

Review

An Update to the Critical Checklist of the Marine Fishes of Malta and Surrounding Waters

Joseph A. Borg ^{1,*},[†] , David Dandria ^{1,†}, Julian Evans ^{1,†} , Leyla Knittweis ^{1,2,†}  and Patrick J. Schembri ^{1,†} 

¹ Department of Biology, Faculty of Science, University of Malta, MSD 2080 Msida, Malta; davdand@gmail.com (D.D.); julian.evans@um.edu.mt (J.E.); leyla.knittweis@um.edu.mt (L.K.); patrick.j.schembri@um.edu.mt (P.J.S.)

² Fisheries New Zealand, Ministry for Primary Industries, Wellington 6011, New Zealand

* Correspondence: joseph.a.borg@um.edu.mt

[†] These authors contributed equally to this work.

Abstract

The critical checklist of the marine fishes of Malta and surrounding waters published by the present authors in 2023 provided the first evidence-based assessment of the marine ichthyofauna of the Maltese Islands. Since then, new faunistic, fisheries-related, and molecular data have become available, justifying an update. The present work critically reviews the scientific and selected popular literature published up to April 2026, applying the same study area and authentication criteria adopted in the 2023 checklist. The update affects 22 species: six are newly reported from Maltese waters, of which two still require confirmation; nine species previously treated as unconfirmed and three species originally excluded are here confirmed; two species formerly known only from historical records are also confirmed; and two species are excluded on the basis of revised taxonomic or biogeographical knowledge. Consequently, the number of confirmed species increases from 412 to 426, the number of unconfirmed species decreases from 53 to 45, and the number of excluded species decreases from 78 to 77. Within the confirmed fauna, native species increase from 370 to 379, non-established alien species from 17 to 19, and non-established Atlantic immigrants from 3 to 6, whereas the numbers of established aliens, established Atlantic immigrants, and cryptogenic species remain unchanged. The changes documented here reflect improved sampling, especially of deep-water species, the resolution of taxonomic uncertainty through molecular analyses, and the continued arrival of newcomer species. This updated checklist provides a more accurate and current baseline for future faunistic, biogeographical, ecological, conservation, and fisheries-related studies on the marine fishes of Maltese waters.

Keywords: Actinopteri; Chondrichthyes; Elasmobranchii; Osteichthyes; Petromyzonti; alien species; faunistics; marine ichthyofauna; new records



Academic Editor: Bert W. Hoeksema

Received: 1 May 2026

Revised: 5 June 2026

Accepted: 6 June 2026

Published: 11 June 2026

Copyright: © 2026 by the authors.

Licensee MDPI, Basel, Switzerland.

This article is an open access article distributed under the terms and conditions of the [Creative Commons Attribution \(CC BY\)](https://creativecommons.org/licenses/by/4.0/) license.

1. Introduction

Fish are arguably the best-known components of marine biota, being conspicuous, mobile animals familiar to sea-users, coastal dwellers, and casual visitors, and in many cases, of considerable economic significance. Nonetheless, knowledge of the fish present in Maltese waters remains incomplete and uneven. This notwithstanding their historical importance to the island's food supply, the small size of the archipelago, the proximity of the coast to virtually every point within it, and the regular contact of the general population with the sea.

The literature on Maltese fishes has historically been dominated by popular and semi-popular accounts, frequently focusing on larger coastal, epipelagic, or commercially important species, while cryptic and deep-water species have received considerably less attention. The critical checklist of Borg et al. (2023) [1] provided the first comprehensive evaluation of the marine fish fauna of Malta and the surrounding waters, distinguishing authenticated records from those that were doubtful, unconfirmed, or erroneous. In doing so, it established a robust baseline for subsequent work on the Maltese ichthyofauna. That checklist represented the state of knowledge available at the time of its publication, and it was explicitly acknowledged that additional records, taxonomic revisions, and new evidence would necessitate further updating.

Since the publication of the checklist by Borg et al. in 2023 [1], a considerable body of new information has become available. This includes published faunistic studies, fisheries-related surveys, especially the Mediterranean International Trawl Survey (MEDITS; an annual bottom trawl survey aimed at assessing the biological status of demersal fish stocks across the Mediterranean Sea and the Black Sea [2]), and molecular analyses of specimens from Maltese waters. These data have led to the confirmation of a number of species previously treated as unconfirmed, to the addition of species not included in the 2023 checklist, and to the exclusion of certain species whose prior acceptance is no longer supported by current taxonomic understanding. Recent records also include species from poorly documented habitats as well as species authenticated through genetic methods, underscoring both the continuing incompleteness of the Maltese checklist and the value of improved ecological studies and analytical approaches in resolving doubtful records. New arrivals have also been documented in Maltese waters, including Lessepsian immigrants originating from the Red Sea or through expansion of their Mediterranean distributional range and newcomers from the Atlantic. In compiling this review, we are deliberately being inclusive rather than exclusive since we are providing an update to the original checklist by including all species that were reported in the scientific and quasi-scientific literature since its publication. The present paper, therefore, updates the critical 2023 checklist of the marine fishes of Malta and surrounding waters [1], applying the same general rationale and criteria of evaluation. It incorporates newly available evidence to amend the status of previously listed species, to document additions to the confirmed ichthyofauna, and to identify species that remain unconfirmed or that should now be excluded. The aim is to provide a revised and current account of the marine fishes of Maltese waters and to maintain the checklist as a reliable baseline for future faunistic, biogeographical, ecological, conservation, and fisheries studies.

