

REEF FISHES OF SAINT MARTIN'S ISLAND BANGLADESH

An identification book with DNA barcodes

Reef Fishes of Saint Martin's Island, Bangladesh
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'Reef Fishes of Saint Martin's Island, Bangladesh: An identification book with DNA barcodes' is the first book exclusively devoted to the coral-associated and rocky reef fishes of North-eastern Bay of Bengal, Bangladesh. The book contains short description with colour photographs of 140 species under 55 families found in the Saint Martin's Island along with information on their habitats, distribution and global conservation status. Among them 37 species of reef fishes are recorded for the first time in Bangladesh and one is discovered as a species new to the science during the current study. DNA barcodes (COI and/or 16S rRNA gene) of 103 species of reef fishes are reported in this book as well. In addition, a list of reef-associated fishes reported so far from the marine waters of Bangladesh other than the present study is also provided in a summary table which includes a total of 162 species under 54 families. Considering all the recorded fishes including the present study, the total number of reef associated fishes of Bangladesh currently stands at 302 belonging to 72 families.

The book is expected to serve as a baseline reference on the reef fish fauna of Bangladesh. It will be useful for future ichthyodiversity study in this region, as well as formulation of conservation plans of this unique ecosystem in Bangladesh coast of North-eastern Bay of Bengal.

Reef Fishes of Saint Martin's Island, Bangladesh

An identification book with DNA barcodes

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Reef Fishes of Saint Martin's Island, Bangladesh

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PREFACE

Coral reefs are the most diverse of all marine ecosystems. Occupying less than one percent of the ocean, coral reefs are home to more than twenty-five percent of known marine species. Fishes and other organisms get shelter, find food, breed, and rear their young in the coral reefs. Saint Martin's Island is the only island in Bangladesh that supports rocky reefs and coral communities with reef associated floral and faunal diversity. This Island was declared as Ecologically Critical Areas (ECA) in 1999 to protect its rich and unique biodiversity from destructive anthropogenic activities. There are a few studies on the biodiversity of coral and associated marine organisms of this rocky island which were methodologically conducted and are inclusive. The book `Reef Fishes of Saint Martin's Island, Bangladesh: An identification book with DNA barcodes' presents an updated inventory of coral associated and rocky reef fishes of Saint Martin's Island of Bangladesh assessed by the primary survey of authors. The book provides a reference DNA barcode library of reef fishes for the first time in Bangladesh which will be useful for future conservation of reef fish diversity of the country. The book illustrates a total of 141 species of reef fish with clear photographs unveiling their taxonomic features. A total of 103 species are reported with their DNA barcodes. The book provides about 39 species of coral associated fish which have been detected as new distributional records in Bangladesh's marine water and one new species to science. This book would serve as a comprehensive field guide to fish taxonomists, marine biologists, biodiversity watchers, naturalists, and resource managers in the respective fields.

Prof. Dr. Kazi Ahsan Habib
Principal Investigator & Lead Author
Department of Fisheries Biology and Genetics
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Sher-e-Bangla Agricultural University

May, 2021

MESSAGE

Coral reefs form complex ecosystems with tremendous biodiversity. They provide habitat, feeding, breeding and nursery ground for many marine fishes. Maintaining coral reef habitat is essential for the availability of the fishes in the sea. Having good understanding on the coral ecosystem and the associated reef fishes would help us to conserve the reef habitat along with the fish stocks dependent on it.

Saint Martin's Island, to the southernmost part of Bangladesh, is the only island in the country that incorporates coral growth with complex and diverse marine life. I am very pleased to know that 'Reef Fishes of Saint Martin's Island, Bangladesh: An identification book with DNA barcodes' is the first photographic and illustrative book exclusively on coral associated and rocky reef fishes of Bangladesh. I hope, this book will serve as a reliable updated reference guide for morphological and DNA based identification of reef fishes of Bangladesh for students of marine biology, oceanographers, scuba divers, ecologists, researchers and academia who are actively involved in the field of marine biology, fisheries, aquatic biodiversity and marine conservations.

