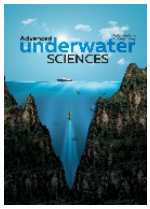
Advanced Underwater Sciences
http://publish.mersin.edu.tr/index.php/aus/index
e-ISSN: 2791-8734



A Rare Occurrence of Tripterygion Tripteronotum (Risso, 1810) from the North-Eastern Mediterranean

Deniz Ergüden*[1], Sibel Alagöz Ergüden[2], Menderes Şereflişan[3], Necdet Uyğur[3]

[1]Iskenderun *Technical University, Marine Sciences and Technology Faculty, Marine Sciences Department, Iskenderun, Hatay,* Türkiye
[2]*Vocational School of Imamoğlu, University of Çukurova, TR 01700 Imamoglu, Adana,* Türkiye
[3]*Vocational School of Maritime, University of Iskenderun Technical, TR 31220 Iskenderun, Hatay,* Türkiye

Keywords
Red-Black Triplefin,
Triypterygiidae,
Endemic fish,
Iskenderun Bay,
Türkiye.

ABSTRACT

One male specimen the Red-black triplefin Tripterygion *tripteronotum* (Risso, 1810) was recorded by a SCUBA diving expedition at a depth of 3 m on 13 May 2017 in Iskenderun Bay, Turkey. T. *tripteronotum* is endemic to the Mediterranean and Black Sea. It is extremely rare in the eastern part of the Mediterranean Sea. This paper reporting an endemic fish confirms the occurrence of the species in Iskenderun Bay (North-Eastern Mediterranean, Turkey) in addition to the present report is the first observation for this location in the Mediterranean coast of Turkey. The previous studies have neither given any specific location nor any detailed information about this endemic fish species. Besides the historical captured record of the species in the Mediterranean Sea was well documented in this study.

1. INTRODUCTION

The genus Tripterygion includes well-known representatives of the family Triypterygiidae and consists of 4 valid species worldwide (Zander; 1986; Carreras-Carbonell et al., 2007; Froese and Pauly, 2022). The genus Tripterygion Risso, 1827 is represented four species in the Mediterranean, namely; Black-faced blenny Tripterygion delaisi Cadenat & Blache, 1970, Small triplefin blenny T. melanurus Guichenot, 1850, Triplefin blenny, T. tartessicum Carreras-Carbonell, Pascual & Macpherson, 2007 and Red-black triplefin T. *tripteronotum* (Risso, 1810). Of these species T. *tripteronotum* is also known as Three fin blenny, Risso's triplefin (Golani et al., 2006), or Moma Nariguda (IUCN, 2022).

The Red-black triplefin T. *tripteronotum* is widespread in the Eastern Adriatic Sea, Mediterranean Sea, Sea of Marmara, and Black Sea (Erazi, 1942; Tunesi and Molinari 2005; Carreras-Carbonell et al., 2007; Sefc et al., 2020; Froese and Pauly, 2022). In the Black Sea, T. *tripteronotum* commonly occurs off the Crimea and Ukraine coasts (Movchan, 2009).

Although the occurrence of T. *tripteronotum* has been reported in a checklist of fishes from Turkish marine waters in the Mediterranean Sea in previous years (Bilecenoğlu et al., 2014). Previous studies have neither given any specific location nor any detailed information about this endemic fish species.

The present paper reports the first occurrence and is the confirmation of the Red-Black triplefin T. *tripteronotum* from the Northeastern Mediterranean Sea, Turkey. This species could be considered as exceptionally rare in the easternmost area of the Mediterranean Sea, Turkey. Besides the present report is the first observation for this species in the Mediterranean coast of Turkey.

* **Corresponding Author**

*(deniz.erguden@iste.edu.tr) ORCID ID 0000-0002-2597-2151
(alagozs@cu.edu.tr) ORCID ID 0000-0003-4363-433X
(menderes.sereflisan@iste.edu.tr) ORCID ID 0000-0001-9936-7715
(necdet.uygur@iste.edu.tr) ORCID ID 0000-0002-4460-1735

Cite this article;

Ergüden, D., Ergüden, S. A., Şereflişan, M. & Uyğur, N. (2022). A rare occurrence of Tripterygion tripteronotum (Risso, 1810) from the North-Eastern Mediterranean. *Advanced Underwater Sciences*, 2(2), 33-36

Research Article **Received: 08/03/2022; Accepted: 20/09/2022**

2. METHOD

A single male specimen of T. *tripteronotum* was photographed at a depth of 3 m during a SCUBA diving expedition in Madenli coast (Coordinate: 36°28′N, 35°59′E), Iskenderun Bay on 13 May 2017 (Fig. 1). This specimen was caught on rocky bottoms, partially covered with algae (Fig. 2a,b).

