pathogens resulting from the multitude of human uses endanger the integrity of coastal ecosystems and hence the provision of ecosystem services. The BMBF-funded interdisciplinary Sino-German program ECOLOC (Environmental change affecting COastal ecosystems of tropical China during the Anthropocene: Landward vs. OCEanic influence) aims at understanding the natural and anthropogenic factors controlling the environment and the response of organisms to human activities along the coast of Hainan. The project will thus provide extensive knowledge required for a sustainable management of Hainan's coastal resources.

Thesis:

Macrobenthic invertebrates play a crucial role for the functioning of coastal ecosystems. This study aims to investigate the benthic food web structure in tidal flats, seagrass beds and mangrove areas at the east coast of Hainan. Stable isotopes of carbon and nitrogen will be used to identify trophic levels and main food sources that support these benthic communities and to investigate whether differences in species composition between locations also cause changes in food web structure. The complexity within and across trophic levels (e.g. food web length, trophic niche space, functional groups) provides valuable information to understand how biodiversity changes may affect ecosystem functioning. Animals will be collected in the vicinity of aquaculture ponds and at reference sites. The isotopic signature of animals will be analysed along with potential food sources, and for selected species stomach content analyses will be conducted.

Requirements:

- Preferred master programs: Marine Biology, Biology, Ecology, Environmental Sciences. Only enrolled students without a master degree can be considered for the thesis project.
- Fitness and willingness to do demanding field work in Hainan (mid of September – mid of November)
- Experience with the identification of invertebrates (crustaceans, molluscs)
- Good swimming skills (for thesis 1)
- Good knowledge in English; good team-working skills

Application:

Interested candidates are invited to send a letter of interest, a curriculum vitae and the contact information of at least one referee as a single pdf file to:

Dr. Inga Nordhaus (inga.nordhaus@leibniz-zmt.de). Review of the applications will start on **July 10, 2017** and continue until the position is filled.

Leibniz Centre for Tropical Marine Research (ZMT), Fahrenheitstraße 6, D-28359 Bremen