I would like to pay heartfelt thanks to Bangladesh Agricultural Research Council (BARC), Korea Institute of Ocean Science and Technology (KIOST), DRMREEF project of the IOC Sub-Commission for the Western Pacific (WESTPAC) for funding and supporting such important work on the coral associated fishes of Saint Martin's Island and for publishing this book.

I highly appreciate Prof. Dr. Kazi Ahsan Habib, Dean, Faculty of Fisheries, Aquaculture and Marine Science, SAU and his team for conducting research and publishing this valuable book on reef fishes of Bangladesh with high resolution colorful photographs, morphometric characters and DNA barcodes which will enable the users for accurate identification of the coral-associated fishes often having cryptic colouration.

Prof. Dr. Md. Shahidur Rashid Bhuiyan
Vice Chancellor
Sher-e-Bangla Agricultural University

May, 2021

MESSAGE

The subtidal rocky habitats and coral colonies of the Saint Martin's Island (SMI) is one of the most productive natural ecosystems in the marine area of Bangladesh, and support diverse fish resources and other fascinating multi-colored fauna. But any comprehensive publication on the coral associated fishes of Bangladesh inhabiting the reef environment of SMI is so far not adequately available.

We are happy to support in publishing this book from Bangladesh Agricultural Research Council (BARC) presenting a comprehensive account of the great diversity of reef fishes of this beautiful island. I hope this illustrated book with color photographs and brief notes on identifying characters of fishes would serve as a valuable field guide to the ichthyologists and conservationists of the country.

I believe that the book will contribute to future study and effective management of the marine ecosystem of this tiny but highly resourceful island of Bangladesh. Combination of morphological and molecular data (i.e. DNA barcodes) of coral associated fishes provided in the book will significantly enhance our scientific knowledge about marine life of SMI.

I congratulate all of the authors and researchers with especial appreciation to Prof. Dr. Kazi Ahsan Habib who gave the hard efforts to compose this book for cataloging and contributing to conservation of the reef fish diversity of Bangladesh.

Dr. Shaikh Mohammad Bokhtiar
Executive Chairman
Bangladesh Agricultural Research Council (BARC)

May, 2021

MESSAGE

I am greatly pleased to hear the news that the Department of Fisheries Biology and Genetics of the Faculty of Fisheries, Aquaculture and Marine Science, Sher-e-Bangla Agricultural University (SAU) is going to publish its 2nd book on marine biodiversity of Bangladesh, 'Reef Fishes of Saint Martin's Island, Bangladesh: An identification book with DNA barcodes', sharing with KIOST to raise a special attention to reef associated ecosystem and fish diversity in Bangladesh.

The Korea Institute of Ocean Science and Technology (KIOST) promotes support and cooperation with other government agencies, universities and private industries towards the research and development of marine resources and protection of the ocean environment. In 2015, KIOST established relationship with the Faculty of Fisheries, Aquaculture and Marine Science, SAU with signing a memorandum of understanding (MoU) as a part of international collaboration. KIOST has provided support to develop Aquatic Bioresource Research Lab (ABR Lab) in SAU for conducting state-of-art research on marine biodiversity and aquatic ecosystem in Bangladesh.

KIOST will be always cordial and happy to facilitate various technical support and assistance to strengthen ABR Lab as well as SAU. I am sure that SAU will contribute more in future to the fisheries and marine research and development of Bangladesh.

I trust this book will provide useful information to the fisheries and marine scientists, scholars, researchers, students and also fish lovers of Bangladesh. I am very proud of Prof. Kazi Ahsan Habib, the lead author of this book, who received Ph.D. from the University of Science and Technology (UST) in the campus of KIOST. He is making significant contribution to the marine biodiversity research and conservation in Bangladesh.

