



“Scientific Opportunities for a Global Algal Revolution”

Program and Book of Abstracts

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Alien Invasions: Quantifying the invasiveness risk of macroalgae in the Azores

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The presence of aliens or non-indigenous species (NIS) is a known threat to biodiversity, health, and economy, so it is of high importance that their invasiveness risk be quantified. The mid-northern Atlantic archipelago of the Azores encompasses 30% of the European Union exclusive economic zone and is known to host a high proportion of marine NIS.

An updated list of marine macroalgae classified as NIS in the Azores was produced, with 42 taxa (8.05%) presently recognized as non-native, whereas the more isolated islands in the Eastern Group presented lower numbers of NIS (4.25% and 6.25%). The two islands with the most used marina for transatlantic recreational sailing presented higher numbers of NIS (12.90% and 16.87%).

The Aquatic Species Invasiveness Screening Kit (AS-ISK), a decision-support tool consisting of 49 questions for the Basic Risk Assessment (BRA) and six for the Climate Change Assessment (CCA), was applied to the updated list above. The results indicate that 21 species pose a medium risk of invasion and 15 present a high risk under current climate conditions (BRA scores only). Based on the BRA+CCA scores, 20 species pose a medium risk of invasion and 16 a high risk. The Rhodophyceae presented the higher number of species classified as high risk, and the Chlorophyceae presented a higher percentage of species ranked as high risk.

Some considerations are provided for the management of species in their initial stages of establishment.

Effect of mobile bottom trawling on microphytobenthic communities in the German Baltic Sea

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Mobile bottom fishing has a direct and indirect effect on benthic communities, sediment characteristics and nutrient fluxes at the sediment-water interface due to heavy fishing gear. Marine protected areas (MPA) are currently not exempt from bottom trawling and thus there are hardly any undisturbed areas in the Baltic Sea and almost no research to estimate the impact of bottom trawling on benthic marine habitats. The present study is part of a comprehensive joint project, which deals with the effect of bottom trawling on benthic and demersal ecosystem components, with our focus on microphytobenthic communities. Microphytobenthos, mostly dominated by diatoms, are primary producers and thus key players in the benthic community of marine soft bottoms. In the past years we collected sediment cores from several areas in the Baltic Sea (MPA and Reference) and examined microphytobenthic primary production and diversity (top 1-2 cm). For a quantitative and qualitative data analysis, we measured primary production, chlorophyll a content as well as sediment characteristics. With the development of new methods, we were for the first time able to measure the cores on the ship directly. The diatom communities were investigated morphologically via light microscopy and molecular markers using