

ZOOL 567- Topic Summary

The mating behaviour of seahorses was investigated. More specifically, mate choice was examined, and the behaviours that are correlated with the selection of finding a mate (greetings, courtship, mate preferences). Observations of mate choice were recorded using digital video cameras that were in test tanks connected to a computer that generated films in real-time (Mattle and Wilson, 2009). The mate-choice experiments that involved seahorses being in test tanks were conducted during the first hours of daylight, as that is when seahorses are reproductively most active (Vincent and Sadler 1995; Masonjones and Lewis 1996; Mattle and Wilson 2009).

Many behaviours can be found during the process of selecting a mate, by researchers' observations who know the precise behaviours and have a rich understanding to differentiate between the different practices. The process of selecting a mate has various factors that have evolved in seahorse reproductive ecology (Mattle and Wilson, 2009). Reproductive behaviour that has been linked to mate selection includes the following: social interactions and reproductive status, greetings, courtship, aggression, also the degree of social promiscuity along with size-assortative mating (Naud et al., 2009). Greetings as indicated by Naud et al. (2009) were distinguished by body brightening along with at least 2 of 4 common ritualistic behaviours. Naud et al. (2009) defined courtship as readiness to mate being characterized by both greeting behaviours and pointing (female lifting head toward the surface) and pumping (male contracting pouch) or rising (pair swimming vertically). Mating was exhibited by rising and transfer of eggs, while aggression was noted when individuals engaged in tail wrestling, chasing, or rapid snout strikes (snapping) according to Naud et al. (2009). The degree of social promiscuity along with size-assortative mating was also investigated by counting how many partners individuals greeted or courted during each breeding season, and measuring the trunk length, respectively (Naud et al., 2009).

The characteristics that affect mating behaviour in seahorses can range from a variety of influences including courtship roles, sex roles, mate selection, to the type of relationship seahorses exhibit. Masonjones and Lewis (2000) sought to measure the relationship between courtship roles and potential reproductive rates when comparing male and female seahorses to determine if the sex that competes more intensely is the sex with a higher potential reproductive rate. Researchers interested in understanding sex roles observed conventional sex roles despite male pregnancy through a greater amount of courtship behaviour and distinguished aggressive behaviours seen in males (Vincent et al., 1992; Vincent, 1994). Preferences for a certain trait in mates have been noted by Mattle and Wilson (2009) for males to prefer larger females and by Bahr et. al (2012) that females prefer males with olfactory cues that are different in genetic makeup, rather than similar. Genetic monogamy despite social promiscuity has been detected by Wilson and Martin-Smith (2007) in DNA samples extracted of male brood pouches and embryos indicating that all males of the study had mated monogamously. Faithful pair bonds mating repeatedly and exclusively were found by Vincent and Sadler (1995) to be displayed by social and sexual monogamy due to the performance of daily greeting rituals, partners only mating with one another, and abstaining opportunities to interact with other individuals. Evolution has advanced seahorses, specifically males to not only become the sex that becomes pregnant, but to compete more intensely for mates (Vincent,

1994; Vincent et. al, 1992). These results and findings provide knowledge in gaining a deeper understanding of the multiple influences that may impact seahorse mating behaviour.

Many scopes to understanding influences on mating behaviour in seahorses are still left unknown. Vincent et al. (1992) points out that future work should try and find emphasis in an ecological understanding along with investigating social factors that may lead us to the understanding of different mating patterns across the Syngnathids. Future research should include larger samples of seahorses to examine seahorse reproductive behavior to ensure minimal statical errors in observations. Like Bahr and Wilson (2011) had done, future work should also explore multivariate interactions between traits to further expand the existing limited body of research. The use of captive-reared seahorses and comparing them to free-wild populations in the research will allow a differentiation if any, to be concluded (Mattle and Wilson, 2009).

Word count- 699

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