

ABSTRACT

THE EFFECTS OF BIOLOGICAL DIVERSITY ON MARINE ECOSYSTEM FUNCTIONS

De Laender Frederik

Laboratory of Environmental Ecosystem Ecology, Research Unit in Environmental and Evolutionary Biology, University of Namur, Rue de Bruxelles 61, 5000 Namur, Belgium

E-mail: Frederik.delaender@unamur.be

The biological diversity found back in natural systems is an important determinant of the functioning of ecosystems and their stability in changing environments. However, biodiversity can be defined at various hierarchical levels, going from the within-species to the community and landscape level. In addition, biodiversity at a fixed hierarchical level can affect ecosystem functions and their stability through various mechanisms. I will illustrate this using a theoretical framework, and translate this framework to a simple trait-based model for competitive communities. Next, I will turn to practical examples of how trait diversity at various hierarchical levels can affect marine ecosystem functions and discuss some challenges for future research, including the up-scaling to complex multi-trophic systems ('food webs'). Lastly, I will present a new collaborative research project that will start end 2018, where we plan to study the effect of intraspecific trait diversity on the resistance of species diversity and ecosystem productivity to multiple stressors.