Species identification follows Fricke (2002) and Zander (1986), and taxonomic nomenclature follows Eschenmeyer et al. (2022). The specimen was identified as a male of T. *tripteronotum* according to Sefc et al. (2022).

All morphological descriptions and colors agree with the descriptions given by Carreras-Carbonell (2007).

Figure 1. Map showing capture site (●) of T. *tripteronotum* in Iskenderun Bay

Figure 2a. Underwater observation of T. *tripteronotum* from Madenli coast, Iskenderun Bay (Frontal view)

Figure 2b. Underwater observation of T. *tripteronotum* in Madenli coast, Iskenderun Bay (Dorsal view)

3. RESULTS

The body is elongate and compressed, Scales ctenoid, Head broad, scaleless, profile acute, lips prominent. Eyes moderately large, head length more than 2.5 times orbit diameter. The first ray of the second dorsal fin of the mature males has the distal half not united by a membrane with the following ray. The blotch on the caudal peduncle not reaching its base. Caudal fin is truncate.

Color (male specimen): The body is reddish. The head is black. The caudal fin usually has four reddish or brownish bars.

4. DISCUSSION

The Red-black triplefin T. *tripteronotum* is a demersal, non-migratory species and also it is non-commercial fish species with lives in rocky coastal areas and inhabits cold, temperate, subtropical, and tropical areas (Fricke, 2002). Adult specimens are highly territorial, with a relatively sedentary lifestyle (Schunter et al., 2014). Besides Tripterygiids species are known a resident intertidal species with homing behavior (Gibson, 1999) found in shallow rocky shores. Their larvae are planktonic and occur in shallow waters (Watson, 2009).

In the Mediterranean, the Red-black triplefin T. *tripteronotum* is found common on rocky bottoms on the continental shelf, usually between 6 m and 12 m depth ranges (Kovačić and Golani, 2007). Adult specimens are

found on shallow rocky habitats up to 6 m. Their common size can reach 6.5 cm in TL and up to 8 cm in TL (Zander, 1986). T. *tripteronotum* feeds on benthic invertebrates (Gibson, 1999; Golani et al., 2006).

Although IUCN (2022) claimed that the species is usually found at 0-30 m depth ranges. The male specimen reported in this study was observed at about 3 m depth in its natural habitat in the Madenli coast on a rocky area, during a SCUBA diving expedition (Fig. 2a,b). This depth range is in accordance with the literature (IUCN, 2022). The present record for this specimen was found adult male specimen and similar to the previous record for Mediterranean samples report (Carreras-Carbonell et al., 2007; Sefc et al., 2020). The historical captured record of the species in the Mediterranean Sea was documented in Table 2.

Table 2. Records of Tripterygion *tripteronotum* in the Mediterranean Sea in 1959-2017.

Author(s)	Location/Country	Year (s)	Depth (m)	Sampling
Carreras-Carbonell et al. (2007)	Girne, Cyprus	1997-2002	0-5.5	Free-diving-Hand Net
	Aegean Sea, Marmara Sea, Turkey	1988-1969	-	Hand Net
	Greece	1969-2004	0-2	Hand Net
	Montenegro	1969-1977	-	Hand Net
	Croatia	1959-1990	0-1	Hand Net
	Italy	2004-2006	0-2	Hand Net
	France	2004-2005	0-2	Hand Net
	Spain	2002-2005	0-2	Hand Net
	Malta	1974-2005	0-1.5	Hand Net
	Morocco	1985	-	Hand Net
	Tunusia	1998	0-1.8	Hand Net
Sefc et al. (2020)	Eastern Mediterranean Sea	2006-2017	0-2	Free-diving-Hand Net
This study	Iskenderun Bay, N.E. Mediterranean, Turkey	2017	3	Scuba diving-Underwater observation

To date, *T. tripteronotum* has not been reported with certainty from the Iskenderun Bay (North-Eastern Mediterranean coast of Turkey). This report, hence, is very important information since it is the first confirmed occurrence of *T. tripteronotum* and with the first detailed information about its presence from, North-Eastern Mediterranean Turkey (Iskenderun Bay).

5. CONCLUSIONS

T. tripteronotum is endemic to the Mediterranean and the Black Sea. It is not targeted commercially and there are no known major threats to its survival. Thus, this species is considered as "Least Concern" in the Global Red List Categories and Criteria, (Holleman, 2014; IUCN, 2022; Malak et al., 2011). However, It is rare in the eastern part of the Mediterranean Sea. Thus, we propose that further studies are needed in this region to monitor for this endemic Mediterranean fish species.

