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Supplementary material

Reproductive capacity of a marine species (*Octopus tetricus*) within a recent range extension area

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Table S1. Determination of sex and maturity for *Octopus tetricus* based on the macroscopic characteristics of the gonads. Adapted from Mangold (1983) and Dia (1988)

Maturity stage	Female	Male
Immature	Whitish ovary. Small oviducal glands that are white, or orange at the base. Oviducal glands are located midway down or further up in the narrow oviducts	Accessory gland systems and testis are whitish and indistinct, or the testis is larger than the accessory gland and visible through the wall of the genital bag. Few spermatophores are present in the spermatophoric organ
Mature	Ovary large and yellow or orange, packed tightly with eggs that might be also present in the oviduct. Oviducal glands are large, dark in colour and positioned at the proximal oviduct; oviducts are longer and thick	Testis and accessory gland are of similar size. Spermatophores are present in Needham's sac; spermatophores can also be present in the penis
Spent	Shrunken purple ovary only with follicles and a few fully formed eggs. Oviducal glands are larger and pale, and the oviducts are flaccid	Testis is small and striated; few spermatophores still present in the penis or Needham's sac

Table S2. Oocyte morphological groups (based on Laptikhovsky and Nigmatullin 1992) and their correspondence with the phases of oocyte development (Burukovsky *et al*. 1977) found in females of *Octopus tetricus* from north-eastern Tasmania, Australia during 2011

Oocyte group	Oocyte external morphology	Oocyte developmental stage
1	Small and polygonial shape, transparent	Second phase of previtellogenesis (PV), primary follicle
2	Oval or globate shape, transparent	Third phase of PV, simple follicle
3	Leaf-like shape with numerous shallow longitudinal grooves in the surface, dark colour	Phases of complicated follicle. Formation of follicular folds, preparing for vitellogenesis (VG)
4	Nearly spherical shape, covered with reticulate grooves, dark colour	First and second phases of VG, vacuolization and yolk accumulation
5	Rounded, reticulate grooves almost disappeared but persistent around the vegetative pole, yellow colour	Third phase of VG, expulsion of follicle folds
6	Oval with smooth surface, amber-yellow colour	Fourth phase of VG, ovulated ripe egg

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