

BIOLOGY OF SEA CUCUMBER *Parastichopus tremulus* IN NORTH ATLANTIC WATERS

Mateo Barreiro², José Carlos Fernández², Esther Abad¹, Eva Velasco¹, Francisco Velasco³ and Julio Valeiras¹

¹ Centro Nacional Instituto Español de Oceanografía-CSIC, Centro Oceanográfico de Vigo, Subida a Radio Faro 50-52, 36390 Vigo, SPAIN.

julio.valeiras@ieo.csic.es, esther.abad@ieo.csic.es, eva.velasco@ieo.csic.es

²OPPF-4 Organización de Productores de Pesca Fresca del Puerto de Vigo. Edificio Ramiro Gordejuela, Puerto Pesquero de Vigo, s/n, 36202 Vigo, SPAIN.

mateobarreirosim@gmail.com, josecarlos@arvi.org

³ Centro Nacional Instituto Español de Oceanografía-CSIC, Centro Oceanográfico de Santander, Promontorio San Martín s/n, 39004 Santander, SPAIN

francisco.velasco@ieo.csic.es

Abstract: The red sea cucumber, *Parastichopus tremulus* (Holothuroidea), inhabits in the northeast Atlantic, from north European waters of Norway and Iceland to southern Europe, with occasional records in the Canary Islands (Schagerström and Sundell., 2021). *P. tremulus* can be found at depths from 20 m to 1900 m, inhabiting muddy floors, mainly. This species is a medium-sized with a cylindrical and elongate body, with a red dorsal part and a white ventral part (Christophersen et al., 2020).

The red sea cucumber is poorly studied and stock status is unknown since stock boundaries of this species in the area are not yet defined. This species has been discarded in trawling fisheries as a non-commercial species and lack of market. However, an increasing trend on landings of this species has been detected in bottom trawling European fisheries during last years. It is necessary to improve biological and ecological fisheries knowledge to manage appropriately the species.

P. tremulus was biologically sampled from fishing commercial catches at a monthly scheme collecting biological data (length distributions, weight, sex and maturity stage) of specimens caught at the northeast Atlantic, including several fishing grounds: Great Sole, Porcupine and Rockall. Specimens were collected between 2017 and 2018 from 400 m depth onwards. Obtained results indicate that *P. tremulus* fishing captures sizes have a mean of length of 200 mm and 200 g mean weight. The reproduction period seems to occur during winter season (December-March) in the studied area. The highest number of gonads in mature state corresponds to months of January and February. A large proportion of individuals were in resting stage from March. Outside the reproductive period, most of individuals presented poorly developed gonads. Data on biological cycle and fishing ecology contribute to a better knowledge of the species, management of this poor-data fishery and conservation of stocks.

Key words: *Parastichopus tremulus*, Reproductive cycle, Sea cucumber, Invertebrate biology, North Atlantic waters, Gonadal maturity

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