Thalassia Salentina
Thalassia Sal. 47 (2025), 115-120
ISSN 0563-3745, e-ISSN 1591-0725
DOI 10.1285/i15910725v47p115
http: siba-ese.unisalento.it - © 2025 Università del Salento

MOURAD CHÉRIF[1], RIMEL BENMESSAOUD[1],
MOHAMED NOURI AYADI[2], CHRISTIAN CAPAPÉ[3]

[1] Institut National des Sciences et Technologies de la Mer, port de pêche,
2025 La Goulette, Tunisia
[2] Association TunSea de Sciences participatives, Tunis, Tunisia
[3] Université de Montpellier, 34095 Montpellier cedex 5, France
e-mail: capape@orange.fr

# CONFIRMED OCCURRENCE OF THE POR'S GOATFISH *UPENEUS PORI* (MULLIDAE) IN THE TUNISIAN WATERS (CENTRAL MEDITERRANEAN SEA)

## SUMMARY

From a lot of mullid species captured around the Kerkennah Islands, 31 specimens of the Por's Sea goatfish *Upeneus pori* Ben-Tuvia and Golani 1989 were examined. They measured between 147 and 156 mm, in total length (TL) and their total body weight ranged between 32.6 and 40.8 g. Some morphometric measurements and merisctic counts were also carried out. These captures confirm that a viable population *U. pori* is at present successfully established in the Tunisian marine waters.

## INTRODUCTION

The Por's goatfish *Upeneus pori* Ben-Tuvia and Golani 1989 is known in the western Indian Ocean from the Gulf of Oman to the Red Sea (Golani *et al*., 2021). Southward, new records of *U. pori* have been reported from KwaZulu-Natal, South Africa, based on *in situ* photographs according to Uiblein and Lisher (2013). To the east, in the Pacific Ocean, Luo *et al*. (2023) reported a new record of *U. pori* from South China Sea.

*Upeneus pori* entered through Suez Canal into the Mediterranean Sea where Golani *et al*. (2021) noted that it was firstly recorded at Iskenderun Bay, Türkiye by Kosswig (1950) as *Upenoides* (= *Upeneus*) *tragula*, and then recorded off Israel as *Upeneus* sp. by Ben-Tuvia (1953) and Egypt (El Sayed, 1994). The species expanded its distribution from some areas of the Mediterranean Sea and reported from the Levant Basin (Saad, 2005; Bariche and Fricke, 2020), Cyprus (Iglesias and Frotte, 2015), Rhodes (Corsini *et al*., 2005),

Türkiye (Akyol *et al*., 2006), Greece (Stamouli and Dogrammatzi, 2016), Lybia (El-Drawany., 2013). In the central Mediterranean Sea, the species has been found in the Tunisian waters Ounifi-Ben Amor *et al*. (2016)., and to the north, around the Maltese Islands (Evans *et al*., 2015) and Sicily (Deidun *et al*., 2018).

With special regard to the Tunisian shallow coastal waters, local fishermen aware of fishing grounds informed us about the capture of an important lot of mullid specimens and among them were identified some *Upeneus pori*, offering the opportunity to describe these specimens in the present paper and to comment along the distribution and the true status of the species in the same region.

## MATERIAL AND METHODS

On 17 May 2025, the capture of several specimens belonging to different mullid species occurred around Kerkennah Islands located of the north-eastern region of the Gulf of Gabès in southern Tunisia (34° 39′ 29″ N, 11 ° 04′ 07″ E). The fishes were caught using trawler at a low depth, 20 m approximately on soft bottoms, and landed at a fishing site of these islands (Fig. 1).