2. Materials and Methods

The basis of the present work is the 2023 critical checklist of the marine fishes of Malta [1], which had categorised species into three main lists: (a) Species confirmed as occurring in Maltese waters; (b) Species recorded from Maltese waters whose presence requires confirmation; (c) Species to be excluded from the checklist of Maltese fish fauna. This checklist was updated by critically reviewing the scientific and popular literature published by April 2026 in order to: (a) add new records of species that were not previously included; (b) amend previous entries to account for newly confirmed occurrences; and (c) revise entries based on taxonomic updates. The same study area, namely Geographic Sub-Area 15 (GSA 15) as established by the General Fisheries Commission for the Mediterranean (GFCM), was taken to represent Maltese waters. The characteristics of the study area and a historical overview of previous work on Maltese ichthyofauna were given in Borg et al. (2023) [1] and will not be repeated here.

In the present work, species were added to the ‘confirmed’ list if their records were based on actual specimens and authenticated in the scientific literature, while new records

that were not based on actual specimens or only reported in the popular literature were treated as ‘unconfirmed’. In line with the review by Borg et al. (2023) [1], species considered to be newcomers (i.e., alien, Atlantic immigrant, or cryptogenic) were labelled accordingly, together with an indication of their current establishment status (established or non-established). The zoogeographic categories (native, alien, Atlantic immigrant, cryptogenic; established/non-established) follow the definitions and criteria adopted in Borg et al. (2023) [1], to which the reader is referred.

The literature search followed the scope and authentication criteria adopted by Borg et al. (2023) [1] but was extended to cover publications and records available up to April 2026. Searches were carried out in major academic databases and indexing services, including Web of Science, Scopus, Google Scholar, ResearchGate, and relevant publisher platforms, using combinations of the terms “fish”, “fishes”, “Actinopteri”, “Chondrichthyes”, “Elasmobranchii”, “Osteichthyes”, “Petromyzonti”, “Malta”, “Maltese”, “GSA 15”, “first record”, “new record”, “confirmed record”, and variants thereof. The reference lists of relevant papers were screened for additional sources. Selected grey and popular literature sources were also searched, particularly where they might contain records not yet treated in the scientific literature. Records were accepted as confirmed when they were published in peer-reviewed literature and based on morphological and/or genetic identification of specimens collected in Maltese waters. Records reported only in non-peer-reviewed sources, or not supported by specimen-based identification, including records based solely on environmental DNA, were not accepted as confirmed but were retained as unconfirmed where appropriate. Cases requiring caution are identified and discussed in the relevant species notes.

3. Results

The present work updates the checklist of fishes within Maltese waters with respect to 22 species, by adding six new records (of which two need further confirmation), confirming the presence of nine species that were previously treated as unconfirmed and three species which had been excluded, confirming two which were originally only known from historical records, and excluding two which were previously treated as unconfirmed.

3.1. Class Petromyzonti

Order Petromyzontiformes

Family Petromyzontidae

Petromyzon marinus Linnaeus, 1758

Although this species had been recorded historically [3], there were no recent records by the time the previous inventory was compiled [1]. Newly recorded based on a beached specimen at Fomm ir-Rih [4].

3.2. Class Elasmobranchii

3.2.1. Order Carcharhiniformes

Family Carcharhinidae

Carcharhinus altimus (Springer, 1950): Non-established Atlantic immigrant

Although this species had been recorded previously [5,6], it was considered that such records required further confirmation [1]. The occurrence of this species was confirmed through genetic analysis of a dead specimen caught by Maltese fishers, which was landed at the Malta fish market between 2003 and 2016 [7].

Carcharhinus plumbeus (Nardo, 1927)

Although this species had been recorded previously [3], it was considered that such records required further confirmation [1]. The occurrence of this species was confirmed

through genetic analysis of a dead specimen caught by Maltese fishers, which was landed at the Malta fish market between 2003 and 2016 [7].

3.2.2. Order Myliobatiformes

Family Dasyatidae

Dasyatis tortonesei Capape, 1975

Although this species had been recorded previously [8,9], such records were considered to require further confirmation [1]. The occurrence of this species was confirmed through genetic analysis of specimens caught by Maltese fishers between 2012 and 2017 [7,10,11].

