INSTM Bulletin
Marine and Freshwater Sciences

Vol. 50, 2025, 1–5

Note

First record of *Sudis hyalina* (Osteichthyes, Paralepididae) in the North of Tunisia (Southwestern Mediterranean Sea): A Contribution by Citizen Science

Mohamed Nejmeddine BRADAI

Association de Conservation de la Biodiversité dans le Golfe de Gabès (ASCOB-Syrtis). Tunisia

***Correspondence:** mednejmeddine.bradai@instm.rnrt.tn

Received: 29/07/2024; **Accepted:** 27/12/2024; **Published:** 06/01/2025

Abstract: Tunisian fish fauna and generally that of the Mediterranean Sea, is continuously changing due to climatic changes and anthropogenic activities; the invasion of Non-Indigenous Species is a good example. These species and other rare and data limited species could go unnoticed by researchers. To escalate records and inventories of rare species, citizen science could be an important contributor on this with the support of taxonomic experts. In this note, thanks to citizen science, we present the first record of *Sudis hyalina* Rafinesque, 1810 in the region of Bizerte; northern Tunisia (southwestern Mediterranean).

Keywords: Paralepididae; *Sudis hyalina*; first record; distribution; Tunisian coasts; southwestern Mediterranean.

1. Introduction

Fish biodiversity is facing several anthropic pressures (e.g. pollution, habitat destruction, overfishing…) (Fortibuoni *et al*., 2015). Along with climate change, species assemblages are subject of a big modification which leads to many gaps mainly concerning rare deep-sea species knowledge (Danovaro *et al*., 2010).

Citizen science is emerging as a key component for the exploration of marine biodiversity, being widely acknowledged by scientists and conservationists. In this note, we report for the first time, thanks to citizen science, a rare deepwater fish *Sudis hyalina* Rafinesque, 1810 in the northern water of Tunisia (southwestern Mediterranean).

2. Material and methods

Citizen science known in Tunisia for more than ten years aims to communicate information to scientists which helps to establish databases and therefore contribute to the monitoring of the marine environment. The Facebook group TunSea, launched in 2020, now restructured as TunSea NGO for

Participatory Science, contributes strongly in this approach. In this context, fishers share photos of fish species they were not familiar with, such as the present case (Figure 1).

Figure 1: *Sudis hyalina* caught off Bizerte, northern Tunisia

The specimen was caught by bottom trawler in 30 June 2024 off Bizerte at the following coordinate 37°45'04" N;9°42'47" E, at 500 m depth (Figure 2). It Measured 26 cm.

Figure 2: Map showing the capture site of *Sudis hyalina* of Bizerte (Tunisia).
(*Crédits map: Alamy Stock Photo*)

3. Results

The specimen was identified as the longfin barracudina *Sudis hyalina* Rafinesque, 1810 (F. Paralepididae). The main distinctive characters are (1) a compressed head, the snout is about 3 times the eye width and more than half the head length with long and strong jaws armed by large teeth, the tip of the lower jaw is distinctly curved upward, (2) a long pectoral, about as long as the head and (3) presence of adipose fin. The features of the head allowed for an unequivocal identificatio

It is an atlanto - mediterranean deep water species, mainly pelagic but descends near muddy substrate at depths of 300 — 1500 m. Sizes range between 25 to 40 cm with a maximum of 100 cm. (Golani *et al*., 2006).

The species seems to be observed before in 2005 when a specimen was captured in the northern zone of Tunisia during a bottom trawling to fish deep-sea crustaceans (Chalghaf, personnel co).

