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Spatial variability of marine nematode diversity from Korea and British Isles across hierarchical spatial scales

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Abstract

Understanding of the distribution pattern and community structure and how spatial scales influences biodiversity have been crucial questions for ecologist. Nematode assemblages inhabiting seaweeds (*Corallina* sp. and *Sargassum muticum*) compared between the south coast of the British Isles and South Korea. A fully hierarchical design was used with three regions within each country, two shores in each region, three replicate samples taken from three patches within each shore to compare differences in nematode assemblages across scales. The density, diversity and composition of nematodes assemblages were significantly different across all spatial scales (patches, shores, regions, and countries) on both seaweeds. The nematode assemblages at the shore level scale showed greater variation than at other spatial scales in *Corallina*, whereas at the country level scale, greater variation was indicated in *Sargassum muticum.* Despite differences in assemblage composition between countries, some cosmopolitan nematode species were present in both countries. This indicated that further study should consider how small-scale diversity contributes to higher-scale diversity based on abiotic and biotic factors.

Keyword: Meiofauna, Nematodes, Nested design. Hierarchical spatial scales, Biodiversity

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