3.2.3. Order Rhinopristiformes

Family Rhinobatidae

Rhinobatos rhinobatos (Linnaeus, 1758)

Although this species had been recorded historically [12,13], there were no recent records by the time the previous inventory checklist was compiled [1]. Lanfranco (1993) [3] lists this species as *R. rhinobatos* and cites Gulia (1871–1877), who refers to the species as *R. columnae*, which, according to the World Register of Marine Species (WoRMS) [14], is a synonym of *R. rhinobatos*. The occurrence of this species has been recently confirmed based on a specimen brought to the Malta fish market in May 2015 [15]. The actual provenance of the specimen is not known, but Matthews within Toma et al. (2025) [15] indicate that while the exact capture location and method could not be verified, the majority of the professional Maltese fishing fleet consists of small artisanal vessels which typically operate in or near coastal areas [16], supporting the likelihood that the specimen was caught within Maltese waters.

3.2.4. Order Squaliformes

Family Centrophoridae

Centrophorus granulosus (Bloch & Schneider, 1801)

Centrophorus uyato (Rafinesque, 1910)

Both *Centrophorus granulosus* and *Centrophorus uyato* (Rafinesque, 1910) were previously recorded as occurring in Maltese waters [1]. However, it has now been established that only one species of *Centrophorus*, namely *C. uyato*, occurs in the Mediterranean [7,17,18], which means that *C. granulosus* should be removed from the Maltese list.

3.3. Class Teleostei

3.3.1. Order Acanthuriformes

Family Siganidae

Siganus rivulatus Forsskål & Niebuhr, 1775: Non-established alien

Although this species had been recorded previously [3], such records were considered to require further confirmation [1]. The occurrence of the species has now been confirmed based on genetic analysis of a specimen from Delimara [19].

3.3.2. Order Alepocephaliformes

Family Alepocephalidae

Alepocephalus rostratus Risso, 1820

Although this species had been recorded previously [20], such records were considered to require further confirmation [1]. The occurrence of the species has now been confirmed based on a single specimen collected in 2018 during routine onboard observations of otter-board trawling activities northeast of Malta [21].

3.3.3. Order Anguilliformes

Family Nemichthyidae

Nemichthys scolopaceus Richardson, 1848

Although this species had been recorded previously [20], such records were considered to require further confirmation [1]. The occurrence of the species has now been confirmed based on a single specimen collected in June 2022 during on-board observations of trawling activities [21]. It is further corroborated by the contribution of Vella and Vella within Zenetos et al. (2026) [22], who examined two specimens collected by Maltese fishers from the central Mediterranean and carried out DNA barcoding on the fish.

3.3.4. Order Aulopiformes

Family Synodontidae

Synodus synodus (Linnaeus, 1758): Non-established Atlantic immigrant

A new record for Maltese waters based on two specimens caught at Wied iz-Zurrieq and another photographed at Cirkewwa [23]. The Wied iz-Zurrieq record was validated by morphological and genetic analysis, and detailed photographs of the two Wied iz-Zurrieq specimens, as well as an underwater photograph of the live specimen at Cirkewwa, were included.

3.3.5. Order Carangaria (Incertae Sedis)

Family Sphyraenidae

Sphyraena sphyraena (Linnaeus, 1758)

Although this species had been recorded previously, such records were considered doubtful, requiring further confirmation [1]. The occurrence of this species has now been confirmed based on 11 specimens collected in September and October 2023 through purse seine fishing in Maltese waters [24].

3.3.6. Order Carangiformes

Family Carangidae

Elagatis bipinnulata (Quoy & Gaimard, 1825): Non-established Atlantic immigrant

Elagatis bipinnulata has been known as a vagrant in the Mediterranean for a very long time [25], and reports concerning the sighting of this species in Maltese waters have appeared in the press [26,27]. The latter included a video recording of the fish swimming in an unnamed locality off Gozo, which was aired on local television. These records have not yet been ratified in the scientific literature and therefore still require confirmation.

3.3.7. Order Eupercaria (Incertae Sedis)

Family Sparidae

Dentex maroccanus Valenciennes, 1830

Although this species had been recorded previously [20], it was considered that such records required further confirmation [1]. The occurrence of the species has now been confirmed based on 22 specimens collected in July 2023 during a MEDITS survey [24].

3.3.8. Order Gobiiformes

Family Gobiidae

Gobius bucchichi Steindachner, 1870

Although this species had been recorded previously [3], it was considered that such records required further confirmation [1]. It should now be excluded from the Maltese fish fauna unless new authenticated records are reported, since it has been shown that *Gobius bucchichi* was “recorded only in the eastern half of the Mediterranean Sea, from the Adriatic to the Aegean Sea, and in the Black Sea and Sea of Marmara” [28].

Pomatoschistus nanus Engin & Seyhan, 2017

A new record for Maltese waters based on male and female specimens from Mistra collected in June and July 2022, respectively [29]. The record was validated by genetic analysis; an underwater photograph of a living specimen was included.

3.3.9. Order Myctophiformes

Family Myctophidae

Ceratoscopelus maderensis (Lowe, 1839)

Although this species had been recorded previously in neighbouring GSAs [9], it was considered that its occurrence in Maltese waters required further confirmation [1]. The occurrence of this species has now been confirmed based on 54 specimens collected in September 2022 during a MEDITS survey in Maltese waters [21].

