

BRIEF COMMUNICATIONS**New records of orange roughy *Hoplostethus atlanticus* juveniles in Chile**

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Orange roughy *Hoplostethus atlanticus* juveniles <24 cm fork length (L_F) (10–17 years old) were recorded for the first time in Chile, when 10 specimens were collected on the continental slope and seamount JF2 in Juan Fernandez Archipelago. The L_F , total mass, anatomical and parasitological information are reported. Relevance to current life-cycle hypotheses is discussed.

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Orange roughy *Hoplostethus atlanticus* Collet is a cosmopolitan deep-water fish found on seamounts, ocean ridges and the continental slope, normally <500 m (Branch, 2001). Its broad distribution includes the North and south-east Atlantic Ocean, southern Indian Ocean and South Pacific Ocean. This species has not been reported, however, for the North Pacific Ocean. Global understanding of *H. atlanticus* life cycle is poor for a species that has been classified within the top five most vulnerable exploited deep-sea fishes (Gordon, 2003). While recruitment has been suggested to be highly sporadic, this species shows low fecundity (Pankhurst & Conroy, 1987), extremely low growth rates and longevity >120 years (Tracey & Horn, 1999; Gili *et al.*, 2002).

Spatial and bathymetric distribution, duration, habitat and feeding of early life stages are poorly known (Shephard *et al.*, 2007). Sexual maturity is reached at a wide range of sizes, between 24 and 37 cm fork length (L_F), and ages between 21 and 40 years (Francis & Horn, 1997; Horn *et al.*, 1998; Clark *et al.*, 2000; Minto & Nolan, 2006; Shephard & Rogan, 2006). Therefore, for comparative purposes in the following discussion, fish <24 cm (L_F) or younger than 21 years will be regarded as juveniles.

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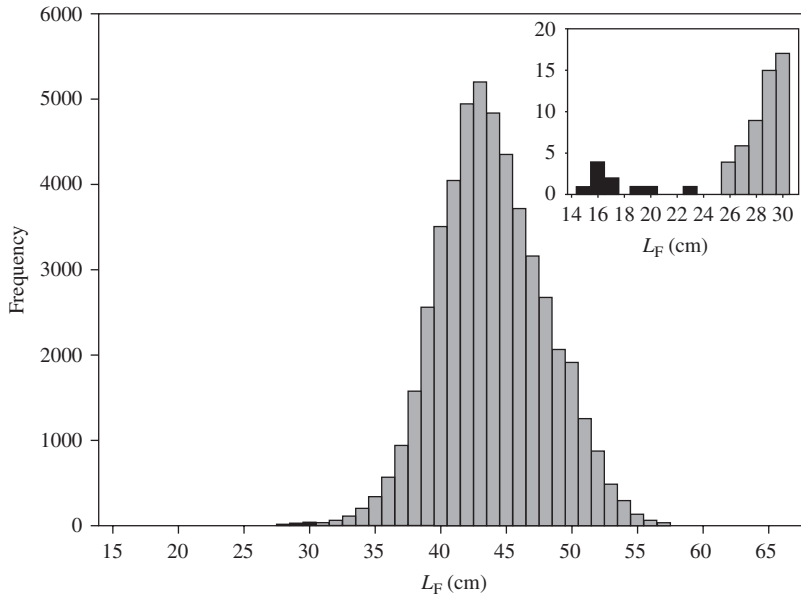


FIG. 1. Fork length (L_F) frequency distribution in *Hoplostethus atlanticus* commercial and scientific catches, 1999–2006 (pooled data from available sources). The $L_F < 30$ cm are re-scaled in the upper right corner (□, L_F from the pooled data base; ■, L_F from 10 juveniles reported in the present work).

In spite of intense fishing and research activity upon *H. atlanticus* populations, reports of juveniles are particularly rare. The few available records include age 0+ and 1+ year juveniles collected in the Chatham Rise, north-west of North Island (New Zealand) and Namibia (Mace *et al.*, 1990; Branch, 2001), and pre-recruit juveniles (14–30 years old) caught on Porcupine Bank, west of Ireland (Shephard *et al.*, 2007). In Chile, the smallest reported *H. atlanticus* so far corresponds to a 27 cm (L_F) fish, with an estimated age of 21 years (Gili *et al.*, 2002). After searching available databases from the national fishing monitoring programme (Fisheries Research Institute, IFOP, 1999–2002) and from the acoustic surveys programmes (University Austral of Chile, 2003–2006), two individuals of 26 cm L_F (c. 20 years old) were found to be the smallest *H. atlanticus* ever recorded in the country (Fig. 1).

In the present study, the first two records of *H. atlanticus* juveniles < 24 cm (L_F) found in Chilean waters are reported. These records include 10 fish collected from two bottom trawls, in June and August 2005. The first group ($n = 7$, 17.3 cm mean L_F) was collected from a commercial tow in the continental slope, 38 km offshore at 520 m depth. The second group ($n = 3$, 18.8 cm mean L_F) was caught at 770 m depth in the seamount named JF2, part of the Juan Fernandez Archipelago, c. 380 km offshore (Fig. 2 and Table I).

Specimens collected had the characteristic dark orange skin, except in anal and mouth cavities where the skin was black (Fig. 3). The number of dorsal, pelvic and anal rays and spines, and pectoral rays (Table II) confirmed species identity, following diagnostic criteria from Gomon *et al.* (1994) and Whitehead *et al.* (1986). L_F , measured to the nearest mm, ranged between 15.5 and 23.5 cm, and total wet mass (precision 1 g) between 71 and 326 g. According to growth curves currently