Big brother is watching: gaining insights into seahorse behaviour using GoPro cameras

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Observation bias is an Achilles heel of behavioural research, particularly during underwater, in situ assessments. The advent of small, affordable underwater cameras presents an opportunity to overcome this specific obstacle, especially in relatively sedentary marine organisms such as seahorses. The efficacy of using cameras in seahorse behavioural research does, however, remain unexplored. GoPro cameras were used to study the behaviour of the Knysna seahorse (Hippocampus capensis) within a residential marina estate in South Africa. Four cameras were deployed over three time periods in summer (Oct–Dec 2015; Dec–Jan 2016; Jan–Mar 2016) throughout the day (morning, midday, afternoon) within artificial Reno mattress habitat (horizontal wire cages filled with rocks), to ascertain whether: I) cameras can be used to investigate seahorse behaviour, II) seahorse behaviour changes throughout the day, III) seahorse behaviour can be used to assess the impact of an external stressor (boat noise) on H. capensis. Thirty-six hours from a total of 161 hours (22.4 %) captured, contained footage of seahorses. Seahorses were significantly more visible during the morning and spent > 80 % of their time feeding. Courting behaviour, similar to morning greetings described for other seahorse species, were observed exclusively during the morning. Boat noise increased during the December holiday period and a significant decrease in seahorse visibility, time spent feeding, and courting events were noted during this time, which suggests that noise has an adverse impact on the behaviour of this species. This study proves the efficacy of using GoPro cameras in seahorse behavioural research.

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