



## **Effects of abiotic environmental factors on reproduction in the lined seahorses, *Hippocampus erectus*, in Sweetings Pond, Eleuthera**

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Sweetings Pond, on the island of Eleuthera, has a multitude of unique factors including an unusually large density of lined seahorses, *Hippocampus erectus*. With seahorses being a charismatic species with economic importance, it is crucial to understand how their environment affects their reproductive behaviors. The pond was divided into five microhabitats: Caves, Emma's, Quarry, Group, and Control. The sex ratios and abundance of pregnant males were analyzed along with the different abiotic factors across the five microhabitats within the pond. Results indicate that across the five microhabitats the Caves site ratio of males to females was significantly skewed towards males, with 78% of the seahorses found being male and furthermore 36% of the males were determined to be gravid males and 42% being nongravid males. After further investigation, it was discovered that the Caves site has the coolest average water temperature (27.4°C) and the highest abundance of food compared to the other four microhabitats, which may lead to this high abundance of gravid males. The variance between the summer and spring months in relation to gravid males revealed that the spring months had significantly more gravid males (72%) whereas the summer months only had 35% gravid males. This finding may be due to lower air temperatures and less rain fall that occurs during the spring months. The knowledge gained regarding the environmental effects on seahorse reproduction will lead to a future study to determine a possible preferred breeding ground. Hopefully the results gathered from the preferred breeding ground study will shed light onto the ideal conditions for *H. erectus* reproduction.

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