

Research Article

An updated checklist of marine and coastal fishes of Odisha, India

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Exploring diversity is a never-ending process where new species are discovered while others face extinction. Research on taxonomy is indispensable for the study of species diversity, distribution, richness, risk of extinction, and conservation management strategies. The coastline of India is rich in marine habitats that host diverse fish species, and the coastal waters of Odisha are known for its dynamic environment, unique habitat composition, and ongoing species discoveries. The current study identified 778 fish species in the marine and coastal waters of Odisha, which are grouped into 36 orders, 143 families, and 402 genera, through a thorough literature review. Categorisation of all the species listed in IUCN revealed 15 species are in the Critically Endangered group, 25 Endangered, 31 Vulnerable, 17 Near Threatened, 478 Least Concern, 80 Data Deficient, and 132 Not Evaluated. The checklist focuses on gathering information on marine fishes found in coastal and brackishwater environments of Odisha, prioritising taxonomic verification and adjustments. The originality of the research stems from correcting past misidentifications and refining nomenclature according to contemporary taxonomic criteria. This updated checklist with habitat and conservation status will provide a platform for the development of a very strong conservation and management strategy along the marine and coastal waters of Odisha.

[**Keywords:** Bay of Bengal, Ichthyofaunal diversity, Odisha coast, Species checklist, Systematics]

Introduction

The Convention on Biological Diversity (CBD) represented “biodiversity” in Article number 2 as “the variability among living organisms from all sources, including, *inter alia*, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems”¹. To survive on planet Earth, biodiversity provides us with numerous important ecosystem services, which include food, pure water, shelter, clothing, and many more. The only way to protect mankind through biodiversity is the sustainable use and management of bioresources. The United Nations Sustainable Development Goals (SDGs) established a framework for people, the planet, and prosperity, with 17 goals by 2030. Of the 17 goals, Goal 14 focuses on “life below water,” protecting and sustainably using the oceans, seas, and marine resources. India has played a very important role in shaping the SDGs, particularly on Goal 14^(ref. 2). Odisha (latitude 17°49' N – 22°34' N and longitude 81°29' E – 87°29' E) is a coastal

state of India with a long coastline of 574.7 km^(ref. 3). The coastal area of the state is separated by the six districts (Balasore, Bhadrak, Kendrapara, Jagatsinghpur, Puri and Ganjam). There are a total of 73 landing centres among these six districts, with Ganjam having the highest (20) number and Jagatsinghpur with the lowest (05) number of landing centres⁴.

To create a strategic plan for sustainable development and establish a conservation plan, an inventory of ichthyofaunal diversity is essential. Various ichthyologists have contributed over the years to the study of ichthyofaunal diversity along the Odisha coast. The foundation of the ichthyofaunal study in Odisha was laid by the eminent surgeon-naturalist Sir Francis⁵ in his publication “On the fishes of Orissa”, which included 94 freshwater and 52 coastal marine fishes, *i.e.*, 146 species from the inland and coastal waters of Odisha. Exploration by *R.I.M.S. Investigator* led to collections from the Odisha coast, and those became part of publications by Alcock^{6,7}. Similarly, the Bengal fisheries steamer

"Golden Crown" surveyed the coastal waters of the Bay of Bengal, including the Odisha coast, with the results mainly published by Annandale⁸, Annandale & Jenkins⁹, and Jenkins¹⁰.

The Zoological Survey of India conducted the 'Chilika Expedition', and the results on fish fauna were published as a series of publications¹¹⁻¹⁶. In recent years, researchers have focused more on fish faunal studies of the Chilika lagoon rather than on coastal waters¹⁷⁻²². Following the anthropogenic opening of a new mouth in 2000, several studies provided additional information²³⁻²⁶.

During the period from 1925 to 2000, the works of Misra^{27,28} gave insights into the coastal fish resources of Odisha. The major compilation of all fish works from the Odisha coast was "Marine and Estuarine Fishes of Orissa" by Barman and their team²⁹, which reported 605 species belonging to 138 families and 27 orders. After that, many workers came forward to study the marine and coastal fishes of Odisha. Pati and their co-authors³⁰ published an annotated checklist on "Marine fauna of Odisha", in which they listed 722 species of Pisces belonging to 2 classes, 30 orders, 145 families, and 386 genera. Recently, Mohapatra and team³¹ reported about 642 valid species along the Odisha coast, excluding the freshwater fishes reported by Pati *et al.*³⁰ and resolving some taxonomic confusion.

Many new records and reports on fish from Odisha's coastline were scattered in the various journals, books, and book chapters. It is imperative to bring all the scattered data into a single frame so that it will be easier to find out the total ichthyofauna diversity of the Odisha coast. The current study aggregated all the scattered publications in this checklist, and all the corresponding citations are presented in Appendix S1 of the checklist.

Materials and Methods

For this documentation, all published literature from 1869 to date were carefully reviewed, and the respective citations are listed in the checklist. The present work utilised 191 discrete scientific publications regarding the fish faunal literature of Odisha. Taxonomic classification follows Van der Laan *et al.*³², with valid species nomenclature and synonymy based on the Catalogue of Fishes of the California Academy of Sciences³³. Wherever applicable, synonyms or alternative names used in literature and/or misapplied names used by authors are provided. Habitat information for all fish species

was gathered from published literature and FishBase³⁴. The conservation status of each species was obtained from the IUCN Red List of Threatened Species³⁵. All relevant literature on the taxonomy of different species is consulted to determine the proper identity of several species.

Results

After screening for synonymous names, misidentifications, and species unlikely to occur, the total ichthyofaunal diversity of the Odisha coast stands at 778 species belonging to 402 genera, 143 families, and 36 orders under three classes (Appendix S1). A total of 41 genera and 80 species (only 10.3 % of total species) belonging to the class Elasmobranchii; one species from class Holocephali; and the remaining 693 species belong to the class Actinopteri. Among the elasmobranchs, the family Dasyatidae has the highest reported number of species, *i.e.*, 22, followed by Carcharhinidae with a record of 12 species. Among the bony fishes (Actinopteri), the family Carangidae is represented by a maximum of 40 species, followed by Oxudercidae (39 species), and Sciaenidae (32 species). Forty-one families have a single species inhabiting the Odisha coast. The family Oxudercidae has 28 genera, followed by Carangidae (22 genera), and 15 each in Sciaenidae and Gobiidae. The dominant order in the list is Acanthuriformes, comprising 60 genera and 146 species in 20 families; followed by Carangiformes with 58 genera and 117 species in 18 families; while Gobiiformes contains 53 genera and 80 species, in six families (Table 1; Fig. 1).

Conservation status of all these fishes, as per the IUCN Red Data List (IUCN 2025), revealed that about 9.2 per cent of fishes are threatened: 15 species are Critically Endangered, 25 species are Endangered, and 31 species are Vulnerable. Only 17 species are categorised as Near Threatened. More than 61 per cent of fish from the Odisha coast (478 species) are assessed as Least Concern. Eighty species (10.2 %) are judged as Data Deficient, and 132 species (> 17 %) await evaluation (Fig. 2). Along the Odisha coast, 24 species of scheduled fish species are also listed in the checklist for better understanding.

Discussion

A curated and updated checklist of the marine and estuarine fishes of Odisha is presented with relevant classification [following Catalogue of Fishes – Van der Laan *et al.*³²], habitat information, commercial

Table 1 — Number of orders, family, genera, and species in the Odisha coast vis-à-vis India and world

Sl. No.	Family	Odisha		India		World	
		Genera	Species	Genera	Species	Genera	Species
	Class I: ELASMOBRANCHI						
	Order: Orectolobiformes						
1.	Rhincodontidae	01	01	01	01	01	01
2.	Hemiscylliidae	01	04	01	07	02	17
3.	Stegostomatidae	01	01	01	01	01	01
	Order: Lamniformes						
4.	Alopiidae	01	01	01	01	01	01
	Order: Carcharhiniformes						
5.	Triakidae	01	01	03	04	09	46
6.	Hemigaleidae	02	02	04	04	04	08
7.	Carcharhinidae	06	12	09	28	10	59
8.	Galeocerdonidae	01	01	01	01	01	01
9.	Sphyrnidae	02	04	02	05	02	12
	Order: Torpediniformes						
10.	Narkidae	01	01	02	02	05	09
11.	Narcinidae	01	04	02	08	05	32
12.	Torpedinidae	01	03	01	04	02	21
	Order: Rhinopristiformes						
13.	Rhinobatidae	01	02	02	05	03	37
14.	Rhinidae	02	02	02	04	03	11
15.	Glaucostegidae	01	03	01	04	01	09
16.	Pristidae	02	04	02	04	02	05
	Order: Myliobatiformes						
17.	Dasyatidae	11	22	14	31	19	101
18.	Gymnuridae	01	03	01	03	01	14
19.	Aetobatidae	01	02	01	02	01	05
20.	Myliobatidae	01	02	01	04	02	19
21.	Rhinopteridae	01	02	01	03	01	08
22.	Mobulidae	01	03	01	07	01	09
	Class II. HOLOCEPHALI						
	Order: Chimaeriformes						
23.	Chimaeridae	01	01	01	01	02	47
	Class III. ACTINOPTERI						
	Order: Elopiformes						
24.	Elopidae	01	01	01	01	01	07
25.	Megalopidae	01	01	01	01	01	02
	Order: Anguilliformes						
26.	Moringuidae	01	02	01	07	02	18
27.	Anguillidae	01	02	01	05	01	19
28.	Muraenidae	03	09	11	51	16	229
29.	Ophichthidae	09	19	19	47	62	371
30.	Muraenesocidae	02	04	04	06	05	09
31.	Nettastomatidae	01	01	03	03	06	46
32.	Congridae	05	05	16	41	32	235
	Order: Clupeiformes						
33.	Engraulidae	05	29	05	39	16	194
34.	Chirocentridae	01	02	01	02	01	02
35.	Dussumieriidae	01	02	01	04	02	16

(Contd.)

