



Spatial and temporal variation in the abundance of two sympatric seahorse species (*Hippocampus guttulatus* and *Hippocampus hippocampus*)

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Recent findings reported a significant decrease in abundance of two sympatric species (*Hippocampus guttulatus* and *H. hippocampus*) in the Ria Formosa lagoon (South Portugal) and no direct causes have been, so far, clearly identified. This study aimed to describe fluctuations in the local seahorse populations through monthly surveys over a course of a year, in order to identify some of the potential drivers behind the seasonal fluctuations. A total of six sites were chosen based on their habitat characteristics. The highest *H. guttulatus* abundances were recorded at sites with higher holdfast availability and depth ranging from 3 to 6 meters, while *H. hippocampus* were observed at highest numbers at sites with less holdfast availability and patchily distributed. In most sites, seahorse density decreased during the summer months (from May to August) and increased from August to December. Holdfast use changed across the sites surveyed, according to the respective habitat characteristics. This study identified environmental variables that influenced the abundance of seahorse population, i.e., holdfast availability, depth and temperature in the Ria Formosa lagoon, underlining the importance of monitoring populations over a course of no less than a year in order to avoid bias due to seasonal fluctuations.

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