Hygophum hygomii (Lütken, 1892)

Although this species had been recorded previously in neighbouring GSAs [9], it was considered that its occurrence in Maltese waters required further confirmation [1]. The occurrence of this species has now been confirmed based on two specimens collected in September 2022 during the same MEDITS survey as the previous species [21].

3.3.10. Order Perciformes

Family Cyclopteridae

Cyclopterus lumpus Linnaeus, 1758: Non-established Atlantic immigrant

The environmental DNA (eDNA) of this species was detected in the waters of Marsamxett Harbour in Malta; however, given the uncertainty associated with this method of detection, the presence of this species in Maltese waters still needs to be confirmed through an actual specimen. The authors who recorded this species through eDNA themselves suggest that the presence of eDNA attributable to this species does not automatically imply that individuals of this species were present within the sampled area [30]. For these reasons, the record of *C. lumpus* is here treated as unconfirmed. Should it be confirmed, it would represent the first record of the Family Cyclopteridae in Maltese waters.

3.3.11. Order Scombriformes

Family Centrolophidae

Schedophilus medusophagus (Cocco, 1839)

This species was reported by Jennings [20] and Mifsud [31] but not backed by any evidence of occurrence in Maltese waters; Lanfranco [3] indicated that all local records were probably misidentifications of *Schedophilus ovalis*. The occurrence of the species has now been confirmed based on a specimen from Pieta [4].

Family Scombridae

Acanthocybium solandri (Cuvier, 1832): Non-established Atlantic immigrant

Although this species had been recorded in Malta in FishBase based on Collette and Nauen (1983) [32], it was considered that the occurrence in Maltese waters required further confirmation [1]. Two immature male specimens were caught in October and November 2024 in waters southwest of Malta [33]; the record was validated by morphological and genetic analysis.

3.3.12. Order Stomiiformes

Family Gonostomatidae

Gonostoma sp. [as *Gonostoma atlanticum* Norman, 1930].

A new record for Maltese waters based on a single specimen collected in September 2022 during a MEDITS survey in Maltese waters [21]. *Gonostoma atlanticum* was originally described as a subspecies of *G. denudatum* Rafinesque, 1810: *G. denudatum atlanticum* Norman, 1930. It was subsequently considered a species in its own right by many authors, and specific status was confirmed genetically by Miya & Nishida [34]. *G. denudatum*

occurs in both the Mediterranean and the Eastern Atlantic [35] while *G. atlanticum* has a widespread distribution, including the Atlantic, but is not currently known from the Mediterranean [36]. The Maltese record is therefore almost certainly an error due to the nomenclatural confusion, and likely refers to *G. denudatum*, especially since the description in the Pisani et al. paper [21] fits this species and given the size of the individual caught (16.2 cm total length), noting that *G. atlanticum* is less than 7 cm in Standard Length [35,36]. Until the specimen is re-examined, this fish is therefore best referred to as *Gonostoma* sp. and *G. atlanticum* is transferred to the list of unconfirmed species. Nonetheless, this is the first confirmed Maltese record of the Family Gonostomatidae.

3.3.13. Order Tetraodontiformes

Family Tetraodontidae

Lagocephalus guentheri Miranda Ribeiro, 1915: Non-established alien

A new record for Maltese waters based on a single specimen caught by a local fisher at Birzebbugia [37]. The record was validated by morphological and genetic analysis.

A summary of the updates to the checklist by Borg et al. (2023) [1] outlined above is given in Table 1.

Table 1. Alphabetical list of additions and amendments to the checklist of the marine fishes of Malta and surrounding waters.

Species	Previous Status [1]	Current Status	Ref.	GPS ¹
<i>Acanthocybium solandri</i>	Excluded	Present	[33]	35.25 N, 13.58 E
<i>Alepocephalus rostratus</i>	Unconfirmed	Confirmed	[21]	36.28 N, 14.02 E
<i>Carcharhinus altimus</i>	Unconfirmed	Confirmed	[7]	unknown
<i>Carcharhinus plumbeus</i>	Unconfirmed	Confirmed	[7]	unknown
<i>Centrophorus granulosus</i>	Confirmed	Excluded	[7,17,18]	
<i>Ceratoscopelus maderensis</i>	Unconfirmed	Confirmed	[21]	36.19 N, 13.48 E
<i>Cyclopterus lumpus</i>	Not recorded	Unconfirmed	[30]	unknown
<i>Dasyatis tortonesei</i>	Unconfirmed	Confirmed	[7,10,11]	35.45 N, 14.27 E
<i>Dentex maroccanus</i>	Unconfirmed	Confirmed	[24]	35.56 N, 15.59 E
<i>Elagatis bipinnulata</i>	Not recorded	Unconfirmed	[26,27]	unknown
<i>Gobius bucchichi</i>	Unconfirmed	Excluded	[28]	
<i>Gonostoma</i> sp.	Not recorded	Present ²	[21]	35.13 N, 14.14 E
<i>Hygophum hygomii</i>	Unconfirmed	Confirmed	[21]	35.13 N, 14.14 E; 36.28 N, 14.21 E
<i>Lagocephalus guentheri</i>	Not recorded	Present	[37]	35.82 N, 14.53 E
<i>Nemichthys scolopaceus</i>	Unconfirmed	Confirmed	[21,22]	36.27 N, 14.01 E
<i>Petromyzon marinus</i>	Historical only	Confirmed	[4]	35.54 N, 14.20 E
<i>Pomatoschistus nanus</i>	Not recorded	Present	[29]	35.95 N, 14.39 E
<i>Rhinobatos rhinobatos</i>	Historical only	Confirmed	[15]	na
<i>Schedophilus medusophagus</i>	Excluded	Present	[4]	35.53 N, 14.29 E
<i>Siganus rivulatus</i>	Excluded	Present	[19]	35.822 N, 14.565 E
<i>Sphyrnaena sphyrnaena</i>	Unconfirmed	Confirmed	[24]	35.50 N, 14.35 E; 35.53 N, 14.45 E
<i>Synodus synodus</i>	Not recorded	Present	[23]	35.81 N, 14.45 E

