



***Spondylus gaederopus* (Bivalvia, Pteriomorpha) as habitat structuring in subtidal stressed environments**

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Abstract

The European thorny oyster, *Spondylus gaederopus* (Linnaeus, 1758), is a large Mediterranean indigenous species, which widely occurs in subtidal hard bottoms from 2-3m to 50m depth. Despite *S. gaederopus* has been used since the Neolithic as food and ornament, only in recent years its biology and ecology have been object of targeted investigations, according to which it is a long-lived species inhabiting unpolluted environments. Such latter indication, however, contrasts with our observations on *S. gaederopus* stable populations settled in stressed environments. In particular, *S. gaederopus* regularly colonized breakwater barriers in depleted habitat along eroding coasts, sharing the habitat with a peculiar oligotypic *Arbacia lixula* - *Percnon gibbesi* benthic association. Preliminary data on two populations settled off the coast of Villafranca Tirrena (Sicily, Southern Tyrrhenian Sea) and Saline Ioniche (Calabria, Ionian Sea) suggest that *S. gaederopus*, in impacted areas, successfully recruits in hard substrates that have been denuded by sea urchin overgrazing. Subsequently, the spinous oyster shell attracts epibionts whose grazing is discouraged by the same thorniness of the shell, thus contributing to the small-scale landscape patchiness. Finally, the size-structure of both Thyrrhenian and Ionian populations is shown, confirming that *S. gaederopus* is a slow growing, irregularly recruited, and potentially threatened species.

Keywords: Population structure, Ecological role, Mediterranean Sea