I wish further success of ABR Lab and its research team as well as the Faculty of Fisheries, Aquaculture and Marine Science of SAU. Once again, congratulations on the publication of this valuable book.

Dr. Woong-Seo Kim
President
Korea Institute of Ocean Science and Technology (KIOST)

May, 2021

MESSAGE

The marine fisheries sector has been marked as an important part of the creating income generation as well as economy of Bangladesh. The maritime boundary of Bangladesh with the neighboring countries Myanmar and India up to 200 nautical miles from the coastline comprises of 11.88 million hectares of maritime waters having huge potential for marine fisheries in artisanal, industrial and coastal sub-sectors. Inside the marine area of Bangladesh, there is only one small rocky island in the north eastern part of the Bay of Bengal namely 'Saint Martin's Island', locally known as 'Narikel Jinjira'. This is the only island in Bangladesh which supports diversified coral colonies and a variety of life forms, and thus, can be said to be the rainforest of Bangladesh's sea. This island is habitat to many marine fishes and provides support as their feeding, breeding and nursery ground. In addition, a fascinating array of large number of associated animal groups like crustaceans, cnidarians, sponges, echinoderms, mollusks, worms, aquatic mammals, etc. are also available here. There is, as yet, no books with pictorial views are available on the corals and their associated fishes of this island. So, I thank the authors to produce this illustrated book entitled `Reef Fishes of Saint Martin's Island, Bangladesh: An identification book with DNA barcodes.'

This is the ever first illustrative book that contributes as a part of initiative to learn and take action to save the reef fish biodiversity of Bangladesh. It will encourage the people including travelers to protect the marine environment, and the fabulous biodiversity it contains. Simultaneously, it will also address the needs of protection of marine bioresources for future generations.

I hope that this book will help to understand the marvels of reef ecosystem for naturalists, biologists, academicians, researchers and other relevant personnel.

Dr. Md. Monirul Islam
Member Director (Fisheries)
Bangladesh Agricultural Research Council (BARC)

May, 2021

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We would like to express our sincere gratitude to Prof. Dr. Md. Shahidur Rashid Bhuiyan, Honorable Vice Chancellor of Sher-e-Bangla Agricultural University (SAU) for his valuable advice and encouragement for publication of this book. We are also thankful to Prof. Dr. Md. Nazrul Islam, Treasurer and Prof. Dr. Md. Abdur Razzaque, Director (Research) of SAU, for providing guidance and support.

We would like to extend our sincere thanks and appreciation to Dr. Shaikh Mohammad Bokhtiar, the Executive Chairman of BARC, for his continuous support and to Dr. Md. Monirul Islam, the Member Director (Fisheries), BARC and Dr. Md. Kabir Ikramul Haque, former executive Chairman of BARC, for their kind cooperation in preparing this book.

We are extremely thankful to Dr. Tomas Tomascik, a coral reef ecologist and one of the eminent pioneers on the environmental and ecological study of Saint Martin's Island, for his review and editing of some sections, especially the habitat and ecological description of the island in the Introduction chapter of the book.

We are very thankful to Mohammad Eusuf Hasan, Scientific Officer, Marine Fisheries Survey Management Unit, DoF, Cox's Bazar, for his cordial cooperation during making checklist of reef-associated fishes of Bangladesh. Our special thanks goto Mrs. ShilpiSahafor contributing a few fish photographs. We would like to thank Md. Habibur Rahman, the field assistant of the project, and those people from various organizations who helped us during our sampling, field survey, research and publication of the book.

We hope this book would be helpful to the scientists of fisheries sector from home and abroad in their future research. It would also assist the policymakers of aquatic wildlife and fisheries sectors in setting future conservation strategies and research directions.