The observation hasn't been documented. The longfin barracudina *Sudis hyalina* belonging to family Paralepididae was not recorded in the Tunisian coasts following the last assessment of fish fauna (Bradai et al., 2004) and the new literature on the matter. This Atlanto-Mediterranean species is in fact rare in the Mediterranean Sea and occurs mainly in the Northern part of the Mediterranean basin, the Adriatic and in the Levantine area (Golani *et al*., 2006; Garibaldi *et al*., 2012; Ali *et al*., 2014; Papaconstantinou, 2014 ; Farrag, 2016 ; Turker *et al*., 2017 ; Ayas *et al*., 2019 and Aga Spyridopoulou *et al*., 2020). The map below (Figure 3) shows the distribution of the documented records compiled by Aga Spyridopoulou *et al*., (2020) to which we add the new record in the North of Tunisia and observations recorded in Eastern Ionian Sea (Mytilineou *et al*., 2013) and off the port of Susa (North Eastern Libya) (Tsagarakis *et al*., 2021).

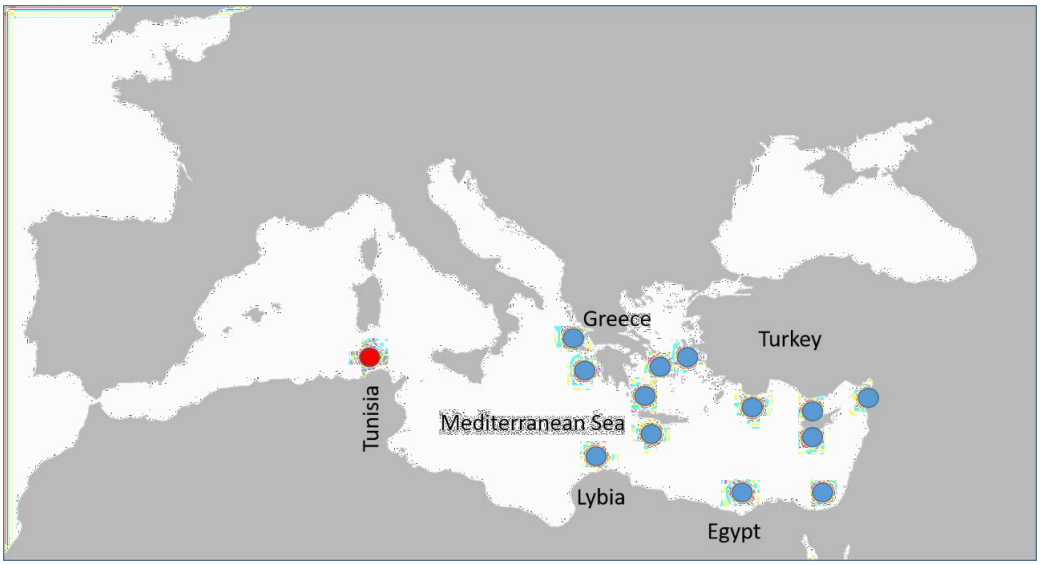

Figure 3: Occurrence of *Sudis hyalina* in the Mediterranean Sea.
(Modified following Naasan Aga Spyridopoulou *et al*., 2020)

4. Discussion

Up to date, *S. hyalina* has not been listed among the marine ichthyofauna of Tunisia. Its first finding herein fills a gap on the geographical distribution of the species in the Mediterranean and mainly in the southwestern Mediterranean.

The observed specimen is juvenile since the species reaches sexual maturity at 40 cm (Golani *et al*., 2006).

Documented sightings that have been recorded in the Mediterranean Sea (n= 43) show that captures occurred mainly in summer (28) and autumn (13) and only two in spring (Garibaldi *et al*., 2012; Mytilineou, 2013; Turker *et al*., 2017; Ayas *et al*., 2018; Naasan Aga Spyridopoulou *et al*., 2020; Tsagarakis *et al*., 2021 and present work). These catches are probably related to the high activities of longlines in summer-autumn which are the main gear involved in these captures.

Acknowledgements

The author wish to thank Ayman Duihech, mechanician on board of a trawler and best contributor in TunSea for informing on this observation and for his cooperation. The author also acknowledges anonymous referees for providing useful suggestions that significantly improved the manuscript.

