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Epiphytic foraminiferal indices as bioindicators in Mediterranean seagrass meadows

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Mediterranean infralittoral soft bottoms are dominated by extensive seagrass meadows of the endemic phanerogam *Posidonia oceanica* (L.) Delile. Both leaves and rhizomes are substrates suitable for colonization by a vast array of epiphytic organisms, including foraminifera. Epiphytic foraminifera are very useful bioindicators, because of their relatively short life-cycles and their quick reaction to environmental changes at global and local scales. To evaluate the environmental conditions reflected by the foraminiferal assemblages in P. oceanica-dominated environments, the FORAM Index (FI) has been slightly modified to include changes to the ecological categories defined in the original Langer A–D morphotype scheme. Sensitive, long-lived species are now represented by the SB and A* groups; the stress tolerant taxa correspond to D*; and the small heterotrophic forms are still represented by B and C. Consequently, the FI was modified as follows: FI' = 10 x (PA*+PSB) + PD* + 2 x (PB+PC). The *Posidonia oceanica* foraminiferal assemblage contains very abundant B and C forms that remain more or less constant regardless of environmental conditions as they do not have as strict requirements for light and substrate as the A* and SB groups. Moreover, B and C taxa are not as well-adapted to stressful conditions as is D*. Therefore, to magnify the differences between, a priori, minimally altered and stressed areas, a new index is calculated. The "long vs. short life span" index (ILS), which is expressed as: ILS = (3.5 x (PA* + PSB) + 0.01) / (PD* + 0.01). Index ILS has a high correlation with the modified FORAM Index, which was developed to characterize water quality. Index ILS, can be used as a reference for the quality assessment and preservation of *P. oceanica* meadows.