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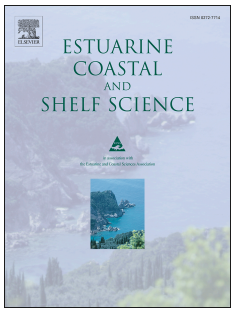

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PII: S0272-7714(16)30429-2

DOI: 10.1016/j.ecss.2017.06.039

Reference: YECSS 5529

To appear in: *Estuarine, Coastal and Shelf Science*

Received Date: 3 October 2016

Revised Date: 27 March 2017

Accepted Date: 27 June 2017

Please cite this article as: Fernandez, W.S., Dias, G.M., Majer, A.P., Delboni, C.G., Denadai, M.R., Turra, A., Resource partitioning between sympatric starfish from tropical unconsolidated substrate: Implications for coexistence and top-down control on benthic prey, *Estuarine, Coastal and Shelf Science* (2017), doi: 10.1016/j.ecss.2017.06.039.

Resource partitioning between sympatric starfish from tropical unconsolidated substrate: implications for coexistence and top-down control on benthic prey

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Abstract

Starfish are important predators that may shape rocky shore communities, but their ecological role in unconsolidated substrate communities is still poorly known. We assessed the feeding niche overlap of two sympatric starfish, *Astropecten marginatus* and *Luidia senegalensis*, from the shallow subtidal zone in southeastern Brazil. During one year, we conducted monthly samples to compare diet composition, abundance and frequency of occurrence of each food item between species. With 24 of the 34 food items identified in this study consumed by both species, they exhibited generalist behaviors, with a more diverse diet during the warm periods, when the main prey items were abundant. However, *A. marginatus* showed more variation in abundance of prey consumed over time than *L. senegalensis*. The diet of *A. marginatus* consisted primarily of the bivalve *Tivela mactroides* and *L. senegalensis* of the bivalve *Mulinia cleryana*. The size of *T. mactroides* was positively correlated to the size of *A. marginatus*, while only small-sized individuals of *L. senegalensis* consumed this item, the most abundant prey in the area and an important food resource for local the community. The large quantity and variety of items consumed by both species support the structuring role of starfish in subtidal unconsolidated substrate communities, exerting a generalist top-down control, primarily on dominant bivalve populations. Temporal variation in the availability of the main prey may change how selective are both species. The differences in prey composition between species and the