References

1. Ali M., Saad A., Reynaud C. & Caparé C. (2014). First records of barracudina *Sudis hyalina* (Osteichthyes: Paralepididae) off the Syrian coast (eastern Mediterranean). *Journal of Ichthyology*. 54, 786-789. https://doi.org/10.1134/S0032945214100026
2. Ayas D., Çiftçi N., Doğangün M. & Bakan M. (2019). Occurrence of *Sudis hyaline* Rafinesque, 1810 (Paralepididae) in Büyükeceli Coast (Mersin Bay, Northeastern Mediterranean). *Marine Science and Technology Bulletin*, 8(1), 10-12. https://doi.org/10.33714/masteb.495110
3. Bradai M.N., Quignard J.P., Bouaïn A., Jarbouï O., Ouannes–Ghorbel A., Ben Abdallah L., Zaouali J. & Ben Salem S. (2004). Ichtyofaune autochtone et exotique des côtes tunisiennes : recensement et biogéographie. *Cybium*, 28(4), 315-328.
4. Danovaro R., Company J.B., Corinaldesi C., D'Onghia G., Galil B., Gambi C., Gooday A.J., Lampadariou N., Luna G.M., Morigi C., (…) (2010). Deep-sea biodiversity in the Mediterranean Sea: The known, the unknown, and the unknowable. *PLoS ONE*, 5 (8), e11832. https://doi.org/10.1371/journal.pone.0011832
5. Farrag M.M.S. (2016). Deep-sea ichthyofauna from Eastern Mediterranean Sea, Egypt: Update and new records. *Egyptian Journal of Aquatic Resources*. 2016, 42 (4), 479-489. https://doi.org/10.1016/j.ejar.2016.12.005
6. Fortibuoni T., Idighieri F., Giovanardi O., Pranovi F. & Zucchetta M. (2015). Climate impact on Italian fisheries (Mediterranean Sea). *Regional Environmental Change*. 15, 931-937. https://doi.org/10.1007/s10113-015-0781-6
7. Garibaldi F., Merotto L., Lanteri L. & Orsi Relini L. (2012). Notes about *sudis hyalina* rafinesque, 1810 (osteichthyes, Paralepididae) in the Ligurian Sea. *Biologia Marina Mediterranea*. 19 (1), 210-211.
8. Golani D., Ozturk B. & Basusta N. (2006). The fishes of the Eastern Mediterranean. Turkish Marine *Research Foundation, Istanbul, Turkey*: 259 pp.
9. Mytilineou C., Anastasopoulou A., Christides G., Bekas P., Smith C.J.,

Papadopoulou K.N., Lefkaditou E.& Kavadas S. (2013). New records of rare deep-water fish species in the Eastern Ionian Sea (Mediterranean Sea). *Journal of Natural History*, 47 (25-28), 1645-1662. https://doi.org/10.1080/00222933.2013.775372

10. Naasan Aga Spyridopoulou R., Langeneck J., Bouziotis D., Giovos I., Kleitou P. & Kalogirou S. (2020). Filling the Gap of Data-Limited Fish Species in the Eastern Mediterranean Sea: A Contribution by Citizen Science. *Journal of Marine Science and Engineering*, 8(2), 107. https://doi.org/10.3390/jmse8020107
11. Papaconstantinou C. (2014). Fauna Graeciae. An Updated Checklist of the Fishes in the Hellenic Seas; (Monographs on Marine Sciences, 7). HCMR: Athens, Greece, 2014; p. 340. https://doi.org/10.5281/zenodo.20996
12. Tsagarakis K., Darmanin S.A., Al Mabruk S., Auriemma R., Azzurro E., Badouvas N., Bakiu R., Bariche M., Battaglia P., Betti F., (…) (2021). New records of rare species in the Mediterranean Sea. *Mediterranean Marine Science*, 22(3), 627-652. https://doi.org/10.12681/mms.26669
13. Türker D.; Kara A.; Bal H. & Tünay Ö.K. (2017). Occurrence of rare deep- water fish *Sudis hyalina* Rafinesque, 1810 (Paralepididae) in Gökova Bay, Aegean Sea of Turkey. 2017. *Journal of Applied Ichthyology*, 33(3), 535-538. https://doi.org/10.1111/jai.13332