



XVIII CONGRESO LATINOAMERICANO DE CIENCIAS DEL MAR

HOTEL 13 DE JULIO - MAR DEL PLATA
ARGENTINA

4-8 NOVIEMBRE 2019

LIBRO DE RESÚMENES

XVIII Congreso Latinoamericano de Ciencias del Mar-COLACMAR 2019
Asociación Latinoamericana de Investigadores en Ciencias del Mar-ALICMAR
4-8 Noviembre, Mar del Plata, Argentina



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CONFERENCIAS

**NEW INSIGHTS ON REPRODUCTIVE FEATURES IN *LEPIDONOTO THEN
NUDIFRONS* (PISCES, NOTOTHENIOIDEI) AT THE SOUTH SHETLAND
ISLANDS, SUPPORTED BY PHYSIOLOGICAL EVIDENCE**

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The Southern Ocean marine ichthyofauna is dominated by a unique coastal demersal fish group, the suborder Notothenioidei. The nototheniid *Lepidonotothen nudifrons* is abundant in nearshore waters of the Scotia Arc region, where it is ecologically important as relevant prey of piscivorous predators. The knowledge of its reproductive biology arises exclusively from macroscopic and histologic descriptions of the maturation cycle. In this study, we provide for first time in *L. nudifrons* adult females, information on oocyte growth rate and change in testosterone (T) and estradiol (E₂) plasma levels throughout their ovarian growth period in summer. Briefly, 98 specimens were caught at Potter Cove (PC), South Shetland Islands (SSI), from November to late March in the consecutive campaigns 2016/2017-2017/2018. Histological analysis of the ovaries confirmed the macroscopic characteristic of the two distinct cohorts of oocytes: one leading clutch (Lc) of large orange vitellogenic oocytes, likely to be spawned in the upcoming reproductive season, and a second clutch of smaller whitish previtellogenic oocytes. In late March, females (n=17) had gonado-somatic index values between 13 and 20% (16.73±2.10) and total fecundity ranged between 2196 and 4652 oocytes/female (3209± 740), while Lc oocytes reached between 1.7 and 2.1 mm. The estimated Lc oocyte diameter average growth rate was 0.01 mm/day. Both, T and E₂ increased together with the oocyte growing throughout the analyzed seasons. However, E₂ variation was more significantly associated with the photoperiod than with the Lc oocyte size, whereas T was better associated with this last variable. Based on physiological evidence, mainly on the significant plasma level increase of both sex steroids observed in females captured in March, and also on the reproductive effort data, we suggest that: (1) specimens from March were presumably at a late vitellogenesis stage just prior to the oocyte final maturation, and thus *L. nudifrons* spawning period might onset in late March-April at SSI, (2) the inshore locality of PC is likely a spawning site for *L. nudifrons*, which reinforce the hypothesis that nearshore areas are spawning grounds for some notothenioids.

Keywords: Potter Cove, Notothenidae, Sex steroids, Hormonal analysis, Reproductive ecology