Author contributions

The authors contributed equally to the article.

Conflicts of interest

The authors declare that they have no conflict of interest.

Statement of Research and Publication Ethics

For this type of study formal consent is not required.

REFERENCES

Bilecenoğlu, M., Kaya, M., Cihangir, B. & Çiçek, E. (2014). An updated checklist of the marine fishes of Turkey. Turkish Journal of Zoology, 38, 901-929.

Carreras-Carbonell, J., Pascual, M. & Macpherson, E. (2007). A review of the *Tripterygion tripteronotus* (Risso, 1810) complex, with a description of a new species from the Mediterranean Sea (Teleostei: Tripterygiidae). Scientia Marina, 71(1), 75-86.

Erazi, R. A. R. (1942). Marine fishes found in the Sea of Marmara and in the Bosphorus. Rev. Faculty Scientific University of Istanbul, 7, 103–114.

Eschmeyer, W. N. (Editor). (2022). Catalog of Fishes. Updated 05 April 2022. Available at: http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp. Accessed on 28 July 2022.

Froese, R. & Pauly, D. (Editors) (2022). FishBase. World Wide Web electronic publication. www.fishbase.org, version (06/2022).

Fricke, R. (2002). Tripterygiid fishes of New Caledonia, with zoo-geographical remarks. Environmental Biology of Fishes, 65, 175-198.

Gibson, R. N. (1999). Movement and homing in intertidal fishes. pp. 97-125. In M.H. Horn, K.L.M. Martin and M.A. Chotkowski (eds) Intertidal Fishes. Life in Two Worlds, Academic Press, London.

Golani, D., Öztürk, B. & Başusta, N. (2006). Fishes of the Eastern Mediterranean. Turkish Marine Research Foundation (TUDAV), Istanbul, Turkey.

Holleman, W. (2014). *Tripterygion tripteronotum*. The IUCN Red List of Threatened Species 2014: e.T194896A49092779. https://dx.doi.org/10.2305/IUCN.UK.2014.3.RLTS.T194896A49092779.en. Accessed on 28 July 2022.

IUCN (2022). The IUCN Red List of Threatened Species. Version 2022-1. https://www.iucnredlist.org

Kovačić, M. & Golani, D. (2007). First record of *Papillogobius melanobranchus* in the Mediterranean Sea and new data on geographic distributions, bathymetric ranges and morphology of several small benthic fishes in the Levant. Cybium, 31(4), 417-425.

Malak, D. A., Livingstone, S. R., Pollard, D., Polidoro, B. A., Cuttelod, A., Bariche, M., Bilecenoglu, M., Carpenter, KE., Collette, B. B., Francour, P., Goren, M., Kara, M. H., Massutí, E., Papaconstantinou, C. & Leonardo Tunesi, L. (2011). Overview of the conservation status of the marine fishes of the Mediterranean Sea. Gland, Switzerland and Malaga, Spain

Movchan Yu V. (2009) Fish of Ukraine (taxonomy, nomenclature, notes). Zbirnyk Prats Zoologichnogo Muzeyu, 40, 47-87.

Schunter, C., Pascual, M., Garza, J. C., Raventós, N. & Macpherson, E. (2014). Kinship analyses identify fish dispersal events on a temperate coastline. Proceedings. Biological Sciences, 281(1785), 20140556.

Sefc, K. M., Wagner, M., Zangl, L., Weib, S. & Steinwender, B. et al. (2020). Phylogeographic structure and population connectivity of a small benthic fish (*Tripterygion tripteronotum*) in the Adriatic Sea. *Journal of Biogeogr*apghy, 47, 2502-2517.

Tunesi, L. & Molinari, A. (2005). Species richness and biogeographic outlines of the fish assemblage of the Portofino Marine Protected Area (Ligurian Sea). Biologia Marina Mediterranea, 12(1), 116-123.

Watson, W. (2009). Larval development in blennies. pp. 309-350. In R.A. Patzner, E.J. Gonçalves, P.A. Hastings and B.G. Kapoor (eds.) The biology of blennies. Science Publishers, Enfield, NH, USA.

Zander, C. D. (1986). Tripterygiidae. pp. 1118-1121. In P.J.P. Whitehead, M.L. Bauchot, J.C. Hureau, J. Nielsen and E. Tortonese (eds.) Fishes of the North-eastern Atlantic and the Mediterranean, Vol. 3. UNESCO, Paris.