

**Proposed dissertation theme for the Doctoral degree Studies (2018-2022) in
Ecology and Environmental Science at Klaipėda University**

Title	Seafloor integrity and its recovery under bottom trawling effects in the central Baltic
Brief description of the topic	Seafloor integrity is considered to be one of the key attributes of marine ecosystem health. Analysis of 10 years VMS data indicate intensive bottom trawling at the slopes of the central Baltic. Part of these areas also suffer from temporary oxygen deficiency, while adjacent shallow sites are refuge areas for many species. This study should analyse trawling effects on benthic environment incl. associated communities as well as their recovery in course of three years using ROV, grabs and acoustic tools. The challenge here will be to discriminate between anoxic disturbance and trawling effects in adjacent areas and to elaborate sensitive indicators to monitor changes of the seafloor integrity, i.e. benthic community structure and geomorphology of the seabed. These indicators should be tested in relation to pressure intensity (trawling extent, oxygen deficiency), but also used to develop methodological framework for seafloor integrity status assessment of the central Baltic Sea.
Requirements for a candidate	Applicant should have a fundamental knowledge in marine ecology, basic experience in using GIS and statistical methods in analysis of biological and/or environmental data, as well as willingness to work with various datasets (underwater video, seabed acoustics, tradition biodiversity datasets, etc.). Good English language skills are necessary. Experience of a candidate in studies of benthic environment and/or macrofauna communities will be given a preference during evaluation.
Research experience in the institution	PhD student will enter a team of benthic ecologists with experience in analyzing multiple effects on seabed environment using various field techniques and data analysis tools. The PhD student will be supported by the expertise in use of ROV and acoustic methods for inspection and mapping of the seabed surface. These techniques were heavily used in previous DENOFLIT and TRIPOLIS projects, but also in numerous local impact assessments within Lithuanian EEZ. Local team will also support with the background knowledge in taxonomy of local benthic macrofauna, handling of large video and acoustic datasets as well as use of multivariate statistical tools.
Existing research infrastructure and support	Work will be performed in a framework of the national project funded by Environmental Protection Agency, if project application will be approved. Confirmation of this topic will be made not later than 13.08.2018, those who are interested to apply should contact potential supervisor (see contact info below) for the latest update. This study will use both tradition and modern seabed assessment techniques to map seafloor surface features from R/V "Mintis". Lab facilities include the necessary infrastructure for biological and geological analysis of collected benthic material as well as data analysis tools. PhD scholarship includes: <ul style="list-style-type: none"> • Annual stipend: €7,140–7,800 (duration 4 years); • Support for travel and consumables: €6,400 for 4 years • Health insurance subsidy; • Access to new infrastructure at Institute of Marine Research including a climate rooms, sample preparation and analytical facilities. Additional: <ul style="list-style-type: none"> • Reduced fee accommodation (€1,360 / year) in the University campus; • Student rates for public transport; • Additional travel funding and extra stipend possibilities from National Research Council (subject to individual applications).
Potential supervisor [contact person for the topic]	Dr. Darius Daunys (darius.daunys@jmtc.ku.lt), tel.: +370 46 398899