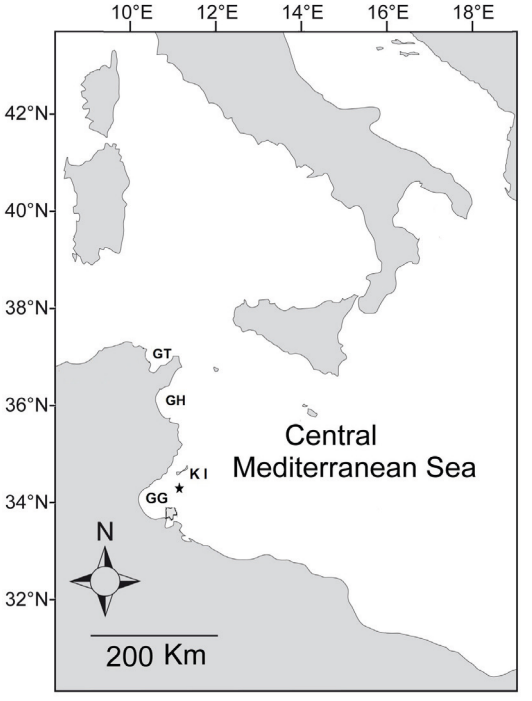


**Fig. 1** - Map of the Tunisian coast with black star indicating the capture site of *Upeneus pori*, in the waters surrounding the Kerkennah Islands (KI), GT = Gulf of Tunis, GH = Gulf of Hammamet, GG = Gulf of Gabès.

They were rapidly sold by fish traders due to their high economic value for human consumption, being very appreciated by local population. However, among these specimens we find the opportunity to observe 31 specimens of *Upeneus pori,* from which we were able to take some measurements to the nearest millimetre such as total length (TL), to weigh for total body weight (TBW), to the nearest decigram and photograph them. These observations are noted in Table 1 along with some meristic counts.

The relation between TL and TBW was used as a complement following Froese *et al.* (2011) to assess if the species found sufficient resources in the wild. This relation is $TBW = aTL^b$, and was converted into its linear regression, expressed in decimal logarithmic co-ordinates and correlations were assessed by least-squares regression. as: log TBW= log $a$ + $b$ log TL. Significance of constant b differences was assessed to the hypothesis of isometric growth if $b = 3$, positive allometry if $b > 3$, negative allometry if $b < 3$ (Pauly, 1983). Correlations were assessed by least-squares regression. and performed by using logistic model STAT VIEW 5.0.

## RESULTS AND DISCUSSION

The sampled specimens were identified as *Upeneus pori via* the combination of main morphological characters (Fig. 2): body elongate, snout rounded, chin with two short and fin barbel, maxilla ending below front of eye, two feeble opercular spines, first dorsal spine the longest, second dorsal fin opposite anal fin, caudal deeply forked, back and sides brown reddish, belly whitish, upper lobe of caudal with 7 brown bars with white interspace, lower lobe with 6 bars of same color, D1: VII-VIII, D2: 9, A: I +9, P: 13-15 General morphology, color, morphometric measurements and meristic counts are in agreement with Ben-Tuvia and Golani (1989), Ben Souissi *et al.* (2005). and Golani *et al.* (2021).

**Fig. 2** - Specimen of *Upeneus pori*, captured in the waters surrounding the Kerkennah Islands, scale bar = 20 mm.

A total of 31 *Upeneus pori* were examined, their TL ranged between 112 and 147 mm, and their TBW from 19.2 and 40.4 g. The sample was sexed and comprised 6 males, 15 females and the sex of 10 specimens was undetermined. The relationship between TL and TBW expressed in logarithmic co-ordinate is as follows log TBW = -4.046 + 2.597 * log TL; r = 0.926, n = 31. This relationship displays a negative allometry, however this result maybe the consequence of sampling hazards. It could be also due to an intra and/or interspecific competition for food, that considerably reduced the avaibility of prey items in the area known for its rich biodiversity as noted by Chérif *et al*. (2011, 2021, 2022). The present capture of an important lot of mullid species rather indicates that the species found favorable conditions to grow and reproduce. In addition, in total agreement with Ounifi-Ben Amor *et al*. (2016), these new findings of *U. pori* confirm that a viable population is at present successfully established in the Tunisian waters and expand the distribution of the species in the area.

