

## Determining the impacts of trawling on benthic function in European waters : a biological traits approach

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One of the most widespread yet manageable pressures we impose on the seabed is disturbance of the substrate by towed demersal fishing gear (bottom trawling and dredging). Over the past forty to fifty years, many studies have been conducted specifically aiming to understand the impacts of such fishing gear on the seabed communities. Their outcomes have demonstrated dramatic effects of bottom trawling on the structure of marine ecosystems although impacts tend to be wide-ranging, depending upon the gear, intensity, spatial area and the nature of the seabed habitats. However, understanding the functional impacts of this activity (as opposed to impacts on the structure of benthic assemblages) has only recently been attempted. Advances in the application of biological traits analysis (BTA) wherein the assemblages are described in terms of their life history, behavioural and morphological characteristics, have allowed us to better understand the interactions between the benthic fauna and their environment at a functional level.

We present the initial findings of work conducted under the auspices of the EU-funded project 'BENTHIS' which aims to improve our understanding of the impacts of trawling on benthic ecosystem functioning over much larger spatial scales than previously undertaken. Biological traits information from 887 stations across European waters (Norwegian, UK, Belgian, Dutch, Danish waters, the Mediterranean and Black Sea) were analysed to: i) quantify the relationships between infaunal trait composition and environmental variables (depth, sediment granulometry); ii) determine the relationship between traits and habitat type (EUNIS level 4); and iii) assess the relationships between trawling pressure (using data derived under BENTHIS; see Eigaard et al., this volume) and traits composition.

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