¹ Refers to the locality where the species was first recorded, as stated in the relevant reference. ² Recorded as *Gonostoma atlanticum* [21], most probably in error. Species identity to be confirmed by re-examination of the specimen.

4. Discussion

In the short interval since the publication of Borg et al. (2023) [1], the number of confirmed species recorded from Maltese waters has increased from 412 to 426, the number of unconfirmed species has decreased from 53 to 45, and the number of excluded species has decreased from 78 to 77. These changes are not merely incremental. They reflect the addition of newly documented species, the authentication of records that were previously doubtful, and the correction of errors arising from taxonomic revision or earlier misidentifications. Taken together, they further consolidate the checklist as a critical baseline for Maltese marine ichthyology, while also showing that the ichthyofauna of the islands remains incompletely documented.

A substantial proportion of the changes concern species that had already been suspected to occur in Maltese waters, but for which previous evidence was inadequate. Several species previously treated as unconfirmed are now supported by authenticated specimens, detailed photographic evidence, or molecular analyses. This is particularly important for species whose identification is complicated by morphological similarity to congeners or by unresolved taxonomic history, as in some elasmobranchs and small benthic fishes. The utility of molecular methods is especially evident in this context: genetic analyses have helped confirm the occurrence of species such as *Carcharhinus altimus*, *C. plumbeus*, *Dasyatis tortonesei*, *Siganus rivulatus* and *Pomatoschistus nanus*, while also contributing to the resolution of taxonomic problems, such as the exclusion of *Centrophorus granulosus*. More generally, the present update reinforces the value of combining specimen-based faunistics with molecular identification tools, which have become increasingly important in fish systematics and biodiversity assessment [38].

A second reason why some fish are only now being recorded is that several belong to ecological components of the fauna that have historically been undersampled, especially deep-water and offshore assemblages. Deep-sea species (such as *Centrophorus uyato*, *Alepocephalus rostratus*, *Nemichthys scolopaceus*, *Ceratoscopelus maderensis*, *Hygophum hygomii* and the gonostomatid reported here as *Gonostoma* sp.) are unlikely to be detected through casual coastal observations and were therefore poorly represented in the older popular literature on Maltese fishes. Their recent documentation reflects the importance of structured sampling programmes, including MEDITS and on-board fisheries observations, in revealing components of the fauna that would otherwise remain overlooked. This suggests that further additions to the Maltese checklist may still be expected among deep-sea, mesopelagic, and otherwise inconspicuous species.

Three species (*Carcharhinus altimus*, *C. plumbeus* and *Rhinobatos rhinobatos*) were recorded from specimens landed at the Malta fish market. The market—formerly housed in the historic Valletta building (the Pixkerija) and relocated to a purpose-built facility in Marsa in 2015—operates continuously, with vessels landing their catch at all hours and a daily auction held in the early morning, where landings are weighed, labelled, and inspected.

Two provisional records documented here are of particular significance, as each may represent the first occurrence of a family not previously recorded from Maltese waters. A specimen collected during MEDITS in 2022, here referred to as *Gonostoma* sp., represents the first confirmed Maltese record of the Gonostomatidae, while eDNA detection of *Cyclopterus lumpus* in Marsamxett Harbour raises the possibility of a first record of the Cyclopteridae. Such records illustrate the degree to which the family-level composition of the Maltese ichthyofauna may still be incompletely known. However, the exact identity of the *Gonostoma* sp. requires confirmation (see Section 3), whereas eDNA alone is not sufficiently reliable to definitively confirm species present; hence, the presence of *C. lumpus* in Maltese waters is here regarded as unconfirmed.