Authors
May, 2021

ACRONYMS

%	Percent
°C	Degree Celsius
16S rRNA	16s ribsomal RNA
A	Anal Fin
ABR Lab	Aquatic Bioresource Research Lab.
BARC	Bangladesh Agricultural Research Council
BLAST	Basic Local Alignment Search Tool
BOLD	Barcode of Life Database
C	Caudal Fin
CBD	Convention on Biological Diversity
COI	Cytochrome c oxidase subunit I
CRG	Competitive Research Grants
D	Dorsal Fin
D_1	First Dorsal Fin
D_2	Second Dorsal Fin
DNA	Deoxyribonucleic Acid
E	East
ECA	Ecologically Critical Area
FAO	Food and Agriculture Organization
IUCN	International Union for Conservation of Nature
LLp	Lateral Line Pored Scales
ml	Millilitre
mm	Millimetre
MPA	Marine Protected Area
mtDNA	Mitochondrial DNA
N	North
NATP	National Agricultural Technology Program
NCBI	National Center for Biotechnology Information
NJ	Neighbour Joining
P_1	Pectoral Fin
P_2	Pelvic Fin
PCR	Polymerase Chain Reaction
PIU	Project Implementation Unit
RNA	Ribonucleic Acid
SAU	Sher-e-Bangla Agricultural University
SMI	Saint Martin's Island
UPC	Universal Product Code
USA	United States of America
UV	Ultraviolet

CONTENTS

INTRODUCTION 016

REEF FISH HABITATS ON SAINT MARTIN'S ISLAND 019

Rocky and sandy intertidal habitats 019
Shallow-water hard coral habitats 021
Subtidal rocky reef habitats 022
Mixed seaweed-seagrass beds 023
Soft coral habitats 024
Soft-bottom habitats 025

METHEDOLOGY 027

Collection of samples 027
Underwater visual census 027
Photography of collected fishes 028
Preservation of specimens 029
Morphological identification 030
Molecular characterization by DNA barcoding 031
Protocols of DNA barcoding 032

HOW TO USE THIS BOOK 034

FISH SPECIES PROFILE 036

REFERENCES 246

APPENDICES 252

Appendix-I: List of reef fishes reported from Saint Martin's Island, Bangladesh in the present study. 252

Appendix-II: List of reef associated fishes reported from Bangladeshi marine waters other than the present study. 258

Appendix-III: List of reef associated fishes reported from Bangladeshi marine waters but excluded from the list provided in Appendix-II, for their (apparent) misidentification. 264

Appendix-IV: Data sheet used for keeping records of morphological and morphometric analysis 266

INDEX 268

GLOSSARY 272

INTRODUCTION

Reefs are rocky substrates (abiogenic) and/or biogenic structures (e.g.coral reefs, oyster reefs), found at depths ranging from intertidal to subtidal where there is an uninterrupted zonation of plant and animal communities (Castro et al., 2004). Coral reefs are underwater ecosystems built by reef-building corals and other calcifying organisms. Reef-building corals are colonial organisms that form colonies made up of hundreds of coral animals, which are small anemone-like polyps held together within a calcium carbonate skeletons. Coral reefs generally develop in clear and usually oligotrophic waters at depths of up to 40 m, and in the more turbid coastal waters where vigorous reef growth is restricted to depths of less than about 15 m (Tomascik et al., 1997). Coral reefs are complex and productive ecosystems that support the highest biodiversity of any marine ecosystem. The number of species that coral reefs support worldwide has been estimated to range from 0.6 to over 9 million (Bouchet 2006). This diversity is concentrated in the central Indo-Pacific (i.e., Coral Triangle) and decreases with increasing distance from the Indo-Australian archipelago (Plaisance et al., 2011). Coral reefs are often called rainforests of the sea. With their varied morphologies, ranging from branching to massive, coral colonies provide substrate, shelter, and food resources for many reef organisms such as fish and invertebrates. The diversity of coral forms increases the structural complexity of reefs themselves, which in turn increases reef fish abundance, biomass, diversity and trophic structure that consequently reduces predation risk (Graham and Nash 2013). Reef fish families such as Blenniidae, Chaetodontidae, Pomacentridae, Scaridae and Tetraodontidae are closely associated with coral structure. This association can range from corallivorous (i.e. feed on live coral tissue) feeding behavior to using the spaces generated by coral colonies for shelter, protection or breeding. Additionally, few cryptobenthic fishes from the genus Gobiodon are greatly dependent on branching corals, since their entire post-settlement life-cycle stage is associated exclusively with branching corals from the genus Acropora (Leal et al., 2013). Two families of coral reef fishes have widespread commercial importance viz. Serranidae (groupers and sea basses) and Lutjanidae (snappers).

