

Recent Sightings of Longsnout Seahorse, *Hippocampus reidi* in the marine environment of St. Kitts, Lesser Antilles

R. Stimmelmayer^{1,4}, M. Sullivan², V. Latchman³

1) Ross University School of Veterinary Medicine, Box 334, Basseterre, St. Kitts

2) St. Kitts Reef Ecology Watch Group, St. Kitts

3) Kenneth's Dive Center, Basseterre, St. Kitts

4) Department of Veterinary Science, IAC, CRCD, University of Alaska Fairbanks, PO Box 99715

Abstract. Only two species of seahorses occur in the Caribbean: the Longsnout, *Hippocampus reidi*, and Lined Seahorse, *Hippocampus erectus*. Between 2007-8, several *H. reidi* specimens were repeatedly sighted at different shallow reef dive sites at St. Kitts. The reefs are mixed habitat with corals, sea grass beds, and sponges. Previous Longsnout seahorse sightings dating back to the early 90s have been inconsistent and restricted to only one of the sites. The recent frequent sightings and identification of several new reef sites could indicate an increase in the local seahorse population size. Further studies are needed to estimate the local seahorse population size and habitat characteristics.

Key words: seahorse population, Caribbean, *Hippocampus reidi*, *Syngnathus caribbaeus*, pipefish

Introduction

Seahorses (genus *Hippocampus*, family Syngnathidae) are distributed circumglobally in the marine environment. Despite their wide distribution, their life history characteristics (i.e. sparse and patchy distribution, low mobility/site fidelity, low fecundity and, lengthy parental care) make them vulnerable marine species to targeted catch (i.e. traditional Chinese medicine ingredient; aquarium trade) bycatch, and habitat degradation (Foster and Vincent 2004). Since 2004, the entire genus has been added to Appendix II of CITES, thus requiring international trade management by the 166 signatory nations. In the Caribbean, only two species of seahorses occur, namely the Longsnout (*Hippocampus reidi*) and Lined Seahorse, (*Hippocampus erectus*). The Lined Seahorse is currently listed by the IUCN as a vulnerable species. General information on the abundance of Longsnout seahorse is lacking, and the species has been categorized as data deficient, indicating a need for further studies. *H. reidi* and *H. erectus* are both species used in traditional Chinese medicine.

Material and Methods

St. Kitts (17° 9' N 62° 45' W) is a small Caribbean island of volcanic origin that is part of the Lesser Antilles chain. As part of a large scale local marine ecosystem survey project, data on seahorse/pipefish species, site location, depth, number of specimens, and associated marine habitat were collected during roving diver/snorkel surveys (2006-2008). When

feasible, specimens were photo documented. In situ, visual identification of species was based on gross morphological distinct features (ie. color patterns, snout length, body shape, and presence/absence of skin appendages). We are using the taxonomy of Laurie et al. 1999.



Figure 1. Longsnout seahorse at Monkey Shoals

Results

Specific location data, and color patterns for all seahorse sightings are summarized in Table 1. The habitats associated with the sighted seahorses can be classified as mixed habitat with coral gardens, gorgonians, and intermittent sea grass beds. Only one male of 13 cm size and with a large brood pouch was observed. No *H. erectus* specimens were sighted despite the previous confirmed distribution of the

lined seahorse in St. Kitts waters. Longsnout specimens were always associated with holdfast structures such as sea grass, gorgonians, and black corals. In addition to the Longsnout seahorse, individual Caribbean pipefish (*Syngnathus caribbaeus*) specimens were repeatedly sighted in Spring 2008 at South Friars (n=4) and once at Monkey Shoals. The specimens found at South Friars were in shallow water (approx. 6 feet) and occupied shallow, slender rock crevices filled with sand. The specimen found at Monkey Shoals (approx. 25 feet) was found hiding among sea whips.