The mullid species are not considered to be prone to large migrations even if some species found in the Mediterranean Sea are Herculean migrant (see Azzouz *et al*., 2011) and Lessepssian migrant (*sensu* Por, 1971). A migration of *U. pori* to southern areas such as the coast of Mozambique remains feasible, even though Uiblein and Lisher (2013) noted that further explorations are needed along the Mozambican coast to confirm the occurrence of the species in the area. In addition, to the east, the findings of *Upeneus pori* from South China remains questionable (Luo *et al*., 2023). The identification of these specimens based on morphological characteristics and DNA barcodes should not be doubted. Luo *et al*. (2023) added that this record expands the distributional range of *U. pori* in the world's oceans and enriches the species composition and biodiversity of the South China Sea. Similarly, following the opinion of Golani *et al*. (2021), concerning non-indigenous species recorded in the Mediterranean Sea, these *U. pori* have been probably transported into the Pacific Ocean *via* shipping or ballast waters and/or release or escape from an aquarium. Such patterns cannot be totally ruled out.

*Upeneus pori* displays a high economic value and as other mullid species, it is greatly appreciated for human consumption and locally is a targeted species. A management plan should be implemented in local fisheries together with the contribution of fishermen to preserve all the viable populations of mullid species occurring in the Tunisian waters and to avoid a total extinction.

## REFERENCES


Akyol O., Ünal V., Ceyhan T. 2006 – Occurrence of two lessepsian migrant fish, *Oxyurichthys pettersi* (Gobiidae) and *Upeneus pori* (Mullidae) from the Aegean Sea. *Cybium*, **30**(4): 389-390. DOI: https/ //doi.org/10.26028/cybium/2006.304.016

Azzouz K., Diatta Y., Mansour S., Boumaïza M., Ben Amor M.M., Capapé C. 2011 - First record of the West African goatfish *Pseudupeneus prayensis* (Osteichthyes: Mullidae) off the Tunisian coast (Central Mediterranean). *Acta Ichthyologica et Piscatoria*,**41**(2): 133-136. DOI: 103750/AIP20211.41.2.10

Bariche M., Fricke R. 2020 - The marine ichthyofauna of Lebanon: an annotated checklist, history, biogeograpphy, and conservation status. *Zootaxa* **4775**(1): 1-157. DOI: https://doi.org/10.11646/zootaxa.4775.1.1

Ben Souissi J., Mejri H., Zaouali J., CapapÉ C. 2005 - On the occurrence of the brownband goatfish, *Upeneus pori* Ben-Tuvia and Golani, 1989 (Mullidae) in Southern Tunisia (Central Mediterranean). *Cybium,* **29**(4): 410-412. DOI: https/ //doi.org/10.26028/cybium/2005.294.014

Ben-Tuvia A. 1953 – New Eritrean fishes from the Mediterranean coast of Israel. *Nature*, **172**: 464-465.

Ben-Tuvia A., Golani D. 1989 - A new species of goatfish (Mullidae) of the genus *Upeneus* from the Red Sea and the Eastern Mediterranean. *Israel Journal of Zoology*, **36**(2): 103-112.

Chérif M., Ben Amor M.M., Selmi S., GHARBI H., Missaoui H., C. Capapé. 2011 - Food and feeding habits of the red mullet *Mullus barbatus* (Osteichthyes: Mullidae) off the northern Tunisian coast (Central Mediterranean). *Acta Ichthyologica et Piscatoria*,**41**(2): 109-116. DOI: 103750/AIP20211.41.2.06

Chérif M., Benmessaoud R., Capapé C. 2021- Age and growth of the red mullet *Mullus barbatus* (Mullidae) from northern Tunisia (central Mediterranean Sea). *Annales, Ser.ies Historia Naturalis*, **31**(2): 235-242. DOI: 10.19233 /ASHS.2021.29

Chérif M., Benmessaoud R., Capapé C. 2021- Growth patterns and age structure of the red mullet *Mullus surmuletus* (Mullidae) from northern Tunisia (central Mediterranean Sea). *Annales, Ser.ies Historia Naturalis*, **32**(1): 173-182. DOI: 10.19233 / ASHS.2022.18

