Macrozoobenthic assemblages associated to the alien seagrass *Halophila stipulacea* under varying invasion intensity

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While invasive non-indigenous species (NIS) are traditionally blamed for their negative effects on the native biota and human activities, recent studies highlighted that impacts provided by NIS are multifaceted, and their eventual outcome is often non-obvious. Invasive NIS are often considered harmful for native biodiversity and ecosystem services, but in heavily impacted environments they might functionally replace native, locally extinct species and their ecological function. This ambivalence is particularly true for habitat-forming NIS, such as oysters, tube-building annelids, algae and seagrasses. *Halophila stipulacea* is a dioecious, thermophilic seagrass native to the Indo-Pacific region, which invaded the Mediterranean Sea and the Caribbean. where it is expected to compete with native seagrasses. However, its relationship with native macrozoobenthic assemblages is still largely unknown, as well as its effect during the early phase (at low shoot density) of invasion compared to fully invaded habitats. In this study, we characterised the macrofauna associated with patches of *H. stipulacea* occurring on soft bottoms along the Apulian Ionian Sea at high and low invasion intensities and compared it with the neighbouring bare sediment. Low-density patches were characterised by higher diversity and abundance with respect to both high-density patches and bare sediment, suggesting that the initial phase of the invasion is favourable for macrozoobenthic assemblages. However, the species composition appeared similar irrespective of the invasion intensity, suggesting that *H. stipulacea*, unlike native seagrasses, does not increase the local biodiversity and is therefore unable to fully replace their role as habitat formers.