Macroalgal epiphytic communities as potential indicators of the conservation status of Mediterranean macroalgal forests

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Shallow Mediterranean rocky bottoms are characterized by forests of canopy-forming fucalean seaweeds (genera *Cystoseira*, *Ericaria,* and *Gongolaria*), ecosystems considered of great ecological relevance. These comminities are threatened by multiple stressors and have recently undergone major regression, resulting in habitat loss or fragmentation. Despite such a decline, to date there are no generally accepted metrics that can be used as early indicators of regression of fucalean canopies. Interactions between habitat-forming seaweeds and their associated taxa are ecologically relevant and should be considered to plan monitoring and conservation programs. Since epiphytes respond faster to environmental changes than canopy-forming algae, they could represent a useful tool to predict changes in environmental conditions potentially affecting the status of macroalgal forests. Within the frame of the Biodiversa+ FORESCUE project, epiphytic assemblages associated with forests of *Gongolaria barbata* under different conditions of density (continuous to fragmented) are being investigated in 7 regions (Menorca, French Riviera, Apulia, Conero Riviera, Lagoon of Venice, Istria, northern Aegean Sea). Composition and abundance of the macroalgal epiphytic assemblages are assessed by traditional microscopy, while DNA barcoding and eDNA analysis are used to test the hypothesis that epiphytic communities of well-preserved populations differ from those of fragmented ones. Results from the populations of the Conero Riviera, highlighted the high abundance of some species and differences in composition among the assemblages of a highly urbanized site compared to the other sites. Results for all regions investigated will unravel whether these patterns are general or vary among geographical areas.