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Land-sea interactions for the Baltic Sea coastal zone: a biological proxy approach

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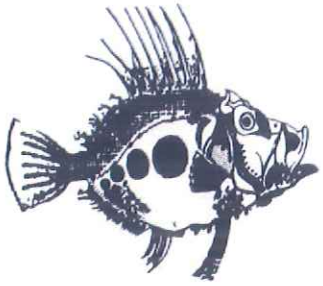
The environmental problems related human-induced eutrophication and anoxic bottom waters are of prime concern in today's Baltic Sea. Considerable scientific efforts have been made to understand its geological and environmental history, however, the coastal zone has received less attention and the potential to use coastal sediments as a high resolution environmental archive has not fully been explored. The study involves qualitative and quantitative analysis of the biological proxy variables from the coastal Baltic Sea, and reconstruct how different coastal environments along with nutrient, salinity, and oxygen status have varied in the past We present data from two stations along the Swedish Baltic coast, one close to Karlskrona, and one close to Västervik. We have sampled long (~520 cm) cores at both sites and are employing XRF scanning and a range of biological proxy variables, such as dinoflagellate cysts, testate amoebas, benthic foraminifera, and tintinnids. The XRF results show a high proportion of Bromine in organic rich intervals that may be related to marine organic matter. The micropalaeontogical results show a dominance of unidentified juvenile foraminifera in the shallower part and adult calcitic (*Haynesina germanica*, *Elphidium* sp.) and agglutinated (arenaceous) species (*Miliammina fusca*) in the deeper part of the core. We have also observed a large and diverse abundance of tintinnids (*Tintinnopsis fimbriata*, *T. cylindrical*, *T baltica*, *T. failakkaensis*), which can be related to environmental settings with high content of organic matter. These groups of organisms have not previously been applied in a palaeoecological context in the Baltic Sea.



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