Some of the new or newly confirmed records, however, are more plausibly interpreted as reflecting ongoing faunal change rather than previous oversight alone. Within the confirmed list, native species increased from 370 to 379, non-established aliens from 17 to 19, and non-established Atlantic immigrants from 3 to 6, whereas the numbers of established aliens, established Atlantic immigrants, and cryptogenic species remained unchanged. Thus, most of the increase in the confirmed fauna still concerns native species that were previously overlooked, confused, or insufficiently documented. At the same time, the rise in non-established alien and Atlantic immigrant species points to continuing faunal exchange due to the arrival of newcomers in Maltese waters. Even when represented by a single or only a few records, such species are biogeographically informative because they may constitute early evidence of range expansion, vagrancy, or incipient colonisation, and they therefore merit continued critical documentation and follow-up monitoring [39].

The present update also underscores the continued relevance of historical records. The confirmation of species such as *Petromyzon marinus* and *Rhinobatos rhinobatos*, previously known only from historical or otherwise uncertain records, suggests that some fishes may occur in Maltese waters only rarely or sporadically and may therefore pass undetected for long periods. In such cases, the absence of recent records cannot be equated with true absence, but neither should old records be accepted uncritically. Their status depends on the quality of the supporting evidence. This same principle applies to excluded species. The amendments to the excluded list are, therefore, an equally important outcome of the present study. A critical checklist must not only record additions but also remove names that are no longer defensible. The exclusion of species such as *Centrophorus granulosus* and *Gobius bucchichi* illustrates how advances in taxonomy and improved understanding of Mediterranean distributions can invalidate earlier reports. Such corrections improve the reliability of the checklist and reduce the risk of perpetuating errors in later faunistic, ecological, or conservation work [40].

Periodical updating of faunal checklists is necessary if they are to be useful to researchers. In the case of the present work, no less than 22 species were considered, underlining the requirement of such an update. These include new records, confirmation of past records which required validation, and exclusion of previous records found to be erroneous.

5. Conclusions

Periodic updating of faunal checklists is necessary if they are to remain useful as evidence-based baselines for faunistic, biogeographic, ecological, conservation, and fisheries-related studies. The present update, which considers 22 species, confirms that the marine ichthyofauna of the Maltese Islands remains incompletely documented, with 45 species still awaiting confirmation. Three species treated here remain particularly unresolved: the identity of *Gonostoma* sp. depends on re-examination of the original specimen, *Cyclopterus lumpus*, currently recorded from eDNA alone, requires corroboration through specimen-based evidence, and *Elagatis bipinnulata* awaits ratification in the scientific literature. Future additions and clarifications are expected from continued structured sampling, including the annual MEDITS bottom-trawl survey in GSA 15, and surveys of pelagic species such as MEDIAS, as well as from fisheries landings and by-catch, on-board observations, validated photographic records, voucher specimens, tissue samples, and molecular analyses. Sustained critical assessment of such evidence will be essential for resolving unconfirmed records, detecting rare or previously overlooked species, and tracking the arrival and possible establishment of non-indigenous and range-expanding species in the central Mediterranean.

