

**THE EMBRYONIC AND LARVAL DEVELOPMENT OF THE
PIPEFISH NEROPHIS LUMBRICIFORMIS (PISCES;
SYNGNATHIDAE).**

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Syngnathids (seahorses and pipefishes) exhibit some of the most specialized forms of parental care in animals and so are ideally suited to the study of the evolution of parental care. Accumulating evidence suggest that environmental variables as well as anatomical and physiological constraints may strongly influence differences in potential reproductive rates between the sexes thereby influencing mate competition and ultimately sexual selection. Nevertheless, the number of publications regarding syngnathid embryonic and larval development is still scarce, therefore not allowing significant comparative work. In this work, some brief descriptions on the reproduction as well as embryonic and larval development of the pipefish *Nerophis lumbriciformis* (Jenyns, 1835) are summarily described. *N. lumbriciformis* is a small and slender pipefish, commonly found in the rocky intertidal to about 30m. During the breeding season, males brood their offspring attached to their flattened ventral surface (Mean number of eggs= 49; N=114; range=18-84; average=48.71; SD=10.84) and throughout gestation parental care is exclusively paternal. The courtship

behaviour of *N. lumbriciformis* consists of three distinct phases (initial courtship, spawning and embrace) marked by prominent behavioural changes. Nevertheless, unlike other syngnathids that rise during and/or after egg deposition, the entire courtship ritual takes place in close contact with the substratum. We suggest that, at the behaviour level, the reduction of vertical and swimming elements may constitute an adaptation to the typical intertidal physical conditions. After fertilization, the larval development lasted approximately 25 to 30 days (15-16 °C and 14°C, respectively). After hatching, the newborn juveniles are free-swimming and no further care is provided. In normal conditions, at the time of “birth” the yolk sac has completely disappeared. Nevertheless, if the males are confronted with a stressful event, the premature release of larvae still possessing the yolk sac might occur.