

Year 2: Summary of BONUS+ HYPER project implementation in 2010

HYPER synthesises the knowledge on processes leading to oxygen deficiency in the Baltic at an ecosystem scale and establishes a holistic scientific understanding of the mechanisms leading to this phenomenon and its effects on the living conditions for benthic fauna and recycling of nutrients. Required nutrient reductions to maintain a healthy ecosystem will be estimated taking future climate changes into account.

During the second year the project participated in two research cruises and continued intensive laboratory work analysing the numerous sediment cores. Altogether five manuscripts concerning the biochemical processes of N and P, based on previous year's experimental and field data were produced. In the modeling workpackage, the physiological fauna model with special emphasis on a mechanistic formulation of hypoxia was applied for a number of sites. The reactive transport model was completed and validated. Two scientific articles with modeling approach were produced. For studying the impact of hypoxia on benthic fauna, a major sample material had been collected during the previous year, and this year the project put considerable effort on analysing this material. Two papers have already been published or in the pipeline to be published soon. The next step, the focus of the ongoing year, will be synthesising all the above results. The consortium has actively disseminated Baltic Sea science to school classes and media and participated in scientific and political discussion on engineering approaches to remediate hypoxia in Sweden and Finland. Overall, the project has proceeded well and according to the research plan.