



# Marine Community Ecology MSc Project

## - Joint species distribution modelling of benthic invertebrate communities

Thesis work in Biology or Environmental Science at the Department of aquatic resources SLU, 15-60 cp

**Research questions:** Understanding variation in the number, abundance, identities, and traits of species over space and time is a key topic for ecologists today. In this project, you will investigate the following questions: **(i)** what environmental variables drive patterns in benthic species abundance and distribution? **(ii)** how is this related to the traits of species? **(iii)** how do species interactions shape these spatial distributions?

**Tasks:** Explore and fit models to benthic community data sampled within national and regional programmes (available at start) using the R package [HMSC](#). You will fit multivariate species distributions models with environmental covariates and explore species-by-species level correlations in distributions.

**What you will learn:** Key skills for ecologists, including **(i)** how to apply state-of-the-art joint species distribution models in R **(ii)** how to work with ecological data following good practices for reproducible analysis **(iii)**... and also learn about benthic community dynamics in the Baltic Sea!

**Prerequisites:** Familiarity with R and statistical concepts for applied ecology is a merit. However, we offer a supportive environment with dedicated supervisors and firmly believe that any motivated student can take on this project and succeed.

**Location:** SLU Aqua in Lysekil, or remotely since the project is about analysing and quantifying already available data.

*Please do not hesitate to reach out for more information!*

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