Table 1 — Number of orders, family, genera, and species in the Odisha coast vis-à-vis India and world (*Contd.*)

Sl. No.	Family	Odisha		India		World	
		Genera	Species	Genera	Species	Genera	Species
36.	Pristigasteridae	04	08	04	13	09	39
37.	Ehiravidae	02	02	03	03	11	29
38.	Dorosomatidae	10	21	10	26	30	116
	Order: Alepocephaliformes						
39.	Alepocephalidae	01	01	10	16	20	103
	Order: Gonorhynchiformes						
40.	Chanidae	01	01	01	01	01	01
	Order: Siluriformes						
41.	Plotosidae	01	02	02	04	10	42
42.	Ariidae	07	18	10	25	42	157
	Order: Stomiiformes						
43.	Stomiidae	01	01	03	04	11	260
	Order: Aulopiformes						
44.	Synodontidae	03	07	04	23	04	84
	Order: Myctophiformes						
45.	Myctophidae	01	01	11	55	34	253
	Order: Gadiformes						
46.	Bregmacerotidae	01	01	01	03	01	16
47.	Macrouridae	01	01	09	19	27	374
	Order: Beryciformes						
48.	Holocentridae	03	03	04	28	08	90
49.	Melamphaidae	01	01	01	01	05	79
	Order: Ophidiiformes						
50.	Acanthonidae	01	01	01	01	01	03
51.	Ophidiidae	02	02	15	27	46	279
	Order: Batrachoidiformes						
52.	Batrachoididae	02	02	03	05	23	84
	Order: Gobiiformes						
53.	Kurtidae	01	01	01	01	01	02
54.	Apogonidae	05	09	24	81	40	381
55.	Trichonotidae	01	01	01	02	01	10
56.	Eleotridae	03	08	11	21	36	215
57.	Oxudercidae	28	39	37	84	110	745
58.	Gobiidae	15	23	55	189	167	1430
	Order: Syngnathiformes						
59.	Pegasidae	01	01	02	03	02	08
60.	Dactylopteridae	01	02	01	05	02	07
61.	Mullidae	03	11	03	30	06	107
62.	Callionymidae	03	09	04	21	11	201
63.	Fistulariidae	01	01	01	02	01	04
64.	Centriscidae	01	01	03	04	05	13
65.	Syngnathidae	05	08	19	47	59	333
	Order: Scombriformes						
66.	Centrolophidae	01	01	01	03	08	30
67.	Ariommatidae	01	01	01	01	01	08
68.	Stromateidae	01	03	01	04	03	21
69.	Chiasmodontidae	01	01	03	03	04	36
70.	Scombridae	05	08	11	24	15	55
71.	Trichiuridae	03	06	06	11	10	47

(Contd.)

Table 1 — Number of orders, family, genera, and species in the Odisha coast vis-à-vis India and world (*Contd.*)

Sl. No.	Family	Odisha		India		World	
		Genera	Species	Genera	Species	Genera	Species
	Order: Carangiformes						
72.	Latidae	01	01	02	02	03	14
73.	Lactariidae	01	01	01	01	01	01
74.	Sphyraenidae	01	05	01	11	01	26
75.	Polynemidae	05	07	05	11	08	42
76.	Psettodidae	01	01	01	01	01	03
77.	Citharidae	01	01	01	01	05	06
78.	Bothidae	05	09	09	20	20	169
79.	Paralichthyidae	01	08	02	10	10	65
80.	Samaridae	01	01	02	02	04	30
81.	Soleidae	09	17	12	29	31	179
82.	Cynoglossidae	02	17	03	25	03	168
83.	Toxotidae	01	02	01	02	02	09
84.	Menidae	01	01	01	01	01	01
85.	Istiophoridae	02	02	05	05	05	09
86.	Carangidae	22	40	28	64	39	153
87.	Echeneidae	02	03	03	06	03	08
88.	Rachycentridae	01	01	01	01	01	01
89.	Coryphaenidae	01	01	01	02	01	02
	Order: Atheriniformes						
90.	Atherinidae	02	02	04	08	13	79
	Order: Beloniformes						
91.	Belonidae	04	05	05	11	10	46
92.	Hemiramphidae	03	09	05	18	08	62
93.	Zenarchopteridae	01	04	02	08	05	64
94.	Exocoetidae	04	04	06	25	07	80
	Order Cichliformes						
95.	Cichlidae	02	02	06	09	257	1751
	Order: Mugiliformes						
96.	Ambassidae	01	05	04	18	08	54
97.	Mugilidae	07	14	09	21	25	76
	Order: Blenniiformes						
98.	Pomacentridae	02	02	21	104	29	436
99.	Blenniidae	03	04	29	83	59	411
	Order: Perciformes						
100.	Serranidae	01	01	02	06	12	105
101.	Epinephelidae	02	14	09	73	16	176
102.	Liopropomatidae	01	01	03	04	06	41
103.	Platycephalidae	06	08	12	20	17	86
104.	Triglidae	02	03	08	20	14	179
105.	Synanceiidae	06	08	20	35	52	142
106.	Scorpaenidae	06	08	18	44	38	385
	Order: Centrarchiformes						
107.	Kyphosidae	01	01	01	03	02	12
108.	Terapontidae	02	04	02	04	16	62
	Order: Labriformes						
109.	Labridae	01	01	35	141	75	677
110.	Uranoscopidae	02	04	02	09	07	59

(Contd.)

Table 1 — Number of orders, family, genera, and species in the Odisha coast vis-à-vis India and world (*Contd.*)

Sl. No.	Family	Odisha		India		World	
		Genera	Species	Genera	Species	Genera	Species
	Order: Acropomatiformes						
111.	Pempheridae	01	03	02	07	02	85
112.	Champsodontidae	01	02	01	05	01	13
113.	Synagropidae	01	01	02	02	04	17
	Order: Acanthuriformes						
114.	Gerreidae	02	11	02	11	07	54
115.	Sillaginidae	03	07	03	11	05	39
116.	Drepanidae	01	02	01	02	01	03
117.	Ephippidae	02	03	03	05	08	15
118.	Sciaenidae	15	32	18	38	68	298
119.	Haemulidae	03	09	03	27	21	137
120.	Lobotidae	02	02	03	03	03	15
121.	Monodactylidae	01	03	01	03	01	04
122.	Lutjanidae	04	22	14	64	21	138
123.	Pomacanthidae	02	03	06	21	07	90
124.	Chaetodontidae	03	04	08	47	12	137
125.	Leiognathidae	09	19	09	25	10	51
126.	Zanclidae	01	01	01	01	01	01
127.	Acanthuridae	01	07	05	39	06	85
128.	Nemipteridae	03	08	03	32	05	78
129.	Lethrinidae	01	03	05	26	05	46
130.	Sparidae	04	05	08	15	39	164
131.	Siganidae	01	04	01	19	01	32
132.	Scatophagidae	01	01	01	01	02	04
133.	Priacanthidae	01	02	04	09	04	22
	Order: Lophiiformes						
134.	Lophiidae	01	01	02	05	04	34
135.	Ogcocephalidae	01	02	05	11	10	98
136.	Antennariidae	01	02	04	09	06	32
	Order: Tetraodontiformes						
137.	Triacanthidae	04	05	05	07	11	24
138.	Molidae	01	01	03	04	03	05
139.	Diodontidae	02	03	04	07	07	19
140.	Tetraodontidae	08	14	12	39	27	193
141.	Ostraciidae	03	03	03	08	06	24
142.	Monacanthidae	03	03	15	28	27	108
143.	Balistidae	03	03	11	19	12	39
		402	778				

category and IUCN Red List conservation status. Primary freshwater fish orders, such as Osteoglossiformes, Cypriniformes, Caraciformes, Siluriformes (except family Plotosidae and Ariidae), Anabantiformes, Cyprinodontiformes, Synbranchiformes, and the family Adrianichthyidae are excluded from the purview of the present checklist. Pati *et al.*³⁰ cited references such as Gupta³⁶, Gupta & Ahmad³⁷, Ahmad³⁸⁻⁴⁰, Gupta & Gupta⁴¹, and Madhavi⁴², which report helminth parasites in marine fishes. These

references have been dropped for serious shortcomings, raising doubts about the authors' familiarity with fish taxonomy; erroneous identification of fishes and absence of any taxonomic information or voucher details of certain fishes, such as *Psenes cyanophrys* Valenciennes 1833, *Synodus indicus* (Day, 1873), and *Thunnus albacares* (Bonnaterre, 1788) along the Odisha coast.

Despite the potential existence of these species, current compilation has excluded them due to lack

