Remote video analysis of an unusual fish life-history combination: nest-building, paternal care and protogyny in a seabream

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Seabreams from two genera, *Spondyliosoma* and *Spicara*, have a unique life-history that combines nesting, paternal care and protogyny. Whereas protogyny is a common sexual system among seabreams, all, except *Spondyliosoma* and *Spicara* spp., are broadcast spawners. We describe the nesting behaviour of *Spondyliosoma emarginatum* as a basis for analysing this unusual life-history combination. We remotely filmed males on a nesting site with over 80 nests in South Africa. It has been postulated, based on morphometric data and general observations, that males invest heavily in nest-building, courtship, and egg-guarding, although these behaviours had never been documented. Energy intensive behaviours, including the clearing of invertebrate invaders (7 counts h\(^{-1}\)) and fanning of nests (86 counts h\(^{-1}\)), remained constant before and after the appearance of eggs. Males spent 79.2% of their time on the nest. The remainder was spent chasing other fish species and neighbouring males (12 counts h\(^{-1}\)) and avoiding predation. Paired spawning events proceeded in batches. Nest take-overs and sneaker male attempts were recorded. The young leave the nest immediately after hatching. Males did not feed during the 67-day nesting period. Energetic costs of nest maintenance, starvation and predation risk explain the condensed (relative to other seabreams) 51-day spawning season. Their short lifespan classifies *Spondyliosoma* spp. as opportunists, which may explain their success across a wide range of biogeographic zones from the cold temperate North Atlantic to the subtropical western Indian Ocean. These characteristics set *Spondyliosoma* spp. apart from the bulk of the seabreams, which are long-lived, broadcast-spawning, periodic strategists.