Author Contributions: Conceptualization, J.A.B., D.D., J.E., L.K., P.J.S.; methodology, J.A.B., D.D., J.E., L.K., P.J.S.; investigation, J.A.B., D.D., J.E., L.K., P.J.S.; data curation, D.D.; writing—original draft preparation, D.D. and P.J.S.; writing—review and editing, J.A.B., D.D., J.E., L.K., P.J.S. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Data Availability Statement: No new data were created or analyzed in this study. Data sharing is not applicable to this article.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Borg, J.A.; Dandria, D.; Evans, J.; Knittweis, L.; Schembri, P.J. A Critical Checklist of the Marine Fishes of Malta and Surrounding Waters. *Diversity* **2023**, *15*, 225. [CrossRef]
2. Bertrand, J.A.; Gil de Sola, L.; Papaconstantinou, C.; Relini, G.; Souplet, A. The general specifications of the MEDITS surveys. *Sci. Mar.* **2002**, *66*, 9–17. [CrossRef]
3. Lanfranco, G. *The Fishes Around Malta (Central Mediterranean)*; Progress Press: Valletta, Malta, 1993; 132p.
4. Deidun, A.; Zava, B.; Marrone, A.; Galdies, J.; Sciberras, A.; Corsini-Foka, M. The confirmed occurrence of *Schedophilus medusophagus* (Cocco, 1839) and *Petromyzon marinus* Linnaeus, 1758 in Maltese waters, central Mediterranean sea. *Ann. Ser. Hist. Nat.* **2023**, *33*, 213–220. [CrossRef]
5. FAO. *General Fisheries Commission for the Mediterranean Sea (GFCM; Mediterranean and Black Sea) Capture Production*; Fisheries and Aquaculture Division: Rome, Italy, 2021.
6. Scientific, Technical and Economic Committee for Fisheries (STECF) Expert Working Group 21-08. *Annual Economic Report on the EU Fishing Fleet II; Electronic Data Annex on EU Fleet Economic and Transversal Data*; STECF EWG 21-08; Publications Office of the European Union: Luxembourg, 2021.
7. Vella, A.; Vella, N.; Schembri, S. A molecular approach towards taxonomic identification of elasmobranch species from Maltese fisheries landings. *Mar. Genom.* **2017**, *36*, 17–23. [CrossRef] [PubMed]
8. MEDITS GSA 15 Data. Geographic Sub-Area 15 Dataset Provided by the Department of Fisheries and Aquaculture of the Government of Malta on 14 June 2018.
9. TM List. Mediterranean International Trawl Survey (MEDITS) Taxonomic List of the Mediterranean (Version April 2019). Available online: <https://www.sibm.it/MEDITS%202011/revision%20TM%202017.htm> (accessed on 1 June 2026).
10. Vella, A.; Schembri, A.; Vella, N. Genetic barcoding of elasmobranchs in Malta (Central Mediterranean). *CIESM Congr.* **2016**, *41*, 321.
11. Vella, N.; Vella, A. Characterization and comparison of the complete mitochondrial genomes of two stingrays, *Dasyatis pastinaca* and *Dasyatis tortonesei* (Myliobatiformes: Dasyatidae) from the Mediterranean Sea. *Mol. Biol. Rep.* **2021**, *48*, 219–226. [CrossRef]
12. Gulia, G. Fauna Maltese. *Plagiostomi. Il Barth* **1872**, *1*, 155–157.
13. Despott, G. *The Ichthyology of Malta*; Critien's Press: San Gwann, Malta, 1919.
14. WoRMS Editorial Board. World Register of Marine Species. VLIZ. 2026. Available online: <https://www.marinespecies.org> (accessed on 12 April 2026).
15. Toma, M.; Agius, D.; Azzurro, E.; Bo, M.; Crocetta, F.; Dal, I.; Delli Carri, T.; Deval, M.C.; Galli, L.; Gkoulia, A.; et al. New records of rarely reported species in the Mediterranean Sea. *Mediterr. Mar. Sci.* **2025**, *26*, 972–994. [CrossRef]
16. Department of Fisheries and Aquaculture. *Annual Report on Efforts to Achieve a Sustainable Balance Between Fishing Capacity and Fishing Opportunities for the Year 2022*; Ministry for Agriculture, Fisheries and Animal Rights, Government of Malta: Valletta, Malta, 2023.
17. Verissimo, A.; Cotton, C.F.; Buch, R.H.; Guallart, J.; Burgess, G.H. Species diversity of the deep-water gulper sharks (Squaliformes: Centrophoridae: *Centrophorus*) in North Atlantic waters—current status and taxonomic issues. *Zool. J. Linn. Soc.* **2014**, *172*, 803–830. [CrossRef]
18. White, W.T.; Guallart, J.; Ebert, D.A.; Naylor, G.J.; Verissimo, A.; Cotton, C.F.; Harris, M.; Serena, F.; Iglésias, S.P. Revision of the genus *Centrophorus* (Squaliformes: Centrophoridae): Part 3—Redescription of *Centrophorus uyato* (Rafinesque) with a discussion of its complicated nomenclatural history. *Zootaxa* **2022**, *5155*, 1–51. [CrossRef]
19. Vella, A.; Scicluna, Y.; Mifsud, C.M.; Monaco, C.; Peri, I.; Tibullo, D.; Tiralongo, F.; Vella, N. The first record of the marbled spinefoot, *Siganus rivulatus* Forsskal & Niebuhr, 1775 and further records of the dusky spinefoot, *Siganus luridus* (Rüppell, 1829) from Malta. *BioInvasions Rec.* **2023**, *12*, 417–426. [CrossRef]
20. Jennings, G. *Maltese Fishes—An Identification Guide*; Calypso: London, UK, 1996.

