



Corrigendum: Modelling the Distribution of a Commercial NE-Atlantic Sea Cucumber, *Holothuria mammata*: Demographic and Abundance Spatio-Temporal Patterns

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A Corrigendum on:

Modelling the Distribution of a Commercial NE-Atlantic Sea Cucumber, *Holothuria mammata*: Demographic and Abundance Spatio-Temporal Patterns.

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In the original article, there was a mistake in the *y*-axis legend of **Figures 3, 4** and the *x*-axis legend of **Figure S1** (from the **Supplementary Material**) as published. As in the text, wherever it reads ‘Ind/10 m²’, it should be Ind/100 m². The corrected **Figures 3, 4 and S1** appear below.

In addition, there were multiple errors in the main text. Wherever it reads ‘Ind/10 m²’, should be Ind/100 m². The density units were wrongly typed.

A correction has been made to: **Results, Space-Time Distribution Patterns**, paragraph two:

“Within the area of distribution of *H. mammata* 2114 individuals, ranging from 119 mm to 510 mm, were observed and counted in a total sampled area of 29160 m². Density *per* replicate ranged from 0 to 120 ind/100 m² (or 12,000 ind/ha – a maximum value recorded at SC2) (**Figure 3**). The majority of individual counts were made on rock transects (94%), when compared to sand transects. Of those, 68% were settled on a sandy patch. In sand transects, the large

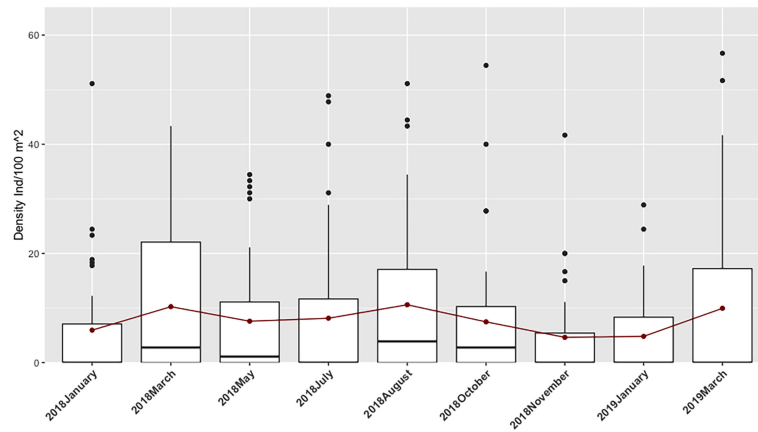


FIGURE 3 | Temporal density data for *Holothuria mammata* at Arrábida, Setúbal, during the nine month sampling period. Red dots at each month connected by a line represent the evolution of the mean.

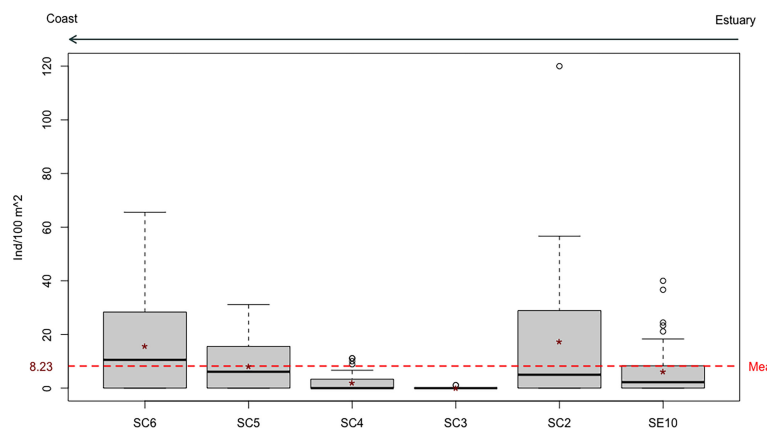


FIGURE 4 | Density of *Holothuria mammata* by sampling site, arranged according to distance to estuary (left to right). Red dotted line represents the overall mean value. * represents the mean of each sampling station.

majority was, in fact, settled on sand (82%) and remaining on small rocky patches. However, it should be considered that sand transects have very few rock outcrops and in rock transects sandy patches are common. Only a small number of individuals preferred a macroalgal cover, as only 5% occurred in the algal cover of rock transects and none in the algal cover of sand transects. Of all specimens, 34% were found to be sheltered in crevices at the time of sampling (daytime) and these individuals were overall smaller in size (ANOVA: $p=0.0086$). When comparing sizes between substrates of settlement, individuals occurring on rock were also smaller than those on sand (ANOVA: $p<0.0001$) and so are those occurring within an algal cover (ANOVA: $p=0.039$)."

A correction has been made to: **Discussion**, paragraph one:

"The population of *Holothuria mammata* at this NE-Atlantic rocky reef was the healthiest studied up to this moment. It

showed the largest individuals reported so far, with a maximum total length of 51 cm, densities up to 120 ind/100 m² and unimodal size-class distributions. This reflects the good environmental conditions, successful recruitment and an unexploited population. The Mediterranean and other NE-Atlantic regions show populations of this species with lower maximum sizes, the majority between 25 cm and 38 cm (Navarro et al., 2013; González-Wangüemert et al., 2014, 2018; Marquet et al., 2017; Mustapha and Hattour, 2017; Siegenthaler et al., 2017). Previous records show that *H. mammata* in the NE-Atlantic attain bigger sizes than in the Mediterranean and the largest in the Portuguese coast, with Peniche, a highly productive marine area, presenting the previous largest documented specimen, with 43 cm (González-Wangüemert et al., 2016). Densities found in the present study were also the highest, compared to a maximum density of 55 ind/100 m² found in

the Mediterranean, Aegean Sea (Aydin, 2019a), 16 ind/100 m² reported in the Canary Islands (Navarro et al., 2013), and particular low densities observed at Ria Formosa (south Portugal) of 1.2 ind/100 m² (Siegenthaler et al., 2017). However, densities tend to be much lower in habitats without rocky bottoms (Navarro et al., 2013) and Ria Formosa is a shallow mesotidal lagoon lacking the typical *H. mammata* habitat (Siegenthaler et al., 2017). Like at Peniche, the Arrábida coast is also a highly productive area, benefiting from upwelling events in the summer, nutrient inputs from the estuary and from a complex subtidal habitat (Wooster et al., 1976; Cabeçadas et al., 1999; Costa et al., 2013) that can have positive effects on the condition of the population. The high productivity together with the subtidal distribution of the species, unlike intertidal distributions (Siegenthaler et al., 2017), provide more stable environmental conditions, which may be the reason for higher abundances and lower variation in time.”

The authors apologize for these errors and state that they do not change the scientific conclusions of the article in any way. The original article has been updated.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fmars.2022.950907/full#supplementary-material>

Supplementary Figure 1 | Data distribution of two response variables with a point-mass at zero: density and proportion of individuals on sand substrate, considering the two sample substrates (sand and rock).

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