Corsini M., Margies P., Kondilatos G., Economidis P.S. 2005 - Lessepsian migration of fishes to the Aegean Sea. First record of *Tylerius spinosissimus* (Tetraodontidae) from the Mediterranean, and six more fish records from Rhodes. *Cybium*, **29**(4): 347-354. DOI: https/ //doi.org/10.26028/cybium/2005.294.005

Deidun A., Zava B., Insacco G., Corsini-Foka M. 2018 – First record of the Por's goatfish Upeneus pori (Actinopterygii: Perciforms: Mullidae) from Italian waters (Western Italian Sea). *Acta Ichthyologica et Piscatoria*, **53**: 137-145. DOI: https: doi.org/10.3750/aiep.02269

El-Drawany M.A. 2013 – Some biological aspects of the Por's goatfish (Family: Mullidae) from Tripoli coast of Libya. *Egyptian Journal of Aquatic Research*, **39**(4): 261-266. DOI: 10.16/j.ear.2013.11.003

El-Sayed R.S. 1994 - Checklist of Egyptian Mediterranean fishes. National Institute of Oceanography and Fisheries, Alexandria, Egypt: 77 + XI pp.

Evans J., Barbara J., Schembri P.J. 2015. Updated review of marine alien species and other «newcomers» from the Maltese Islands (central Mediterranean). *Mediterranean Marine Science*, **16**(1): 225-244. DOI: 10.12681/mms.1064

Froese R., Tsikliras A.C., Stergiou K.I. 2011 - Editorial note on weight-length relations of fishes. *Acta Ichthyologica et Piscatoria*, **41**(4): 261-263. DOI: 103750/AIP20211.41.4.01

Golani D., Azzurro E., Dulcic J., Massuti E., Orsi-Relini L. 2021 - *Atlas of Exotic Fishes in the Mediterranean Sea. 2nd edition*. CIESM Publishers, Paris, Monaco: 365 pp.

Iglésias S.P., Frotté L. 2015 - Alien marine fishes in Cyprus: update and new records. *Aquatic Invasions*, **10**: 425-438. DOI: http://dx.doi.org/103391/ai.2015.10.4.06

Kosswig C. 1950. Eryträische Fishes im Mittelmeer und an der Grenze der Ägais. Syllegoomena Biologica. Festchrift Kleinschmidt. Leipzig Akademia Verlag: 203-212.

Luo Z., Yi M., Gu S., Lin H.D., Yan Y. 2023 - A new record of *Upeneus pori* (Actinopterygii: Syngnathiformes: Mullidae) from the South China Sea: Integrating morphology and DNA barcoding *Acta Ichthyologica et Piscatoria*, **53**: 137-145. DOI: 10.3897/aiep.53.103343

Ounifi-Ben Amor, K., Rifi M., Ghanem R., Draeif I., Zaouali J., Ben Souissi J. – 2016. Update of alien fauna and new records from Tunisian marine waters. *Mediterranean Marine Science*, **17**(1): 124-143. DOI: 10.12681/mms.1371

Pauly D. 1983 - Some simple methods for assessment of tropical fishes. FAO Fishery Technical Papers, **234**: 3-10.

Por F.D. 1971 - One hundred years of Suez Canal- A century of lessepsian migration: retrospect and viewpoints. *Systems Biology,* **20** (2): 138-159.

Saad A., 2005 - Checklist of bony fish collected from the coast of Syria. Turkish Journal of Fisheries and Aquatic Sciences **5**(2): 99-106.

Stamouli C. Dogrammatzi A. 2016 – First record of the Lesspsian fish *Upeneus pori* Ben-Tuvia and Golani, 1989 in Karakinos Gulf. *Mediterranean Marine Science*, **17**(1): 244. DOI: 10.12681/mms.1684

Uiblein F., Lisher, M. 2013 - A new goatfish of the genus*Upeneus* (Mullidae) from Angoche, northern Mozambique. *Zootaxa*, **3717** (1), 85–95. DOI: https: doi.org/10.11646/zootaxa.37