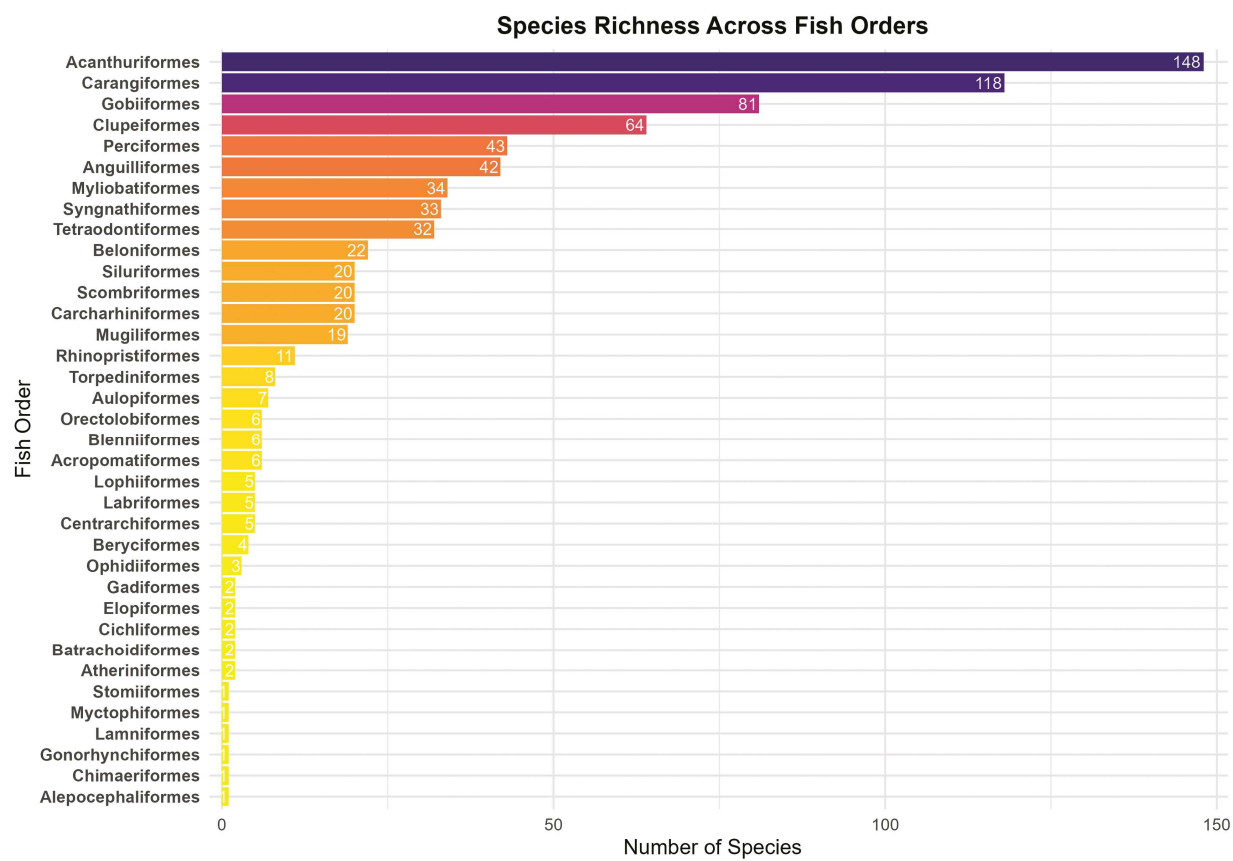


Fig. 1 — Species richness across the fish orders

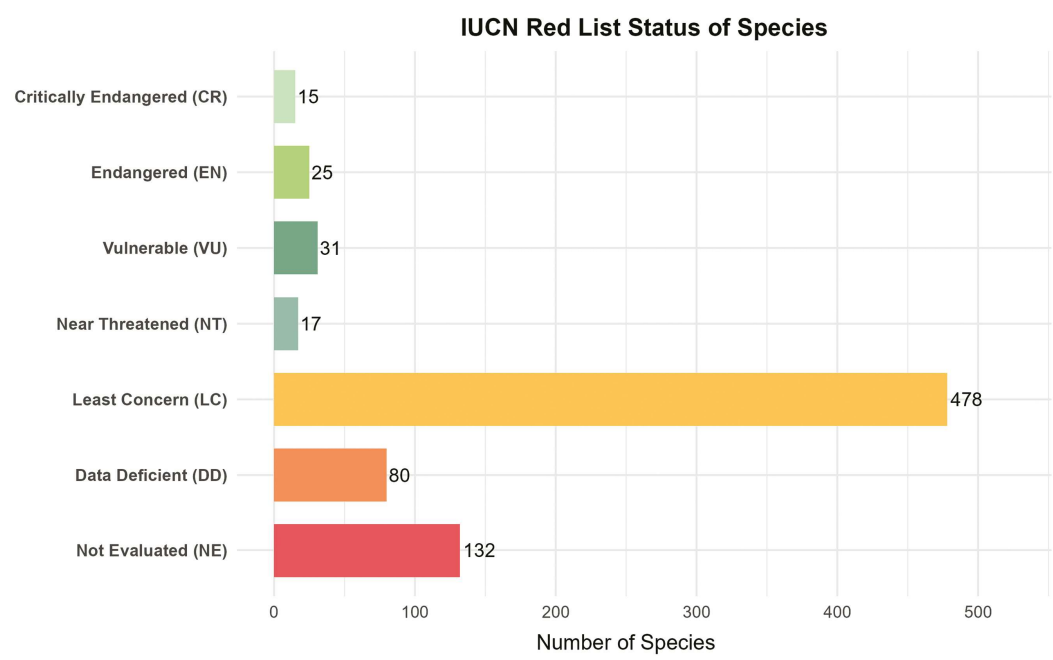


Fig. 2 — IUCN red list status of species

of any taxonomic information and identification uncertainties. Upon thorough scrutiny, re-identification, and review of works done elsewhere, an alternate nomenclature was assigned to 65 fish species reported earlier. Further, it has been found that 25 species have been reported outside their normal distributional range and are unlikely to occur (Table 2). Pertinent justifications behind the removal of these 90 names of fish species from the ichthyofaunal checklist are provided herewith.

1. ***Aetobatus narinari* (Euphrasen, 1790)**: White *et al.*⁴³ conducted a thorough study and concluded that *A. narinari* is distributed in the Atlantic Ocean and that all earlier reports of this species from the Indian Ocean are based on *Aetobatus ocellatus*.
2. ***Gymnura japonica* (Temminck & Schlegel, 1850) & *Pteroplatea micrura* (Bloch & Schneider, 1801)**: Muktha *et al.*⁴⁴, based on molecular studies, concluded that “two butterfly rays, *G. japonica* and *G. micrura*, from Indian waters are misidentifications of *Gymnura poecilura* only, and so both the species must be excluded from the Indian elasmobranch faunal list”.
3. ***Pristis pectinata* Latham, 1749**: It is known from the Atlantic Ocean, Mediterranean Sea, and southwestern Indian Ocean (off South Africa)³³. The species is possibly extinct in most parts of its historical distribution range except for the Bahamas, Belize, Cuba, Honduras, and the United States. Faria *et al.*⁴⁵ recognises *P. clavata* Garman, 1906, with an eastern Indian Ocean and western Pacific distributional range. Reports of *P. pectinata* Chilika lagoon¹⁶ are most probably misapplied to *P. clavata* specimens.
4. ***Rhynchobatus djiddensis* (Forsskal, 1775)**: This species is currently known from the Red Sea, Persian Gulf, East Africa, and South Africa to Madagascar and Réunion. All earlier records of this fish from the Indian coast are based on the report of Day⁴⁶⁻⁴⁹. But, as reported by Last *et al.*⁵⁰, only two species of *Rhynchobatus* occur along the Indian coast, *i.e.*, *R. australiae* Whitley 1939 and *R. laevis* (Bloch & Schneider 1801). Prior to Day⁴⁶⁻⁴⁹, it was reported as *R. laevis* by Bloch and Schneider (1801: Tranquebar)⁵¹, Swainson (1839: Vizagapatnam, based on Russell, 1803)⁵², and Duméril (1865: Malabar, Pondicherry)⁵³. Following Day⁴⁹, Misra²⁸ also treated all *R. laevis* records as *R. djiddensis*. Hence, it is preferable to use the name *R. laevis* (Bloch & Schneider) here.
5. ***Stegostoma fasciatum* (Herman, 1783)**: Kottelat⁵⁴ and Dahl *et al.*⁵⁵ reviewed its nomenclature and suggested that *Stegostoma tigrinum* (Forster 1781) should be treated as a senior synonym of *Stegostoma fasciatum* (Herman 1783).
6. ***Torpedo marmorata* Risso, 1810**: This species is distributed in the eastern Atlantic from the United Kingdom in the north to Cape of Good Hope (South Africa) in the south. The report of *Torpedo marmorata* by Prashad⁵⁶ has been treated as *T. panthera* Olfers, 1831 by Misra (1969). Considering positive reports of *T. panthera* in the Bay of Bengal, this name is retained.
7. ***Trygon kuhlii* Müller & Henle, 1841**: Formerly, this species was known to be widely distributed in the Indo-Pacific. However, Last *et al.*⁵⁰ observed that it comprises a complex of several species, and the type series comprises multiple species. They designated the lectotype and concluded that its distribution is in the Pacific Ocean around the Solomon Islands. The Indian Ocean species was named *Neotrygon caeruleopunctata* by Last, White & Serét, 2016, and later, a new species, *N. indica*, was described by Pavan-Kumar, Kumar, Pitale, Shen & Borsa, 2018 from the Gulf of Mannar. The specimen collected from the Odisha coast⁵⁷ was identified as *N. indica*; hence, this name is used instead.
8. ***Acanthopagrus latus* (Houttuyn, 1782)**: Although *Acanthopagrus latus* was earlier considered widely distributed in the Indo-West Pacific, a recent study⁵⁸ indicates that its distribution is limited to the East-Asia shelf in the Western Pacific. Iwatsuki⁵⁸ stated that yellowfin seabream from the Bay of Bengal, including Chilika lagoon and the east coast of India, are *A. longispinnis* (Valenciennes), which is later treated as a synonym of *Acanthopagrus datnia* (Hamilton, 1822)⁵⁹. Hence, the name *A. datnia* is used against the reported species *A. latus*.
9. ***Achirus maculatus* Bloch & Schneider, 1801**: Unfortunately, the single specimen (F 3428) collected from the Ganjam coast is not traceable in the National Repository of the Zoological Survey of India. Bloch & Schneider's⁵¹ *maculatus* belongs to the genus *Trinectes* (family Achiridae). The author's name might have been used

Table 2 — List of the species excluded from the total ichthyofaunal checklist of Odisha

