# On the relevance of freshwater nematodes for ecological assessment in transitional waters

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Nematoda is the most common group of organisms in the meiobenthic assemblages of freshwater and marine systems and, in Portugal, its distribution has been studied along the estuarine gradient of two estuaries. Nematodes are recognized as good indicators of anthropogenic impacts in aquatic ecosystems and, together with the taxonomic data, the inclusion of functional diversity can create a powerful tool, providing information on the functioning of ecosystems.

Most estuarine studies do not encompass information to genus/species level of freshwater nematodes or reduce the information to family level, impoverishing thus information on diversity. The main aim of this study is to evaluate the information loss effect on the assessment of the ecological quality status of the upstream area of the Mondego estuary, caused by the non identification of freshwater nematodes– both taxonomic and functional approaches of nematode estuarine communities.

Results show that nematodes assemblages reflected the salinity gradient, with increasing densities and diversity from oligohaline to euhaline areas. Freshwater nematodes contributed with a small percentage (3.5% of total density), but were very abundant in the upstream areas (0.5 – 47.4%). Without

freshwater nematodes, the separation of salinity stretches was maintained (with lower distinction of the stretches) and the performance of the Index of Trophic Diversity and the Maturity Index revealed a worse condition of the ecological status of oligohaline and mesohaline stretches.

This study shows that taxonomic and biologic characteristics of freshwater nematodes should be evaluated when assessing the ecological status of an estuary in order to correctly classify the uppermost sections of estuaries.

**Keywords:** estuarine gradient, Mondego estuary, Portugal, subtidal meiobenthic assemblages.