

THE KNYSNA SEAHORSE

Kyle Smith

I am pretty sure that everyone has heard of the Knysna seahorse and anyone who has visited the SANParks office at Thesen Island would have seen some in the reception area aquarium. I have been privileged enough to visit these curious creatures on numerous occasions and have often listened to the comments and questions made by all manner of visitors. It seems that the seahorse is well known but that not much is generally known about the seahorse. So I thought that for this article I would explain a little about our elusive and enigmatic talisman.

Seahorses are a bony teleost fish similar to other fishes in that they possess gills, fins and a swim bladder. They belong to the family Syngnathidae which is derived from the Greek words 'syn' (meaning together or fused) and 'gnathus' (meaning jaws). Next time you visit the SANParks office have a look and see if you can see why this is appropriate. Other species found within this family include the pipefishes, pipehorses and seadragons. Seahorses all belong to the one genus, *Hippocampus*, 'hippos' (meaning horse) and 'campus' (meaning sea monster).

Seahorses in general are particularly vulnerable to population decline due to their distinctive life characteristics including low mobility with a certain amount of site fidelity, small brood size with lengthy and vital parental care and a natural low rate of adult mortality. In addition anthropogenic disturbance tends to be both more frequent and severe in the shallow coastal belt where the majority of seahorses reside. The Knysna seahorse, *Hippocampus capensis*, is endemic to South Africa and because of its limited and fragmented distribution, its apparent vulnerability to ecological perturbations and the ever present threat of habitat degradation, was the first seahorse species to be listed as endangered on the IUCN Red Data List. In fact it has the smallest geographical range of any seahorse (only been found in Knysna, Swartvlei and Keurbooms estuaries) and is the only fully estuarine seahorse species amongst the 36 that are currently recognized. In South Africa the seahorse is further protected under the Marine Living Resource Act (of 1998) and it's important for everyone to realize that it is illegal to collect or keep the Knysna seahorse without a specific permit

So what do we really know about this species other than it has a limited distribution and can't be collected? Well it can be described as a medium sized seahorse with an adult length ranging from 5.3 to 12cm. It is characterized by a lack of a coronet (crown) and a short snout. Males tend to have shorter snouts than females and also possess a slight keel above the brood pouch. Colour varies amongst individuals but ranges from a typically mottled brown with darker patches through to yellow, green and beige to brown or black. Like most seahorses, individuals move slowly, ambush their prey and rely on camouflage and crypsis to avoid predation. Individuals reach sexual maturity within one year of birth at roughly 6.5 cm and can live for up to three years in captivity (no data is available for longevity in wild populations). Like all seahorses, it has a remarkable method of reproduction in that the female transfers her eggs into the male's pouch where they are fertilised and the embryos develop, embedded in the tissue lining the pouch wall of the

'pregnant' male. They brood their young for 14 – 45 days depending on water temperature and produce 7 to 120 young per brood.

Previous studies on the distribution and abundance of the Knysna seahorse have shown that their abundance is low (an average density of between 0.0089 and 0.0114 individuals m^{-2}) and their distribution is patchy usually being found in shallow water in association with aquatic vegetation. When looking more specifically at habitat preference one study showed that adult seahorse density could be correlated with percentage vegetation cover and with holdfast length. In other words more seahorses were found at sites characterized by high vegetation cover and although there was some evidence that Knysna seahorses prefer certain plant species over others, they are likely to be encountered in low numbers anywhere in the estuary where aquatic plants are present (roughly 11% of the sub-tidal area). Seahorses have also been noted in rubble found at the base of jetties and it is interesting to note that the gabions used throughout the Thesen Island development may provide another refuge for seahorses. This could be important as although many estuarine species can tolerate widely fluctuating temperature and salinity regimes, and are hence better adapted to survive freshwater floods, the poor swimming ability of the seahorse and its reliance on holdfasts may make them vulnerable to such extreme events. In such an instance the channels within the Thesen Island development, should seahorses find the habitat suitable, could become an important refuge area. Although both the Swartvlei and Keurbooms population abundance seems to fluctuate heavily, the Swartvlei population is thought to be more stable as it is characterized by low genetic diversity, whilst the Keurbooms population on the other hand has a higher genetic diversity possibly due to recruitment from the other two populations.

Although the importance of the two smaller estuaries as suitable habitats for the Knysna seahorse should not be underestimated research results ultimately suggest that the conservation of the Knysna population is of major importance for the survival of the species. There are however a number of questions still to be answered. For example more research is needed on a) habitat use and movement patterns of seahorses, b) the link between population abundance and flooding events, c) The importance of satellite populations and in particular does the Keurbooms host a permanent seahorse population or merely acts a temporary habitat during favourable conditions?

And that in a nut shell or rather a clam is about all we know. The Knysna seahorse may derive its name from the greek word for sea monster but the real monster may be the continued and varied threats facing this species. So remember the seahorse next time you are out boating on the estuary and keep the speed to the deep channels.