

LIONFISH REPRODUCTIVE BIOLOGY

There are two species of lionfish, namely, *Pterois miles* and *Pterois volitans*, introduced in the Atlantic Ocean (Hamner, Freshwater, & Whitfield, 2007). *Pterois volitans* are more abundant off the coast of North Carolina and the Bahamas (Freshwater, et al., 2009). The species *Pterois miles*' native habitat is found in the Red Sea, Persian Gulf, and the Indian Ocean. On the other hand, *Pterois volitans* are found in both the Western and Central Pacific and Western Australia (Schultz, 1986).

Lionfish are known to be gonochoristic, meaning unisexualism describes by sexually reproducing species in which individuals have just one of at least two distinct sexes, pair spawners that exhibit a complex courtship prior to spawn release. Lionfish courtship occurs shortly before dark and may extend well into the night (Fishelson, 1975). The female ascends to the surface during the end of the courtship and releases two egg masses, one from each ovarian lobe. Lionfish spawn throughout the year at a frequency of approximately every four days in North Carolina and the Bahamas. This spawning frequency equates to over two million eggs annually (Morris, 2009).

Early life history and larval dispersal

Lionfish embryos develop at the ocean surface within the gelatinous egg mass. Lionfish larvae are grouped among an unresolved “morph B” morphotype for scorpaenid larvae (Leis and Rennis 2000). This morphotype is distinguishable by a large head, long triangular snout, serrated head spines, large pelvic spine, and pigmented pectoral fins. At hatching, pteroinae larvae are approximately 1.5 mm (Mito and Uchida 1958; Mito 1963). Recent assessments of the lionfish larval duration suggests that settlement occurs around 26 days post hatch (Ahrenholz and Morris, unpub. data), a pelagic larval duration that facilitates dispersal *via* oceanographic currents (i.e., Gulf Stream, Gulf of Mexico loop current, Caribbean current) throughout the Southeast U.S.A., Gulf of Mexico, and Caribbean (Cowen et al. 2006). The specific larval duration of lionfish is likely to vary depending on factors such as temperature.

Lionfish females mature around 180 mm total length, while male lionfish mature at approximately 100 mm total length (Morris 2009). Based on unvalidated estimates of daily, lionfish are capable of becoming sexually mature within their first year of life (Ahrenholz and Morris, unpub. data).

Bibliography

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