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Seagrass biomass and morphology under varying degrees of shading by suspended matter in Hainan, China

Abstract

Seagrass meadows are declining all over the globe, due to varying, but mainly anthropogenic, influences. Light limitation through shading by suspended material, as well as micro- and macro-algae has been identified as one of the main factors inducing this change. This study aims to determine responses of the tropical seagrasses *Thalassia hemprichii* and *Enhalus acoroides* to shading through different concentrations of suspended matter in the water column. The light limiting properties of suspended material were verified. Macro-morphological seagrass parameters, such as above ground biomass, shoot density, leaf length, leaf width and leaf area were examined. Less biomass per area which ensues through a lower number of shoots was determined for *T. hemprichii*. Differences in leaf morphology were observed with an elongation of the leaves of both species and a narrowing in width in some cases. It can be confirmed, that light limitation through shading alters the constitution of the meadow, by reducing the number of shoots per area. This might lead to resuspension of the sediment, loss of habitat for ecologically and economically important species and less primary production. A decrease or loss of these services can have a negative influence on surrounding ecosystems and the communities that rely on them.