of bioturbating activity. Observation of the activities of macrofauna in situ allows an informed assessment of ecosystem functioning and habitat quality to be made.

| Anthropogenic impact | Macro |
|---|---|

**DOES BOTTOMTRAWL FISHERY HAVE AN IMPACT ON THE BENTHIC FAUNA IN KATTEGAT?**

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The diversity of benthic fauna in all Danish waters has long been declining. The decline is not confined to areas with hypoxia or anoxic sediments, thus eutrofication is ruled out as solitary cause. The question is now, what else is causing the decline? This study aims to focus on bottomtrawl fishery as a possible explanation for the declining benthic diversity.
The trawl activity in the Kattegat area is logged with VMS (vessel monitoring system). Available data for both Danish (’05-’09) and Swedish (’07-’09) vessels were analysed with a GIS program. Data showed intensive bottom trawl activities and the spatial distribution was correlated with both bathymetric data and sediment characteristics.
A distinction of the most disturbed habitat was made by analyzing the preferred trawl-depth together with sediment characteristics. The benthic community within these distinct habitats was found generally to have a low diversity. In order to correlate the diversity and species composition with trawl activity, analysis of the spatial distribution were carried out in the GIS programme. Functional diversity was also studied and correlated with trawl disturbance.

| Anthropogenic impact | Macro |
|---|---|

**OF HOLES AND DEPRESSIONS ON THE GREAT BARRIER REEF COAST – AND A PHYSICIST’S TOOLBOX TO STUDY THEM**

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Like any other coastline of the world, the Great Barrier Reef’s coast and seafloor is riddled with holes and depressions created by burrowing animals. We present an overview over studies of tidal irrigation of crustacean burrows in mangrove forests, and of mysterious (and not so mysterious) biogenic holes and mounds on the seafloor, surrounding coral reefs and shipwrecks.

The important role of crustacean burrows to the health of mangrove forests will be discussed, and the role of seafloor bioturbators as habitat engineers for coral assemblages will be demonstrated.

A geophysical toolbox will be presented, which includes (a) centimeter-scale geoelectric methods to locate macroscopic burrows and investigate water flux through burrows, (b) mass balance of the natural radionuclide 222Rn to determine water exchange between mangrove forests and creeks (forest-scale) and (c) high resolution 3D mapping of the seafloor with multibeam echosounders to study the morphology of bioturbation features in greater than diving depth (decimeter to kilometer scale).

| Novel tools and techniques | Macro/Meso |
| --- | --- |

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