Sl. No.	Reported name	Treated as
ELASMOBRANCHII		
1.	<i>Aetobatus narinari</i> (Euphrasen)	<i>Aetobatus ocellatus</i> (Kuhl, 1823)
2.	<i>Gymnura japonica</i> (Temminck & Schlegel) & <i>Pteroplatea micrura</i> (Bloch & Schneider)	<i>Gymnura poecilura</i> (Shaw 1804)
3.	<i>Pristis pectinata</i> Latham	<i>Pristis clavata</i> Garman 1906
4.	<i>Rhynchobatus djiddensis</i> (Forsskål)	<i>Rhynchobatus laevis</i> (Bloch & Schneider 1801)
5.	<i>Stegostoma fasciatum</i> (Herman)	<i>Stegostoma tigrinum</i> (Forster 1781)
6.	<i>Torpedo marmorata</i> Risso	<i>Torpedo panthera</i> Olfers 1831
7.	<i>Trygon kuhlii</i> Müller & Henle	<i>Neotrygon indica</i> Pavan-Kumar, Kumar, Pitale, Shen & Borsa 2018
ACTINOPTERI		
8.	<i>Acanthopagrus latus</i> (Houttuyn)	<i>Acanthopagrus datnia</i> (Hamilton 1822)
9.	<i>Achirus maculatus</i> Bloch & Schneider	Error in using Author name
10.	<i>Apogonichthys pseudotaeniatus</i> (Gon) & <i>Apogonichthys taeniatus</i> (Cuvier)	<i>Apogonichthys sialis</i> (Jordan & Thompson 1914)
11.	<i>Argyrops bleekeri</i> Oshima	<i>Argyrops spinifer</i> (Forsskål 1775)
12.	<i>Awaous stamineus</i> (Eydoux & Souleyet), <i>Awaous guamensis</i> (Valenciennes), <i>Awaous gutum</i> (Hamilton), <i>Chiramenu fluviatilis</i> Rao, & <i>Awaous litturatus</i> (Steindachner)	<i>Awaous striatus</i> (Day, 1868)
13.	<i>Bascanichthys longipinnis</i> (Kner & Steindachner)	<i>Bascanichthys deraniyagalai</i> Menon, 1961
14.	<i>Brachypterois serrulata</i> (Richardson)	<i>Brachypterois serrulifer</i> (Fowler 1936)
15.	<i>Callionymus melanopterus</i> Bleeker	<i>Callionymus fluviatilis</i> Day 1876
16.	<i>Canthigaster margaritata</i> (Rüppell)	<i>Canthigaster petersii</i> (Bianconi, 1854)
17.	<i>Carangoides praeustus</i> (Anonymous [Bennett])	<i>Carangoides ire</i> (Cuvier 1833)
18.	<i>Caranx carangus</i> (Bloch) & <i>Caranx hippos</i> (Linnaeus)	<i>Caranx ignobilis</i> (Forsskal, 1775)
19.	<i>Coilia borneensis</i> Bleeker	<i>Coilia reynaldi</i> Valenciennes 1848
20.	<i>Crenidens crenidens</i> (Forsskål) & <i>Crenidens indicus</i> Day	<i>Crenidens macracanthus</i> Günther, 1874
21.	<i>Cynoglossus itinus</i> (Snyder)	<i>Cynoglossus praecisus</i> Alcock 1890
22.	<i>Dussumieria elopoides</i> Bleeker	<i>Dussumieria hasseltii</i> Bleeker 1851
23.	<i>Elops saurus</i> Linnaeus & <i>Elops indicus</i> Swainson	<i>Elops machnata</i> (Fabricius 1775)
24.	<i>Encrasicholina devisi</i> (Whitley)	<i>Encrasicholina heteroloba</i> (Rüppell 1837)
25.	<i>Epinephelus morrhua</i> (Valenciennes)	<i>Epinephelus radiatus</i> (Day 1868)
26.	<i>Epinephelus tauvina</i> (Forsskål)	<i>Epinephelus coioides</i> (Hamilton, 1822)
27.	<i>Filimanus heptadactyla</i> (Cuvier)	<i>Filimanus similis</i> Feltes, 1991
28.	<i>Hippocampus brachyrhynchus</i> Duncker & <i>Hippocampus fuscus</i> Rüppell	<i>Hippocampus kuda</i> Bleeker, 1852
29.	<i>Leiognathus brevirostris</i> Valenciennes	<i>Nuchequula gerreoides</i> (Bleeker, 1851)
30.	<i>Leiognathus ruconius</i> (Hamilton)	<i>Deveximentum interruptum</i> (Valenciennes, 1835)
31.	<i>Lutjanus russelli</i> (Bleeker)	<i>Lutjanus indicus</i> Allen, White & Erdmann 2013
32.	<i>Moringua arundinacea</i> (McClelland)	<i>Moringua guthriana</i> (McClelland 1844)
33.	<i>Mugil tade</i> Forsskål, <i>Liza tade</i> (Forsskål), & <i>Planiliza tade</i> (Forsskål)	<i>Planiliza planiceps</i> (Valenciennes 1836)
34.	<i>Myrophis lepturus</i> Kotthaus	<i>Pisodonophis cancrivorus</i> (Richardson, 1848)
35.	<i>Nibea chui</i> Trewavas	<i>Nibea coibor</i> (Hamilton, 1822)
36.	<i>Ostorhinchus aureus</i> (Lacepède)	<i>Ostorhinchus fleurieu</i> Lacepède 1802
37.	<i>Oxudercus dentatus</i> Eydoux & Souleyet	<i>Oxudercus nexipinnis</i> (Cantor 1849)
38.	<i>Pampus argenteus</i> (Euphrasen)	<i>Pampus candidus</i> (Cuvier, 1829)
39.	<i>Parexocoetus brachypterus</i> (Richardson)	<i>Parexocoetus mento</i> (Valenciennes 1847)
40.	<i>Paramonacanthus choirocephalus</i> (Bleeker)	<i>Paramonacanthus tricuspis</i> (Hollard 1854)
41.	<i>Pempheris vanicolensis</i> Cuvier	<i>Pempheris malabarica</i> Cuvier 1831

(Contd...)

Table 2 — List of the species excluded from the total ichthyofaunal checklist of Odisha

Sl. No.	Reported name	Treated as
42.	<i>Periophthalmus barbarus</i> (Linnaeus) & <i>Periophthalmus koelreuteri</i> (Pallas)	<i>Periophthalmus kalolo</i> Lesson 1831
43.	<i>Platax pinnatus</i> (Linnaeus)	<i>Platax orbicularis</i> (Forsskal, 1775)
44.	<i>Plicofollis argyropleuron</i> (Valenciennes)	<i>Plicofollis layardi</i> (Günther 1866)
45.	<i>Plotosus limbatus</i> Valenciennes	<i>Plotosus canius</i> Hamilton 1822
46.	<i>Polynemus dubius</i> Bleeker	<i>Polynemus paradiseus</i> Linnaeus, 1758
47.	<i>Polydactylus sexfilis</i> (Valenciennes)	<i>Filimanus xanthonema</i> (Valenciennes 1831)
48.	<i>Pseudogobiopsis oligactis</i> (Bleeker)	<i>Eugnathogobius mas</i> (Hora, 1923)
49.	<i>Pterygotrigla hemisticta</i> (Temminck & Schlegel)	<i>Pterygotrigla arabica</i> (Boulenger 1888)
50.	<i>Rogadius asper</i> (Cuvier)	<i>Rogadius pristiger</i> (Cuvier 1829)
51.	<i>Sardinella jussieu</i> (Valenciennes)	<i>Sardinella dayi</i> Regan, 1917
52.	<i>Sillago maculata</i> Quoy & Gaimard	<i>Sillago aeolus</i> Jordan & Evermann 1902
53.	<i>Stolephorus baganensis</i> Delsman	<i>Stolephorus bengalensis</i> (Dutt & Babu Rao 1959)
54.	<i>Stolephorus commersonii</i> Lacepède	<i>Stolephorus rex</i> Jordan & Seale 1926
55.	<i>Stolephorus insularis</i> Hardenberg	<i>Stolephorus tri</i> (Bleeker, 1852)
56.	<i>Stolephorus waitei</i> Jordan & Seale	<i>Stolephorus baweanensis</i> Hardenberg 1933
57.	<i>Stromateus cinereus</i> Bloch	<i>Pampus griseus</i> (Cuvier 1833)
58.	<i>Thryssa hamiltonii</i> (Gray)	<i>Thryssa malabarica</i> (Bloch 1795)
59.	<i>Thryssa kammalensis</i> (Bleeker)	<i>Thryssa kammalenoides</i> Wongratana 1983
60.	<i>Thryssa malabarica</i> (Bloch)	<i>Thryssa cuvierii</i> (Swainson 1839)
61.	<i>Thryssa valenciennesi</i> (Bleeker)	<i>Thryssa mystax</i> (Bloch & Schneider 1801)
62.	<i>Thryssa vitrirostris</i> (Gilchrist & Thompson)	<i>Thryssa cultella</i> (Hata & Motomura 2019)
63.	<i>Trachinocephalus myops</i> (Forster)	<i>Trachinocephalus trachinus</i> (Temminck & Schlegel 1846)
64.	<i>Valamugil buehneri</i> (Bleeker)	<i>Moolgarda tade</i> (Fabricius 1775)
65.	<i>Zebrias zebra</i> (Bloch)	<i>Zebrias quagga</i> (Kaup 1858)
66.	<i>Acanthurus gahhm</i> (Gmelin)	Unlikely to occur
67.	<i>Acanthurus punctatus</i> (Gill)	Unlikely to occur
68.	<i>Anguilla australis</i> Richardson	Unlikely to occur
69.	<i>Apogon septemstriatus</i> Günther	Unlikely to occur
70.	<i>Argyrosomus amoyensis</i> (Bleeker)	Unlikely to occur
71.	<i>Atropus aurochs</i> (Ogilby)	Unlikely to occur
72.	<i>Dermogenys brachynotus</i> (Bleeker)	Unlikely to occur
73.	<i>Ethmalosa fimbriata</i> (Bowdich)	Unlikely to occur
74.	<i>Halichoeres scapularis</i> (Bennett)	Unlikely to occur
75.	<i>Hoplosebastes armatus</i> Schmidt	Misidentification
76.	<i>Leiodon viridipunctatus</i> Day	Unlikely to occur
77.	<i>Myripristis jacobus</i> Cuvier	Unlikely to occur
78.	<i>Planiliza klunzingeri</i> (Day)	Unlikely to occur
79.	<i>Pristipomoides argyrogrammicus</i> (Valenciennes)	Unlikely to occur
80.	<i>Psenes cyanophrys</i> Valenciennes	Doubtful identification
81.	<i>Pseudodax moluccanus</i> (Valenciennes)	Unlikely to occur
82.	<i>Rastrelliger brachysoma</i> (Bleeker)	Unlikely to occur
83.	<i>Scarus taeniopterus</i> Lesson	Unlikely to occur
84.	<i>Scorpaenopsis cirrhosa</i> (Thunberg)	Unlikely to occur
85.	<i>Serranus indicus</i> (Cuvier & Valenciennes)	Unknown combination
86.	<i>Synodus indicus</i> (Day)	Doubtful identification
87.	<i>Tenualosa reevesii</i> (Richardson)	Unlikely to occur
88.	<i>Thunnus albacares</i> (Bonnaterre)	Doubtful identification
89.	<i>Tylosurus choram</i> (Rüppell)	Unlikely to occur
90.	<i>Uranoscopus fuscomaculatus</i> Kner	Unlikely to occur

incorrectly. *Achirus maculatus* Kuhl & van Hasselt, in Bleeker [a synonym of *Pardachirus pavoninus* (Lacepède, 1802)], is rather a common species along this coast.