21. Pisani, L.; Agius, D.; Schembri, P.J. New and confirmed records of a deep-water decapod (family Acanthephyridae), and five deep-sea fishes (families Alepocephalidae, Gonostomatidae, Myctophidae, and Nemichthyidae) from Maltese waters. *MedFAR* **2025**, *8*, 128–140. [\[CrossRef\]](#)
22. Zenetos, A.; Abd El-Gwaad, F.N.; A-Beak, A.H.; Antit, M.; Baldacchino, Y.; Barría, C.; Četković, I.; Costa, M.; Crocetta, F.; Dorđević, N.; et al. New records of marine biodiversity in the Mediterranean Sea (April 2026). *Mediterr. Mar. Sci.* **2026**, *27*, 134–158. [\[CrossRef\]](#)
23. Deidun, A.; Corsini-Foka, M.; Zava, B.; Marrone, A.; Catalano, G.; Crobe, V.; Tinti, F. *Synodus synodus* (Actinopterygii, Aulopiformes, Synodontidae) in the coastal waters of Malta, central Mediterranean Sea. *Acta Ichthyol. Piscat.* **2025**, *55*, 403–411. [\[CrossRef\]](#)
24. Agius, D.; Pisani, L.; Schembri, P.J. Confirmation of the occurrence of three fish species in Maltese waters based on specimens collected through the EC's Data Collection Framework. *Mediterr. Fish. Aquac. Res.* **2025**, *8*, 1–10. [\[CrossRef\]](#)
25. Orso Relini, L. Non-native marine fish in Italian waters. In *Fish Invasions of the Mediterranean Sea: Change and Renewal*; Golani, D., Appelbaum-Golani, B., Eds.; Pensoft Publishers: Moscow, Russia, 2009; pp. 35–56.
26. Times of Malta (August 2024). Available online: <https://timesofmalta.com/article/rainbow-runner-fish-documented-maltese-waters-first-time.1097096> (accessed on 7 April 2026).
27. TVM Malta. Available online: <https://tvmnews.mt/en/news/watch-hawaiian-salmon-spotted-in-maltese-waters/> (accessed on 7 April 2026).
28. Kovačić, M.; Renoult, J.P.; Pillon, R.; Bilecenoglu, M.; Tiralongo, F.; Bogorodsky, S.V.; Engin, S.; Kovtun, O.; Louisy, P.; Patzner, R.A.; et al. The Delimitation of Geographic Distributions of *Gobius buccichi* and *Gobius incognitus* (Teleostei: Gobiidae). *J. Mar. Sci. Eng.* **2023**, *11*, 516. [\[CrossRef\]](#)
29. Kovačić, M.; Šanda, R.; Vukić, J.; Renoult, J.P.; Falzon, M.A. New records of the recently described *Pomatoschistus nanus* Engin & Seyhan, 2017 (Teleostei: Gobiidae). *Cybium* **2024**, *48*, 173–176. [\[CrossRef\]](#)
30. Vella, A.; Mifsud, C.M.; Vella, N. Environmental DNA (eDNA) for the Detection of Marine Vertebrate Diversity in Maltese Waters. *DNA* **2025**, *5*, 50. [\[CrossRef\]](#)
31. Mifsud, C. On the occurrence of *Schedophilus ovalis* (Cuvier, 1833) and *S. medusophagus* Cocco, 1839 (Perciformes, Centrolophidae) in Maltese waters. *Cent. Mediterr. Nat.* **2005**, *4*, 141.
32. Collette, B.; Nauen, C. FAO Species Catalogue. Vol. 2. Scombrids of the World. An Annotated and Illustrated Catalogue of Tunas, Mackerels, Bonitos and Related Species Known to Date. In *FAO Fisheries Synopsis No. 125*; FAO: Rome, Italy, 1983; Volume 2, 137p.
33. Deidun, A.; Corsini-Foka, M.; Marrone, A.; Insacco, G.; Schembri, J.P.; Sciberras, A.; Santoro, M.; Occhibove, F.; Di Natale, A.; Zava, B. *Acanthocybium solandri* (Actinopterygii, Scombriformes, Scombridae) first record from Malta with notes on using its parasites as biological tags. *Acta Ichthyol. Piscat.* **2025**, *55*, 11–17. [\[CrossRef\]](#)
34. Miya, M.; Nishida, M. Molecular Systematics of the Deep-Sea Fish Genus *Gonostoma* (Stomiiformes: Gonostomatidae): Two Paraphyletic Clades and Resurrection of *Sigmops*". *Copeia* **2000**, *2000*, 378–389. [\[CrossRef\]](#)
35. FishBase. *Gonostoma denudatum* Rafinesque, 1810. 2026. Available online: <https://www.fishbase.se/summary/1799> (accessed on 31 March 2026).
36. FishBase. *Gonostoma atlanticum* Norman, 1930. 2026. Available online: <https://fishbase.se/summary/5052> (accessed on 31 March 2026).
37. Deidun, A.; Corsini-Foka, M.; Marrone, A.; Galdies, J.; Zava, B.; Crobe, V.; Tinti, F. Yet another non-indigenous fish from Maltese waters, central Mediterranean: A first record of *Lagocephalus guentheri* Miranda Ribeiro, 1915 (Tetraodontiformes, Tetraodontidae). *Bioinvasions Rec.* **2024**, *13*, 777–786. [\[CrossRef\]](#)
38. Ward, R.D.; Zemlak, T.S.; Innes, B.H.; Last, P.R.; Hebert, P.D. DNA barcoding Australia's fish species. *Philos. Trans. R. Soc. B Biol. Sci.* **2005**, *360*, 1847–1857. [\[CrossRef\]](#) [\[PubMed\]](#)
39. Azzurro, E.; Smeraldo, S.; D'Amen, M. Spatio-temporal dynamics of exotic fish species in the Mediterranean Sea: Over a century of invasion reconstructed. *Glob. Change Biol.* **2022**, *28*, 6268–6279. [\[CrossRef\]](#) [\[PubMed\]](#)
40. Kovačić, M.; Lipej, L.; Dulčić, J.; Iglesias, S.P.; Goren, M. Evidence-based checklist of the Mediterranean Sea fishes. *Zootaxa* **2021**, *4998*, 1–115. [\[CrossRef\]](#) [\[PubMed\]](#)

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.