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Gonad development and evidence of protogyny in *Lethrinus nebulosus* (spangled emperor) from coastal waters off Negombo

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Spangled emperor, *Lethrinus nebulosus* is known to exhibit protogynous hermaphroditism (i.e. change sex from female to male). Gonad development and evidence of protogyny were investigated for *Lethrinus nebulosus* living in coastal waters off Negombo. Monthly collections were made from August 2007 to February 2008 from Negombo fish landing centers. Sexual dimorphism was not evident and males and females were not distinguishable externally. Gonads were prepared and analyzed using standard histological techniques. All stages of the mature male and female had rounded gonads with no specific features for macroscopic identification. Male and female maturity stages were assessed microscopically based on the most advanced germ cells (oocyte or spermatocyte) presented. Transitional gonads were characterized by appearance of spermatocysts and degenerated of oocytes in the same developmental stage. In addition, strands of stromal tissue within the lamellae were thickened and secondary strands were branched, increased blood vessels and sperm sinuses within the gonad wall provided early indication that sex transition had been initiated in *L. nebulosus*. The minimum size at which 50 % of males and females attained first sexual maturity was estimated to be 30.5 cm and 40.5 cm respectively. Transition occured around 28.5- 40.4 cm size class when female were matured. Males were predominated in the smaller size classes whereas females in the larger size classes. Most of the fisheries management theories have developed for gonochoristic populations and not applicable to these hermaphroditic species. Therefore, knowledge of hermaphroditism has critical implication in fisheries management.

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