New Sites	Old Sites
Monkey Shoals September 2007: individual: brown January 2008: 2 individuals: 1 brown, 1 dark maroon slender male with distinct brood pouch; approx. height 13-17 cm; 1 smaller individual; May 2008: individual: brown; August 2008: 2 individuals: 1 brown, 1 black; approx. height 13 cm.	Brimstone Reef April 2007: individual: yellow coloration with white bands along tail; hiding in a sea plume; consistent seahorse sighting over the last several years
Challenger Reef March 2008: individual	Paradise Reef June/July 1993: individual: white blotches along tail
River Taw September 2007: individual: very light brown/yellowish	

Table 1: Listing of historic and current seahorse sightings in St. Kitts

Discussion

While Lourie et al. (2004) list *H. erectus* with a distribution for St. Kitts and Nevis, our study demonstrates the presence of *H. reidi* at St. Kitts, but not that of *H. erectus*. Predominant coloration of specimens in St. Kitts was black/brown to orange/maroon, similar to specimens in St. Lucia (Humann and Loach 2004); only one specimen showed yellow coloration with white-brown bands/saddles along tail, similar to a specimen from Little Cayman (Humann and Loach 2004) and Longsnout seahorse specimens identified at Saba (Saba Divers pers. comm.. 2007). Unpublished sightings of the Longsnout seahorse at Brimstone Reef are dating back to the early 1990s but sightings have been inconsistent at this site. The home range of the Longsnout seahorse is small with a reported size of 13.3 m² for females and 3.5 m² for males (Dauwe 1992), and during breeding season they are thought to show site fidelity. Despite the small home range, only one pair has so far been observed (Table 1) and one

individuals had a large brood pouch. The male specimen height was estimated 13-17 cm. Maximum adult height for *H. reidi* is reported at 17.5 cm (Laurie et al. 1999), and 8 cm height at first maturity (Vari 1982). Recorded mean range densities for *H. reidi* in Brazil are 0-51 m² and 0-0.006 m² (Dias & Ross 2003). Densities in St. Kitts are in the lower density range.

Caribbean pipefish (*Syngnathus caribbaeus*) specimens have previously not been reported from St. Kitts; however their reported Caribbean distribution includes the Greater and Lesser Antilles (Fishbase; Humann and Deloach 2004) where they inhabit weedy or sandy bottoms of shallow inshore waters.

The recent frequent sightings and identification of several new reef sites with Longsnout seahorses could indicate that St. Kitts has a viable and potentially expanding *H. reidi* population. However, St. Kitts, and in particular the Southeast Peninsula, is currently experiencing accelerated development that may impact near-shore marine water quality and resources through construction-related sediment run-off and intensified water tourism (i.e. boating, jet-skiing, snorkeling, diving, marine mammal park). Further studies are urgently needed to better define the current seahorse population size/density in the waters of St. Kitts.

Acknowledgement

We thank the following people in alphabetical order for contributing additional sighting information: J. Andrews, T. Beths, J. Carloni (pipefish), F. Heidema (pipefish), Kenneth Samuel, G. Touzot-Jourde and D. Mottram.

References

- Dias TL, Rosa AIL(2003) Habitat preferences of a seahorse species (*H. reidi*) in Brazil. *Aqua* 6: 165-176
- Dauwe B (1992) Ecologie van het zeepaardje *Hippocampus reidi* (Syngnathidae) op het koraalrif van Bonaire (N.A.): Habitatgebruik reproductie en interspecifieke interacties. MSc thesis, Rijksuniversiteit Groningen, Haren, The Netherlands.
- Foster SJ, Vincent ACJ (2004) Life history and ecology of seahorses: implications for conservation and management. *J Fish Biology* 65:1-61
- Humann . and Deloach N (2004) Reef Fish Identification. New World Publications Inc
- Lourie SA, Foster S, Cooper EWT, Vincent ACJ (2004). A guide to the identification of seahorses. CITES/WWF North America. 118pp
- Lourie, SA et al. (1999) The taxonomy of Vietnam's exploited seahorses. *Biol J. Linnean Society* 66(2): 231-56
- Vari RP (1982) Fishes of the Western North Atlantic, Part 8. Order Gasterosteiformes, Suborder Syngnathoidae (*Doryrhamphinae*, *Syngnathinae*, *Hippocampinae*). Sears Found. for Marine Research, Yale UP, New Haven. 198pp