10. ***Apogon taeniatus* Cuvier, 1828** and ***Apogonichthyoides pseudotaeniatus* (Gon 1986)**: *Apogon taeniatus* [= *Apogonichthyoides taeniatus*] is known to be distributed in the Red Sea, Persian Gulf, Gulf of Oman, the east coast of Africa to Madagascar, and so is unlikely to occur along the Indian coast. Earlier, two barred apogonids were thought to be this species. After the discovery of *A. pseudotaeniatus*, considering the distribution of *A. taeniatus*, the name *A. pseudotaeniatus* was used. But soon the confusion was cleared by the key provided in Fraser and Allen⁶⁰, and the species along south and east India are now treated as *A. sialis* (Jordan & Thompson, 1914).
11. ***Argyrops bleekeri* Oshima, 1927**: Yennawar & Tudu⁶¹ reported the occurrence of *Argyrops bleekeri* from Talsari, Balasore, Odisha, based on juvenile specimens that could not be traced for further examination. The authors reported the species based on aquarium photographs. So, verification of the specimen is not possible. According to the review by Iwatsuki & Heemstra⁶², it is clearly indicated that *A. bleekeri* of the Western Pacific is replaced by *A. spinifer* (Forsskal, 1775) in the Indian Ocean. Both species can be basically differentiated by the presence of single or double rudimentary spines on the first dorsal fin. While reporting, the authors might have missed the second rudimentary dorsal fin spine, or the spine might possibly be broken, to consider their specimen as *A. bleekeri*. However, based on the distribution pattern, only one *Argyrops* species, *A. spinifer*, occurs along the Odisha coast.
12. ***Awaous stamineus* (Eydoux & Souleyet, 1850); *Awaous guamensis* (Valenciennes, 1837); *Awaous gutum* (Hamilton, 1822); *Chiramenu fluviatilis* Rao, 1971; *Awaous litturatus* (Steindachner, 1861)**: All these five names were used from time to time for *Euctenogobius striatus* Day, 1868, reported from Odisha by Day⁵. Koumans⁶³ listed the same species as *Awaous stamineus*. Some authors considered it a synonym of *Awaous guamensis*. But Kottelat⁵⁴ treated it as *A. litturatus*. *Awaous gutum* and *Chiramenu fluviatilis* were also reported against the same species. This checklist followed Parenti⁶⁴ to treat all of them, those listed from Odisha, under one name, *Awaous striatus* (Day, 1868).
13. ***Bascanichthys longipinnis* (Kner & Steindachner, 1867)**: The species is currently known to be distributed in the Western Pacific. Based on the description given in Munro⁶⁵, Khora & Rama Rao⁶⁶ from the Rushikulya estuary, Odisha, and Venkateswarlu *et al.*⁶⁷ from the Mahanadi estuary, Odisha, reported this species. However, further examination of specimens at the Estuarine Biology Regional Centre, ZSI, Gopalpur, confirms that *Bascanichthys deraniyagalai* Menon, 1961 was misidentified as this species.
14. ***Brachypterois serrulata* (Richardson, 1846)**: Matsunuma *et al.*⁶⁸ reviewed the genus *Brachypterois* and resurrected *B. serrulifer* Fowler, 1938 from synonymy with *B. serrulata*. It has been observed that *B. serrulifer* is distributed widely in the Indo-West Pacific, whereas the distributional range of *B. serrulata* is restricted to the northwestern Pacific⁶⁸. Hence, the name *Brachypterois serrulifer* Fowler is preferred for the fish of this genus from the Odisha coast.
15. ***Callionymus melanopterus* Bleeker, 1850**: While reporting *C. melanopterus*, Jones & Pantulu⁶⁹ clearly mentioned that it equals *Callionymus fluviatilis* of Day. Although Fricke⁷⁰ once treated *C. fluviatilis* Day as a synonym of *C. melanopterus* Bleeker, in his subsequent work⁷¹, *C. fluviatilis* Day was considered a distinct valid species. The former species is restricted to Malaysia, Singapore, and western Indonesia.
16. ***Canthigaster margaritata* (Rüppell, 1829)**: Day⁴⁹ included most of the species of the genus *Canthigaster* with blue-edged ocellus on both sides of the dorsal fin base and horizontal blue lines around the eye under one name, *C. margaritata*. Munro⁶⁵ also reported only one species, *C. margaritata*, from Sri Lanka. However, the specimens from both Day⁴⁹ and Munro⁶⁵ have 9 or 10 dorsal fin rays, indicating they are not *C. margaritata*, which has 8 dorsal fin rays⁷². Moreover, the distributional limit of *C. margaritata* is restricted to the Red Sea and the Gulf of Aden. As suggested by Allen and Erdmann⁷³, the Indian Ocean population of blue-edged ocellated *Canthigaster* is *C. petersii* (Bianconi, 1854)⁷².

17. ***Carangoides praeustus* (Anonymous [Bennett], 1830)**: Recently, Kimura *et al.*⁷⁴ resurrected *Carangoides ire* (Cuvier, 1833) and observed its distribution from the Persian Gulf east to the Bay of Bengal (India), while *C. praeustus* is confined to the western central Pacific. Hence, all reports of *C. praeustus* from the Indian coast should be treated as *C. ire* (Cuvier).
18. ***Caranx hippos* (Linnaeus, 1766) and *Caranx carangus* (Bloch, 1793)**: The reported name from coastal waters of Odisha was *Caranx carangus*, which is now treated as a junior synonym of *C. hippos*⁷⁵, distributed in the Atlantic Ocean only. Characters of *C. carangus* described by Day⁴⁶ to Talwar & Kacker⁷⁶ closely match those of *C. ignobilis* (Forsskål, 1775) as given in Smith-Vaniz (1984)⁷⁷, and as a result, Indian Ocean records of *C. carangus* (= *C. hippos*) are misidentifications of *C. ignobilis*. Distinction of *C. carangus* and *C. ignobilis* in Talwar & Kacker⁷⁶, as well as Talwar & Jhingran⁷⁸, where a lower count of lateral line scutes for *C. ignobilis* has been recorded, is erroneous⁷⁹. Hence, all records of *C. carangus* from Odisha, as well as from India, should have been treated as *C. ignobilis*, but not *C. hippos*.
19. ***Coilia borneensis* Bleeker, 1852**: This species is known only from Indonesia, and the Indian records of *Coilia borneensis* probably refer to *Coilia reynaldi* Valenciennes, 1848, a very similar species. As the former species is unlikely to occur and the latter has a confirmed distribution along the Odisha coast, the doubtful record is excluded.
20. ***Crenidens crenidens* (Forsskål, 1775) & *Crenidens indicus* Day, 1873**: Only three species are known in the genus *Crenidens*: *C. crenidens* (Forsskål) is distributed in the western part of the Indian Ocean; *C. indicus* Day is known from the Persian Gulf east to southern India and the Nicobar Islands; and *C. macracanthus* Günther, 1874 has a limited distributional range from the east coast of India to Myanmar⁸⁰, though in the past they were thought to be a single species. Further, Roul *et al.*⁸¹ studied two later species from India, and only *C. macracanthus* was collected from Odisha, while *C. crenidens* is unlikely to occur.
21. ***Cynoglossus itinus* (Snyder, 1909)**: *Cynoglossus praecisus* Alcock, 1890 was described from the Ganjam coast, Odisha, in 1890 and was said to have a single tubular nostril on the eyed side, a character shared with *C. itinus*. Menon⁸² could have examined specimens of *C. itinus* from the western central Pacific only, and he considered *C. praecisus* as a synonym of *C. kopsii* (Bleeker, 1851). But Wang *et al.*⁸³ considered *C. praecisus* a valid species. At a stage when Munroe⁸⁴ raised the point that the taxonomic status of most populations currently identified as *C. itinus* requires research, this compilation, preferred to continue the name *C. praecisus*.
22. ***Dussumieria elopsoides* Bleeker, 1849**: While resurrecting *Dussumieria hasseltii* Bleeker, 1851, Hata *et al.*⁸⁵ observed that the species is widely distributed in the Indo-West Pacific, but *D. elopsoides* is confined to the Indonesian waters. So, earlier records of *D. elopsoides* are treated here as *D. hasseltii*.
23. ***Elops saurus* Linnaeus 1766 and *Elops indicus* Swainson 1839**: *Elops saurus* is currently known to be distributed in the western Atlantic region. Following Day⁴⁹, many authors treated Indian coast species as *Elops saurus*. However, Fraser⁸⁶ established that Indian Ocean specimens are to be called *Elops machnata* (Fabricius, 1775), and the same nomenclature is also considered by Kottelat⁵⁴ for Indo-Pacific specimens. Recently the authorship has been changed as Fabricius in Niebuhr (ex Forsskål), and so the name *E. machnata*³³. *Elops indicus* Swainson was described based on '*Elops saurus* Linn.' of Russell⁸⁷ from Vizagapatnam, and so it is the same Indo-Pacific species *E. machnata* (Fabricius).
24. ***Encrasicholina devisi* (Whitley, 1940)**: The species is currently relegated to the synonymy of *Encrasicholina heteroloba* (Rüppell, 1837) based on the work of Hata & Motomura⁸⁸.
25. ***Epinephelus morrhua* (Valenciennes, 1833)**: Mishra *et al.*⁸⁹ identified their specimens as *Epinephelus morrhua* following Day⁴⁶, where *Serranus radiata* was treated as a synonym. Illustration of *Serranus morrhua* of Day⁴⁶ is *Epinephelus radiata* Day (Heemstra & Randall 1993). The distribution map of *E. morrhua* in Heemstra & Randall⁹⁰ indicates its occurrence around reef areas, while *E. radiatus* is well distributed along the east coast of India. Panda & Parida⁹¹ are rather correct in reporting *E. radiatus* from the northern coast of Odisha. Hence, the name *E. radiatus* (Day, 1868) is used in the list instead of *E. morrhua*.

