International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

First Record of Diodon Hystrix Actinopterygii: Tetraodontiformes: Diodontidae in Libyan Waters

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Abstract
This study presents the first confirmed record of Diodon hystrix (long-spined porcupinefish) along the Libyan coastline. A single specimen was collected in May 2025 from the coastal waters of Janzour, Tripoli, at an approximate depth of 8 meters, using a traditional hand spear. The specimen measured 42 cm in total length and had an estimated weight of 3 kg. Species identification was conducted based on morphological characteristics and verified through comparison with existing taxonomic descriptions. This finding extends the known distribution range of D. hystrix within the Mediterranean Sea and underscores the importance of ongoing monitoring of non-native and previously unrecorded marine species in Libyan waters.

Keywords: Diodon hystrix,first record , Mediterranean Sea, Libya

INTRODUCTION

Diodon hystrix, commonly known as the spot-fin porcupinefish, is a marine species recognized for its distinctive spines and spotted appearance. While it is widely distributed in tropical and subtropical waters, new records of its presence in previously undocumented regions are of significant interest for biodiversity monitoring and biogeographical studies

Diodon hystrix was first documented in the Mediterranean Sea from the Gulf of Taranto, Italy [1], with a subsequent record reported fifty-five years later from the Balearic Islands in the western Mediterranean [2]. Two years after that, the species was recorded from the Akrotiri Peninsula, southern Cyprus [3]. The most recent specimen was captured during a spearfishing competition, underscoring the growing significance of citizen science and digital communication in supporting marine biodiversity monitoring. The spread of exotic species like D. hystrix in the Mediterranean underscores the importance of ongoing surveillance and collaboration between recreational fishers and scientists[2]

Diodon hystrix is distributed circumtropically, meaning it is found in tropical waters around the world, including the Atlantic, Indo-Pacific, and eastern Pacific regions [4]. Recent studies have documented new occurrences, such as the first confirmed record in the Hooghly-Matlah estuary of West Bengal, India, which expands its known habitat from strictly marine to estuarine environments with moderate salinity [5]. The species has also been recorded in the Mediterranean Sea and along the Mozambican coast [6, 7] In this paper, we report a new capture of the spot fin porcupinefish, D. hystrix, in the Mediterranean Sea.

Materials and Methods

The specimen was collected in May 2025 off the coast of Janzour, Tripoli (32°49'N, 13°00'E), at an approximate depth of 8 meters. It was captured using a traditional local hand spear known as a "bendaga." Morphometric data were recorded, including total length (TL), standard length (SL), and estimated weight (W). A video documenting the capture was shared with one of the authors(A.F) for verification purposes.

Results and Discussion

The specimen measured 42 cm in total length and weighed approximately 3 kg. It exhibited the typical features of D. hysterix, including a robust, inflated body covered with long,-two-rooted spines. The spines are flat when the body is no inflated. mottled gray coloration with irregular dark spots. Based on these characteristics, the specimen was confidently identified as Diodon hysterix

Diodon hystrix belong to the family of Diodontidae Bonaparte 1835 that consists 18 species in seven genera. Only two species occur in the Mediterranean, the other co-familial, the Lessepsian migrant, Cyclichthys spilostylus (Leis and Randall, 1982) is differ from D. hysterix having three rooted and four rooted stout spines fixed in erected position and yellow spots surrounded by black ring at the bases of the spines.The occurrence of Diodon hysterix off the Libyan coast represents a noteworthy extension of its known range in the Mediterranean Sea. Its presence in the western part of Libya suggests either a natural westward expansion from previously recorded sites in the eastern Mediterranean or possible entry via the Suez Canal. The absence of prior records in Libya underlines the importance of documenting new species occurrences, particularly in the context of environmental change and biogeographic shifts.

Figure 1: Diodon hystrix collected from the coast of Libya.

Acknowledgements

Special thanks and appreciation to Mr. Abdel Salam Bousifi and Mr. Mohamed Al-Barbar for their kind communication with us and for providing all the valuable information.

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