

# ABSTRACT

## HOW UNKNOWN IS THE WORLD'S BIODIVERSITY? FREE-LIVING FLATWORMS AS AN EXAMPLE

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Even at the start of the 21st century, the actual biodiversity of the world's marine ecosystems is still largely unknown. Not surprisingly, especially the smallest creatures are much understudied. Among the least known taxonomical groups are the microturbellarians, small free-living flatworms that inhabit sandy beaches or live epiphytically on algae. With a rough conservative estimation of about 15.000 species still to be described, an enormous task still lays ahead for classical morphology-based taxonomy. And not only is the relative number of species already described limited, but on top of that most of them are described from a few marine ecoregions only, mostly from the Western and Northern Europe, and the Mediterranean. The major part of the world's coasts and deep sea habitats never were investigated. This lack of knowledge greatly hampers further research regarding biogeography, ecology or even phylogeny. In recent years we have tried to shed light on several questions regarding the evolution and ecology of these animals, including the origin of a symbiotic life style, the history of major habitat shifts and the "Everything small is everywhere"-hypothesis, research that is still ongoing. These studies were only possible because of a big taxonomical effort and trustable databases, and the results will briefly be presented.