26. ***Epinephelus tauvina* (Fabricius, 1775):** *Epinephelus tauvina* prefers clear water areas on coral reefs; juveniles occur on reef flats and in tide pools, but adults are found in deeper water⁹⁰. Therefore, *E. tauvina* is unlikely to occur along the Odisha coast. Reports of *E. tauvina* from the Odisha coast are most likely misidentified *Epinephelus coioides*, as distinguished by Heemstra & Randall⁹⁰. Earlier, *E. coioides* (Hamilton, 1822) was never considered a distinct species and was erroneously named as a similar-looking species, *E. tauvina*.
27. ***Filimanus heptadactyla* (Cuvier, 1829):** Earlier, starting from Day⁴⁷ to Menon & Babu Rao⁹², seven filament threadfins of India with no black shoulder spot were determined as *Polynemus heptadactylus*. Barman & Mishra⁹³ have concluded that *Filimanus heptadactyla* (with lower gill raker count, 35-41) does not occur in Indian waters, while that is replaced by *Filimanus similis* Feltes, 1991 Feltes (having more gill rakers, 42-45) in this region.
28. ***Hippocampus brachyrhynchus* Duncker 1914 & *Hippocampus fuscus* Rüppell 1838:** Based on *Hippocampus brachyrhynchus* described by Duncker⁹⁴ from Chilika lagoon, *H. fuscus* was reported from Odisha as the former is treated as a junior synonym of the latter by Lourie *et al.*⁹⁵. However, Lourie *et al.*⁹⁶ amended it to consider *H. brachyrhynchus* as *H. kuda* Bleeker 1852 and at the same time treated *H. fuscus* as a Red Sea endemic fish.
29. ***Leiognathus brevirostris* (Valenciennes, 1835):** *Equula brevirostris* Valenciennes 1835 is a junior synonym of *Photopteralis bindus* (Valenciennes, 1835) as stated by Jones⁹⁷. Further, *Leiognathus brevirostris* illustrated by James^{98,99}, having a black nuchal spot, are to be treated as *Nuchequula gerreoides* (Bleeker, 1851), as observed in Kimura *et al.*¹⁰⁰.
30. ***Leiognathus ruconius* (Hamilton, 1822):** As per the original description¹⁰¹, *Chanda ruconius* has a terminal mouth that is protected forward, whereas our specimens have an oblique mouth which is protracted upwards, as in *Secutor* (now *Deveximentum*), as shown in Talwar & Kacker⁷⁶ and James⁹⁹. Kottelat⁵⁴ is correct in placing it in the genus *Leiognathus*. Hence, the correct identification of the species is *Deveximentum interruptum* (Valenciennes, 1835), not *Leiognathus ruconius*.
31. ***Lutjanus russellii* (Bleeker, 1849):** Allen, White & Erdmann¹⁰², while describing a new species, observed a genetic divergence of about 4.1 % between *L. indicus* Allen, White & Erdmann 2013 and its closest congener, *L. russellii*. They found that *L. russellii* is distributed in the western Pacific, whereas the sibling species, *Lutjanus indicus*, is from the Indian Ocean, including the Andamans.
32. ***Moringua arundinacea* (McClelland, 1844):** Following Kottelat⁵⁴, this species is now treated as a synonym of *Moringua guthriana* (McClelland, 1844).
33. ***Mugil tade* Forsskål 1775, *Liza tade* (Forsskål, 1775), & *Planiliza tade* (Forsskål, 1775):** As per the original description, this species is meant to be a variety of *Mugil crenilabis*, i.e., *Mugil crenilabis tade* Forsskål 1775. Close examination of specimens and comparative genetic analysis by Bogorodskyet *al.*¹⁰³ demonstrated that the species is nested within *Moolgarda* alongside *M. crenilabis* (Forsskål 1775) and *M. seheli* (Fabricius 1775). Specimens from India are also nested with the specimens of *M. tade* in the same clade. Hence, they proposed to place specimens with falcate second dorsal and anal fins described from India and Sri Lanka (*M. buehneri* (Bleeker 1853); *M. ceylonensis* Günther, 1861; *M. malabarica* (Shaw 1804) and *M. pedaraki* (Valenciennes 1836)) in the synonymy of *Moolgarda tade*. At the same time, the specimens having *Liza* or *Planiliza* characters, earlier considered to be *Liza tade* [= *Planiliza tade*], are now treated as *Planiliza planiceps* (Valenciennes 1836).
34. ***Myrophis lepturus* Kotthaus 1968:** Although this species was reported from the west coast of India¹⁰⁴, it is unlikely to occur along the east coast. Venkateswarlu *et al.*⁶⁷ listed this from the Mahanadi estuary. On examination, the preserved specimen was found to be a juvenile of *Pisodonophis cancrivorus* (Richardson, 1848).
35. ***Nibea chui* Trewavas 1971:** Both *Nibea chui* and *Nibea coibor* (Hamilton, 1822) share the same dorsal fin soft ray count (24-25), which leads to identity confusion. *Nibea chui* is currently known from the northwest Pacific region and so is unlikely to occur in Indian waters. Whereas *Nibea coibor*, which was not treated as valid even by Talwar¹⁰⁵, is a common species of Indian coast. That might have confused Dutta¹⁰⁶ in reporting

Nibea chui from Dhamara estuary. Therefore, the name *Nibea coibor* is considered here in place of *N. chui*.

36. ***Ostorhinchus aureus* (Lacepède, 1802)**: Mishra *et al.*⁸⁹ have reported this species based on *Apogon aureus* of Day⁴⁶. It seems that Day⁴⁶ considered the specimens with a dark spot wider at the middle and narrower at the upper and lower sides of the caudal peduncle as *A. aureus*, which is rather characteristic of *Ostorhinchus fleurieu* Lacepède 1802. Several authors were similarly confused until *O. fleurieu* was redescribed by Randall *et al.*¹⁰⁷.
37. ***Oxuderces dentatus* Eydoux & Souleyet 1850**: Jaafar & Parenti¹⁰⁸ studied the systematics of the genus *Oxuderces* and resurrected *O. nexipinnis* (Cantor, 1849). At the same time, they confirmed the distribution of *O. dentatus* to eastern China and the Macao region only, and other localities, including the Indian Ocean, are inhabited by *O. nexipinnis*. Hence, we treat Indian coast species of this genus as *Oxuderces nexipinnis* (Cantor).
38. ***Pampus argenteus* (Euphrasen, 1788)**: *Pampus argenteus* (Euphrasen) was believed to be the most widely distributed *Pampus* in the Indo-Western Pacific. Divya *et al.*¹⁰⁹ recently resurrected *Pampus candidus* (Cuvier, 1829) from the synonymy with *P. argenteus* and re-described it as a valid species. Current knowledge indicates that *P. argenteus* is completely absent from the Indian Ocean and is primarily distributed only in the Western Pacific, while *P. candidus* is widely distributed in the Indo-West Pacific, from the Persian Gulf, through India to Southeast Asia and the China Sea¹¹⁰.
39. ***Parexocoetus brachypterus* (Richardson, 1846)**: Misra²⁷ listed *P. brachypterus* (Richardson) from Orissa (now Odisha), considering *P. mento* (Valenciennes 1847) of Day¹¹¹ as the same species. From the given descriptions and distinction provided in Barman & Mishra¹¹², it is inferred that Misra²⁷ was erroneous and considered it here as *P. mento*, thus ruling out any definite record of *P. brachypterus* in the coastal waters of Odisha.
40. ***Paramonacanthus choirocephalus* (Bleeker, 1851)**: This species was listed as from Odisha in Barman *et al.*²⁹, and their identification was mainly based on Day⁴⁹ and Munro⁶⁵, where they have used this nomenclature as a catchall name. However, Hutchins¹¹³ reviewed the genus *Paramonacanthus* and observed that the most common species along the Indian coast is *P. tricuspis* (Hollard). According to Hutchins¹¹³, *P. tricuspis* (Hollard 1854) differs from *P. choirocephalus* in lacking both a supra-abdominal branch of the lateral line and a dark blotch bisected by the anterior abdominal branch of the lateral line. So, the name *P. tricuspis* is adopted for the species on the Odisha coast.
41. ***Pempheris vanicolensis* Cuvier 1831**: Seth & Sahoo¹¹⁴ followed Talwar & Kacker⁷⁶ to identify *Pempheris vanicolensis* from the Odisha coast. But in a review of *Pempheris* from India¹¹⁵, Indian reports of *P. vanicolensis* were treated as *Pempheris flavicycla* Randall, Satapoomin & Alpermann 2014. However, Seth & Sahoo¹¹⁴ have counted 'lateral line scales 74', and as stated in Randall & Bineesh¹¹⁵ and Randall & Victor¹¹⁶, only one species has such a high lateral line scale count, *i.e.*, *Pempheris malabarica* Cuvier 1831. Therefore, the present work uses the last name.
42. ***Periophthalmus barbarus* (Linnaeus, 1766) & *Periophthalmus koelreuteri* (Pallas, 1770)**: In current parlance of nomenclature, *Periophthalmus koelreuteri* (Pallas), reported earlier from Odisha, is a junior synonym of *P. barbarus* (Linnaeus). But this species is confined to the Atlantic Ocean¹¹⁷ and is unlikely to occur on the Indian coast. Koumans¹¹⁸ has observed that 'the subspecies *kalolo* seems to be most abundant' in the northern Indian Ocean. Hence, the Indian specimens that were referred to as *P. koelreuteri* earlier should be known as *P. kalolo* Lesson, 1831^(ref. 29).
43. ***Platax pinnatus* (Linnaeus, 1758)**: Talwar & Kacker⁷⁶ considered all *Platax* species as *P. pinnatus* Linnaeus, and thereafter, *P. pinnatus* was reported from Indian waters. Barman *et al.*²⁹, after listing *P. teira* (Fabricius, 1775) from Odisha, indicated that the second species may probably be *P. orbicularis* (Forsskal, 1775). Froese & Pauly¹¹⁹ observed that the occurrence of *P. pinnatus* in the Indian Ocean is doubtful. As there is no definite report of *P. pinnatus* from India, following Smith & Heemstra¹²⁰, in the current study Odisha coast specimens are treated as *P. orbicularis*.
44. ***Plicofollis argyroleuron* (Valenciennes 1840)**: *Arius satparanus* Chaudhuri, 1916, described by Chaudhuri¹² from Chilika Lagoon, was at

