

Global patterns in mangrove macrobenthos: A new approach for assessing macrobenthic diversity and functions

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Increasing evidence is revealing the importance of macrobenthos for mangrove ecosystem structure, functioning and services. Uncertainties however remain on central ecological questions such as the relative significance of macrobenthic diversity and community composition in driving mangrove ecosystem functions as well as causes and consequences of variations within- and across biogeographic regions. One reason is that datasets are often not readily comparable. Using data from 13 own study sites, we developed a "Fingerprint to Footprint Approach" (FFA) based on the structured assignment of mangrove macrobenthos to mutually exclusive "ecological trait groups" (ETGs), depending upon how species modify physical habitat structure, and their main diet. By then using an a priori "Functional Role Template", designed after own expert knowledge and literature, the translation from "who you are" to "what do you do" to "what is your impact" was greatly facilitated across all sites. Such approach will help to generate much-needed globally comparable datasets, and, by scaling up from fingerprint (species identity/richness) to footprint (functional diversity) promote our understanding of the ecosystemic importance of mangrove macrobenthos in different environmental contexts. FFA will also help to evaluate the vulnerability of macrobenthic performance to global human-driven environmental change, a topic only poorly understood.