



## **An Unexpected Atlantis: Using Artificial Structures in the Conservation of an Endangered Seahorse Species**

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**Abstract:** Anthropogenic development, especially the transformation of natural habitats into artificial, is of growing concern within estuaries and coastal areas worldwide. Many species are negatively affected as their natural habitats are destroyed or altered. Marine conservation actions usually focus on the protection of natural habitats e.g. Marine Protected Areas, but potential exists in the use of artificial habitats for species conservation. During the development of a residential marina estate in the Knysna Estuary, South Africa, Reno mattresses (horizontal wire cages filled with rocks) were used as a canal lining. Seasonal and monthly population assessments of the endangered Knysna seahorse, *Hippocampus capensis*, were conducted within the marina and the estuary over a two-year period. Consistently higher seahorse densities were found on the Reno mattresses compared to vegetation habitats and to historical data for the estuary. This result begged the question of whether the artificial habitat was chosen by the seahorse in preference to natural vegetation. An in-situ experiment in which adult *H. capensis* were given the choice between natural vegetation (*Zostera capensis*) and artificial (Reno mattress) habitat found that seahorses were significantly more likely to move away from *Z. capensis* onto the Reno mattresses or remain on the Reno mattresses. Adult *H. capensis* were found to prefer an artificial habitat to *Z. capensis* and we conclude that Reno mattresses provide an excellent habitat for this species. The results of this study suggest that similar artificial habitats should be examined when considering conservation models for other seahorse species.

**Keywords:** Conservation and management, Ecology, Behavioral ecology, Artificial habitat