- one time considered *Arius argyropleuron* (Valenciennes)^{121,122}; hence, some authors used that name. However, at present, the same species is relegated to the synonymy of *Plicofolis layardi* (Gunther, 1866)^{54,123}, and thus the name *Plicofolis argyropleuron* is not used.
45. ***Plotosus limbatus* Valenciennes, 1840:** This species is currently known from southern India: the coasts of Tamil Nadu, Kerala and Karnataka^{119,124}, but never recorded from brackish waters. Its occurrence in the Chilika Lagoon⁶⁴ is very unlikely. Researchers have probably confused large specimens of *Plotosus canius* Hamilton, 1822, with this species in the Chilika Lagoon⁶⁴.
 46. ***Polynemus dubius* Bleeker, 1853:** Rao & Rath¹²⁵ reported *Polynemus dubius* from the Brahmani estuary, mostly based on *Polynemus longipectoralis* Weber & de Beaufort, 1922 of Talwar & Jhingran⁷⁸, following the distinction given by Fischer & Whitehead¹²⁶. Their specimens were examined by Mishra & Barman¹²⁷ and confirmed that the identification was erroneous and all have VII spines in the first dorsal fin, II spines in the anal fin, and about 70 pored lateral line scales, as in the case of *Polynemus paradiseus* Linnaeus, 1758, contrary to VIII spines in the first dorsal fin, III spines in the anal fin, and about 75 pored lateral line scales in *P. dubius* Bleeker¹²⁸.
 47. ***Polydactylus sexfilis* (Valenciennes, 1831):** *Polydactylus sexfilis* is known to inhabit shallow waters with sandy or rocky substratum, in lagoons and near reef areas in the vicinity of oceanic islands¹²⁸. There is no suitable environment along the Odisha coast, and so, it is unlikely to occur in the murky coastal waters of Odisha. Day⁴⁷ described *P. sexfilis* as having 46 lateral line scales and being golden in colour, characteristic of *Filimanus xanthonemus* (Valenciennes, 1831). *Filimanus xanthonemus* was not recognised by Menon & Babu Rao⁹⁷, and all their *F. xanthonemus* specimens were probably mistaken for *P. sexfilis*, as confused by Day⁴⁷. Subsequently, *F. xanthonemus* specimens were incorrectly identified as *P. sexfilis* in all these previous works⁹³. Hence, the list uses the name *F. xanthonemus* instead of *P. sexfilis*.
 48. ***Pseudogobiopsis oligactis* (Bleeker, 1857):** It is currently known from Southeast Asia (Thailand, Cambodia, Vietnam, Malaysia, Singapore, Indonesia and the Philippines) in the central Western Pacific. *Glossogobius mas* Hora, 1923, was erroneously considered as *Eugnathogobius oligactis* or *Pseudogobiopsis oligactis* for a brief period. With the revalidation of the former species by Larson *et al.*¹²⁹, use of the latter name is now obsolete.
 49. ***Pterygotrigla hemisticta* (Temminck & Schlegel, 1843):** The report of this species from Odisha was based on *Prionotus alepis* Alcock, 1889, which was placed in synonymy of *Pterygotrigla hemisticta* by Richards¹³⁰. However, Richards *et al.*¹³¹ considered it as *Pterygotrigla Arabica* (Boulenger, 1888), whose name is used here.
 50. ***Rogadius asper* (Cuvier, 1829):** Due to the presence of a strong antrorse preopercular spine in both, *R. pristiger* (Cuvier, 1829) was misidentified as *R. asper* by many authors. However, they are distinguished by the count of body scale rows slanting forwardly and downwardly above the lateral line (51–61 in *R. pristiger* vs. 66–76 in *R. asper*)^{132,133}. *Rogadius pristiger* is widespread in the Indo-West Pacific, whereas *R. asper* has a restricted distribution in the northwest Pacific region from Japan to Viet Nam. From a distributional perspective, with the new characters established, both species are distinguished: *R. pristiger* is treated as occurring in the Indian region, but not *R. asper*.
 51. ***Sardinella jussieu* (Valenciennes, 1847):** Hata & Motomura¹³⁴ re-described and distinguished both *S. jussieu* and *S. dayi* Regan, 1917. They observed that the distribution of *S. jussieu* is limited to Madagascar and Mauritius, while *S. dayi* is known from India and Sri Lanka. Hence, the second name is used for specimens of high gill raker count.
 52. ***Sillago maculata* Quoy & Gaimard 1824:** *Sillago maculata* has a restricted distribution to the eastern coast of Australia and is unlikely to occur along the Indian coast. Venkateswarlu *et al.*⁶⁷ was possibly erroneous in identifying *Sillago Aeolus* Jordan & Evermann, 1902, which is closely similar in colour pattern and widely distributed in Indian waters. Of course, McKay¹³⁵ treated this as a subspecies of *Sillago maculata*, but subsequently, it is treated as a valid species¹³⁶. That is possibly the cause of misapplying the name.
 53. ***Stolephorus baganensis* Hardenberg, 1933:** Recently, Hata *et al.*¹³⁷ established that

- S. baganensis* is distributed from Myanmar (Rangoon), Thailand to Indonesia, whereas a similar species, *S. bengalensis*, described from India, is valid and has a wide distribution in the Indo-Pacific from Pakistan to Taiwan. *Stolephorus baganensis*, *S. dubiosus* Wongratana, 1983, and *S. tri* (Bleeker, 1852), all having a spine on the predorsal and pelvic scutes, are easily distinguishable from *S. bengalensis*, which lacks a spine on the pelvic scute.
54. ***Stolephorus commersonii* Lacepède 1803**: As confirmed by Hata *et al.*¹³⁸, *S. commersonii* is endemic to Mauritius Island, and the specimens having a rounded preopercle and a double pigment line before the dorsal fin are to be treated as *Stolephorus rex* Jordan & Seale, 1926 in Indian waters, which is widely distributed from the western coast of India, through Indonesia to the Philippines and Palau.
 55. ***Stolephorus insularis* Hardenberg 1933**: Hata *et al.*¹³⁷ considered this species as a synonym of *Stolephorus tri* (Bleeker 1852).
 56. ***Stolephorus waitei* Jordan & Seale, 1926**: The species is currently known only from Queensland, Australia¹³⁷, and the specimens from the Indian coast with black spots on the suborbital area, snout and lower jaw tip are to be known as *Stolephorus baweanensis* Hardenberg, 1933.
 57. ***Stromateus cinereus* Bloch, 1795**: Although Day⁵ and Jenkins¹³⁹ stated the occurrence of *Stromateus cinereus* [= *Pampus cinereus*] from Odisha, based on the available data in GenBank and the recent studies, Roul *et al.*¹¹⁰ concluded that *P. cinereus* is completely absent in India and distributed in the western Pacific Ocean, and the Indian specimens, except for the similar-looking *P. candidus* (earlier thought to be *Pampus argenteus*), are *P. griseus*.
 58. ***Thryssa hamiltonii* (Gray, 1835)**: Slender-bodied specimens were referred to by the name *T. hamiltonii*, while distinctly deep-bodied species were identified by the name *Thryssa malabarica* (Bloch, 1795) (Whitehead *et al.*, 1988). Hata *et al.*¹⁴⁰ observed that *T. malabarica* is actually a senior synonym of *T. hamiltonii* and designated a neotype. Thus, all earlier records of *T. hamiltonii* from India are treated here as *T. malabarica*.
 59. ***Thryssa kammalensis* (Bleeker, 1849)**: Described below (☞).
 60. ***Thryssa malabarica* (Bloch, 1795)**: Described below (☞).
 61. ***Thryssa valenciennesi* (Bleeker 1866)**: Menon¹⁴¹ listed *T. valenciennesi* from the Chilika lagoon but didn't recognise closely resembling *T. mystax* from the area, which is a common species. Currently, *T. valenciennesi* has a known distribution from Myanmar to Sumatra, Java and Bali (western Indonesia)³³. Considering the distribution and the absence of voucher specimens for examination, the name was probably misapplied to *T. mystax* (Bloch & Schneider 1801) specimens.
 62. ***Thryssa vitirostris* (Gilchrist & Thompson, 1908)**: Hata & Motomura¹⁴² have redescribed *Thryssa vitirostris* and stated that its distribution is limited to the east coast of Africa and off Madagascar. The same work suggests that the Bay of Bengal specimens that closely resemble *T. vitirostris* are to be treated as *T. cultella* (Hata & Motomura, 2019).
 63. ***Trachinocephalus myops* (Forster, 1801)**: As proved by Polanco *et al.*¹⁴³, *T. myops* is no longer a circumglobal species but restricted to Atlantic waters, and the Indo-West Pacific species is to be known as *Trachinocephalus trachinus* (Temminck & Schlegel, 1846).
 64. ***Valamugil buchanani* (Bleeker, 1853)**: Bogorodsky *et al.*¹⁰³ restored the genus *Moolgarda*. Following genetic analysis, he previously named *Crenimugil buchanani*, which they redescribed as *Moolgarda tade* (Fabricius, 1775), a species originally reported from the Red Sea with a long history of taxonomic confusion. They proposed placing the following species described from India and Sri Lanka (*M. buchanani*; *M. ceylonensis* Günther, 1861; *M. malabarica* Shaw, 1840; *M. pedaraki*, Cuvier & Valenciennes 1836) in the synonymy with *Moolgarda tade*.
 65. ***Zebrias zebra* (Bloch, 1787)**: This was reported by Mishra *et al.*⁸⁹, whose identification largely followed Day⁴⁶⁻⁴⁹. Day⁴⁸ was erroneous in treating specimens of *Zebrias quagga* (Kaup, 1858) as *Z. zebra*, as evidenced by the synonymy given thereon. *Zebrias zebra* is distributed in the western Pacific region and does not occur in Indian waters, not even in the Andamans¹⁴⁴. Hence, the name *Z. zebra* is replaced here with *Z. quagga*.

