Is the sea cucumber *Holothuria polii* a potential indicator species for organic enrichment in the sediments of coastal lagoons?

Withouck Inne[1] and González-Wangüemert Mercedes[1]

[1] MaResMa, Centro de Ciências do Mar do Algarve, Universidade do Algarve, Campus de Gambelas, 8005-139 Faro, Portugal
E-mail: inne.withouck@gmail.com

Anthropogenic organic enrichment is a major threat to coastal lagoons. To quantify the impact of this pollution, organisms can serve as ecological indicators if their behavior is directly correlated with changes in pollutant levels.

Aspidochirote holothurians or deposit feeding sea cucumbers are sensitive to changes in the sea-floor composition because they ingest sediment to obtain nutrition. However, limited research has been done on their potential as an indicator. Their preference for enriched sediment suggests a correlation between holothurian density and sediment organic matter content.

This study investigates the suitability of *Holothuria polii* as an indicator species for coastal lagoons. Holothurian abundance and sediment enrichment level were measured during June 2015 and May 2016 in control and enriched sites in the Mar Menor lagoon in Spain.

A significantly higher density of holothurians was observed in the enriched sites. However, more organic matter content was found within the control sites, which is possibly linked with seagrass abundance. The lower holothurian densities associated with this natural enrichment suggest that *H. polii* prefers anthropogenic organic matter which is easier to digest. These preliminary results encourage more research into the feeding habits of *H. polii* in order to further evaluate their indicator potential.

Keywords: indicator species; organic enrichment; coastal lagoons; holothurians; *Holothuria polii*