SEXUAL MATURITY OF THE OCEANIC ISLAND GECARCINID *Johngarthia lagostoma* (H. MILNE EDWARDS, 1837)

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Gecarcinid crabs exhibit the highest degree of terrestriality within the infraorder Brachyura, providing different ecological functions in coastal and oceanic island habitats. *Johngarthia lagostoma* is an endemic species of oceanic islands in the South Atlantic (Rocas Atoll, Fernando de Noronha, Ascension, and Trindade). In Brazil, this species was categorized as an 'endangered' (EN) using IUCN criteria, requiring a better understanding of the reproductive aspects, such as the size at the onset of sexual maturity. Our study aims to assess the size of the sexual maturity of both sex of *J. lagostoma* in Trindade Island, Brazil, using three criteria: morphological (MO), physiological (PH), and functional (FU). During two expeditions (summer of 2019 and 2020), a total of 1,658 individuals (1,001 males and 657 females) were collected. To estimate MO, the carapace width (CW) was used as an independent variable, while the chelar propodus length (both sexes), gonopods lengths (males), and the 5th abdominal width (females) were used as dependent variables in relative growth analysis. For the PH estimate, crabs of both sexes were sacrificed and dissected for gonadal macroscopic analysis, with the proportion of mature individuals (developing and mature gonads) calculated in function of size (CW) along the ontogeny, to be estimated the size at which 50% of individuals were physiologically developed. Lastly, FU was also estimated for both sexes, considering individuals larger than MO size exhibiting mature or developing gonads (PH size). Generally, males and females reach MO size previously to PH size, being functionally mature at 56.4- and 56.6-mm CW, respectively. These values correspond to half of the maximum size that this species reaches in Trindade island (105.5 mm) and a literature review confirms this situation as a pattern for the gecarcinids crabs. These results can contribute to the conservation of *J. lagostoma* in Trindade Island, being used to manage the local population and identify reproductive and nursery areas.

Keywords: conservation, reproduction, terrestrial crab.

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