66. *Acanthurus gahhm* (Forsskal, 1775): This species is endemic to the Red Sea and the Gulf of Aden. The report of this species from the Ganjam coast by Jenkins¹³⁹ is possibly a misidentification of some other similar-looking species. But without examining specimens, it cannot be ascertained.
67. *Acanthurus punctatus*: Jenkins¹³⁹ also named *A. punctatus* from the Ganjam coast without the author's name. The only *punctatus* in the family Acanthuridae is *Prionurus punctatus* (Gill, 1862), a synonym of *Prionurus laticlavus* (Valenciennes, 1846), known from the Eastern Pacific (Mexico, the Galapagos Islands). Obviously, this is unlikely to occur.
68. *Anguilla australis* Richardson, 1841: Jones & Sujansingani¹⁷ reported *A. australis*, a species known to inhabit the Southwestern Pacific, from the Chilika lagoon without specimen details or any taxonomic information. They might have mistaken it for *Anguilla bicolor* McClelland, 1844, which is closely similar. But without examining the specimen or a detailed description, it is impossible to assign it to any taxa.
69. *Apogon septemstriatus* Günther, 1880: Nagabhusanam & Rao¹⁴⁵ reported *Apogon septemstriatus* Gunther (error of *septemstriatus*, = *Ostorhinchus septemstriatus*), which is known to be distributed in the western Pacific (Indonesia to the Philippines, south to Australia) and so, unlikely to occur in our area. It is possibly a misidentification of *Ostorhinchus fasciatus* (White, 1790).
70. *Argyrosomus amoyensis* (Bleeker, 1863): No doubt this species occurs on the west coast of India, but has never been reported from the east coast. Pati *et al.*³⁰, though mentioned it from Odisha based on Appa Rao¹⁴⁶, it was not mentioned there. Hence, they are in error in including this name.
71. *Atropus aurochs* (Ogilby, 1915): The record of *Atropus aurochs* (as *Ulua aurochs*) from Odisha¹⁴⁷ is possibly a misidentification, as the species is known from north of Australia only. Furthermore, their report contains no taxonomic information, and there are no comparative DNA sequences available. Possibly the author's specimen is a young *Atropus hedlandensis* (Whitley, 1934), as indicated by their Neighbour-Joining tree.
72. *Dermogenys brachynotopterus* (Bleeker, 1853): The report of *Dermogenys brachynotopterus* from Odisha³⁰ at Puri is also questionable, as the species is known to inhabit brackish waters only. Further, this report was based on Madhavi⁴², whose fish identifications are questionable.
73. *Ethmalosa fimbriata* (Bowdich, 1825): This species is known only from the eastern Atlantic Ocean and is unlikely to occur on the Odisha coast. Madhavi⁴² surely misapplied this name to another Clupeoid fish, which could not be verified, as neither any taxonomic information about the species nor any voucher specimen deposited in any repository was available for examination.
74. *Halichoeres scapularis* (Bennett, 1832): Mostly found in shallow lagoons or bays to depths of 15 m, usually over sand, rubble, or seagrass bottom. The report of its occurrence in Chilika lagoon⁴² is doubtful.
75. *Hoplosebastes armatus* Schmidt 1929: Fricke *et al.*³³ observe that 'Bay of Bengal (India) records¹⁴⁸ are based on misidentification'. Hence, it is not included at present pending further investigation.
76. *Leiodon viridipunctatus* Day, 1865: This is possibly not a valid species. As per Fricke *et al.*³³, the current status of this species is uncertain. The helminth parasite workers^{36,42} refer to which species cannot be ascertained.
77. *Myripristis jacobus* Cuvier, 1829: This species is found in the Atlantic Ocean and unlikely to occur on the Odisha coast. Since the voucher specimens are unavailable for examination, the report by Barik *et al.*⁴⁹ seems unsubstantial.
78. *Planiliza klunzingeri* (Day, 1888): This species is known from the west coast of India and does not occur along the eastern coast. Its listing by Jenkins¹³⁹ from the Ckiliika Lake is probably a misidentification of some other species in the family Mugilidae.
79. *Pristipomoides argyrogrammicus* (Valenciennes, 1832): This species occurs on the southwest coast of India but is never reported from the east coast. Pati *et al.*³⁰ included this species based on Ahmad³⁹ and Madhavi⁴², whose identifications remain questionable.
80. *Psenes cyanophrys* Valenciennes, 1833: Based on the works of Gupta and Gupta⁴¹ and Madhavi⁴², Pati *et al.*³⁰ listed this species. Any

other worker never substantiated the occurrence of this species. Like other reports, this is also treated as doubtful.

81. ***Pseudodax moluccanus* (Valenciennes, 1840)**: It inhabits clear channels and seaward reefs. Juveniles are commonly found along drop-offs below 18 m. Adults are usually found near caves, while juveniles frequently live inside them. Although Madhavi⁴² listed it from the Odisha coast, it is unlikely to occur, though it has been reported from the southwest coast of India.
82. ***Rastrelliger brachysoma* (Bleeker, 1851)**: It is unlikely to occur along the east coast of India. Its report from Odisha coast^{42,89} is based on misidentification.
83. ***Scarus taeniopterus* Lesson, 1829**: This species is known to occur in the Atlantic Ocean and is unlikely to be available in Indian waters. Barik *et al.*¹⁴⁹ may have misidentified other *Scarus* species.
84. ***Scorpaenopsis cirrhosa* (Thunberg, 1793)**: The record of this species²⁹ seems to be a misidentification of another species, as it is currently known from the Northwestern Pacific.
85. ***Serranus indicus* (Cuvier & Valenciennes)**: There exists no species with such a combination of nomenclature. Pati *et al.*³⁰ mentioned this name following Madhavi⁴². Even if considered to have a spelling error, it is impossible to find which species they refer to.
86. ***Synodus indicus* (Day, 1873)**: Identification by Gupta & Gupta⁴¹ and Madhavi⁴² is doubtful, and this species has never been reported by any worker with taxonomic information.
87. ***Tenualosa reevesii* (Richardson, 1846)**: This species is known from the western Pacific (China Sea), and two specimens have been recorded from Phuket Island (Andaman Sea)¹¹⁹, and it is very unlikely to occur on the Indian coast. Pati *et al.*³⁰ listed this species from the Odisha coast based on the works of Madhavi⁴². Both these latter works provided no taxonomic information and no voucher specimens were available for verification.
88. ***Thunnus albacares* (Bonnaterre, 1788)**: Only the name of this species was reported in the trematode parasite paper^{40,42}. Given its doubtful identification, it is not included.
89. ***Tylosurus choram* (Rüppell, 1837)**: The report of *T. choram* from the east coast of India¹⁰⁶ seems to be erroneous as the species inhabits the Red Sea

to the Gulf of Oman, including the eastern Mediterranean, and most likely based on misidentification of some other species. In the absence of any taxonomic information, the status of the reported species cannot be ascertained.

90. ***Uranoscopus fuscomaculatus* Kner, 1868**: The record of *U. fuscomaculatus* from the Odisha coast¹⁴⁵ seems to be erroneous and unlikely to occur as it is presently known only from Vanuatu and Fiji.

✂ Apart from these 90 names, Pati *et al.*³⁰ included *Thryssa kammalensis* (Bleeker), mostly based on records from Chilika lagoon^{21,141}. In contrast, latter works confirm that Chilika specimens are *Thryssa kammalensoides* Wongratana, a similar species that is widely distributed along the Odisha coast¹⁵⁰, though *T. kammalensis* does occur on the northern coast of Odisha. The applicable name for the species previously treated as *T. malabarica*, having a deeper body, is *Thryssa cuvierii* (Swainson)¹⁴⁰. *Thryssa cuvierii* was originally described by Swainson⁵², based on an illustration shown in Russell (1802: Pl. 194, fig. 4A). Whitehead *et al.*¹⁵¹ regarded *T. cuvierii* as a junior synonym of *T. malabarica*. However, recently, Hata *et al.*¹⁴⁰ redescribed and resurrected *T. cuvierii*.

The interplay of geological events, climate, and ecological factors usually influences the distribution of animals. Fish distribution is shaped by geological history, evolutionary adaptation, and habitat availability. Occurrence of a fish species outside its normal zoogeographic distributional range is always questionable. For the detailed causatives mentioned above, none of these 90 names should be considered as occurring along the Odisha coast. Hence, to avoid the above scenarios of mistaken identity, the new reports should be supported by strong documentation (including clear photographic images/line drawings depicting all visible morphological features and relevant morphometric measurements), followed by the deposition of voucher specimens in designated zoological collections.

Conclusion

The exhaustive checklist presented in this study documents 778 species belonging to 402 genera, 143 families, and 36 orders in three classes from the marine and coastal waters of Odisha. The elaborate and comprehensive data provided here will help students, researchers, fishery managers, conservation

workers, and educationalists in their respective fields and also contribute to the conservation, management, and sustainable utilisation of fish resources.

Supplementary Data

Supplementary data associated with this article is available in the electronic form at [https://nopr.niscpr.res.in/jinfo/ijms/IJMS_54\(11\)604-627_SupplData.pdf](https://nopr.niscpr.res.in/jinfo/ijms/IJMS_54(11)604-627_SupplData.pdf)

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Conflict of Interest

The authors declare no competing interests.

Ethical Statement

The manuscript is prepared based on a literature review. Therefore, this study poses no ethical concerns.

Author Contributions

SRM & SSM: Data collection, review, conceptualisation, checklist preparation, manuscript design and writing; RKB, SA, RKP, SR, DR, & TKST: Checklist preparation, additional data preparation, formatting and corrections; SRM, SSM, LP, JKS, & AM: Critical analysis, manuscript correction and improvement.

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