The coastal waters of Bangladesh, along the northern end of the Bay of Bengal, exhibit high levels of turbidity and salinity fluctuations which prevent coral reef development. This region of the Bay of Bengal is under the influence of the Ganges-Brahmaputra-Meghna (GBM) river system with high freshwater discharge and heavy sediment load. The combined sediment discharge of the GBM river system is among the world's largest, representing about 6% of the world's total sediment input

into the oceans by rivers (Spalding et al., 2001). The sediments that are discharged into the coastal marine environment are then transported by coastal currents. In these relatively turbid coastal waters of the northeastern Bay of Bengal, about 9 km south of the mouth of the Naf River (Figure 1), there is a small island namely Saint Martin's Island (locally known as 'Narikel Zinzira'). Situated at the southern-most tip of Bangladesh the island lies between latitudes 20°34´ - 20°39´N, and longitudes 92°18´ - 92°21´E. The land area of the island during low and high tides is about 8 km^2 and 5 km^2, respectively. Including the rocky platforms extending into the sea the total area of the island is about 12 sq. km (Thompson and Islam 2010). Saint Martin's Island is the only island in Bangladesh that supports flourishing scleractinian coral communities, and reef associated flora and fauna. Since coral deposits do not form the base rock of Saint Martin's Island, then technically, the island is not a 'coral island' as popularly believed. The base rock of this island was formed millions of years ago and consists of tertiary age sandstone. The scleractinian coral communities in these waters have survived for centuries despite their struggle with seasonal monsoons and turbid water. Eighty-one (81) hard coral species from 22 genera (Islam et al., 2019) have been recorded in this island and the most abundant coral species are *Porites* spp., *Acropora* spp., *Favites* spp., *Goniopora* spp., *Cyphastrea* spp. and *Goniastrea* spp. (Mollah 1997). There are no true coral reefs around this island, but flourishing coral communities are found in shallow waters along with seagrass beds, soft coral habitats and rocky habitats. Coral communities extend upto 200 meters offshore from the lower intertidal. Coral communities of Saint Martin's Island, while relatively diverse, represent only a small percentage of the bottom substrate. Off the south-eastern tip of the island, where corals are most abundant, coral cover represents only 8.8% of the bottom substrate, with coral densities of 1.3 colonies/m^2 (Tomascik 1997).

Only a few studies have been exclusively carried out on the coral associated fish diversity of Saint Martin's Island. However, these studies were not definitive since they were not conducted using standard methods with underwater observations. Since 1997, only few scholars published scientific articles, conference papers, project reports or books on faunal diversity of Saint Martin's Island. Among them, only few authors mentioned the actual number of coral associated fish along with their valid names. This short coming is due primarily to lack of in-depth research based on morphological and genetic identification. However, some of the reports can be considered as valid references, viz. Tomascik (1997), Rahman et al. (2009), Hussain et al. (2010) for serving as a baseline for the number of coral associated fish species found in this small coral reef habitat. Tomascik (1997) characterized Saint Martin's Island's fish diversity as low to moderate when compared to coral reef habitats in a global context. He reported 86 species of coral associated fish under 34 families by visual counts, and

at least 100 additional species will be found once more research is conducted. Hussain et al. (2010) recorded 37 species of coral associated fish through underwater survey by SCUBA diving in the shallow coral communities and adjacent subtidal rocky habitats of Saint Martin's Island.

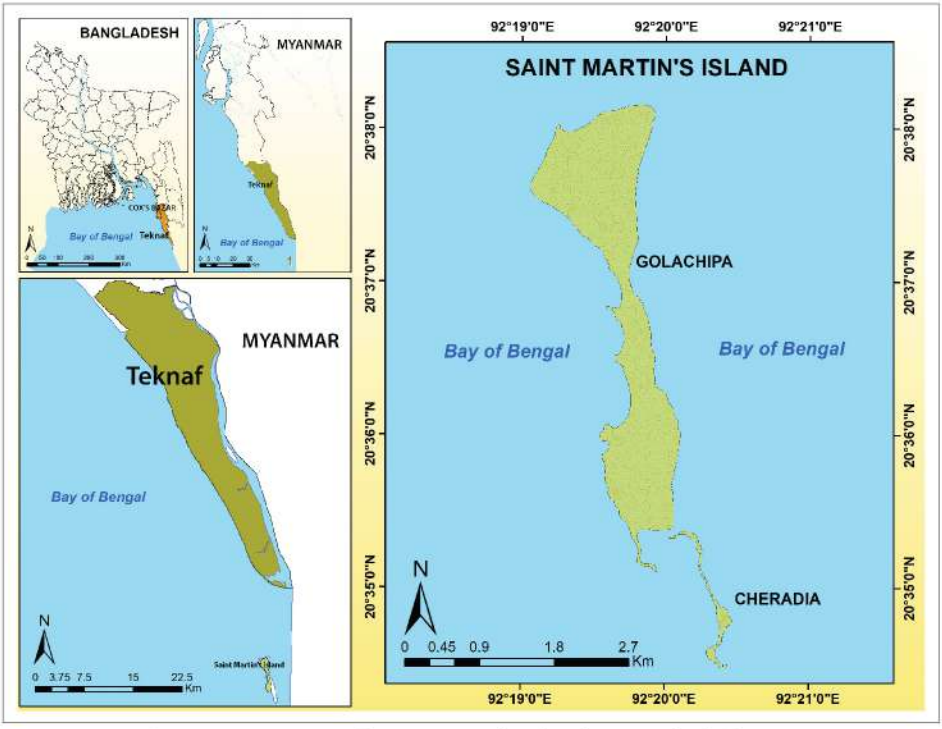


Figure 1. Location of Saint Martin's Island in Bangladesh.

REEF FISH HABITATS ON SAINT MARTIN'S ISLAND

The Saint Martin's Island (SMI) is located on a shallow continental shelf with a maximum depth of 25m. The maximum depth of the island shelf is only 10m. The main shoreline habitats are sandy beaches and dunes. The shallow-water marine habitats are as follows (Tomascik 1997):

Rocky and Sandy Intertidal Habitats

The intertidal zone or littoral zone of Saint Martin's Island is made by rocky cliffs and sandy beaches which are exposed at low tide and underwater during high tide. The maximum elevation of the island is around 6.5m above sea level at cliffs along the eastern coast of the island (plate 1-3).



Plate 1: Rocky upper intertidal zone in SMI



Plate 2: Mixed rocky and sandy intertidal zone in SMI



Plate 3: Sandy beach in SMI

Shallow-water Hard Coral Habitats

Hard corals, also known as scleractinian corals or stony corals or reef building corals belong to the order Scleractinia of the phylum Cnidaria. They produce a rigid skeleton made of calcium carbonate ($CaCO_3$) in crystal form called aragonite. Colony of hard corals consists of thousands of individual polyps which are cemented together by the calcium carbonate skeletons they secrete. A total of 98 species of hard corals of 18 families and 37 genera have been reported until now in Saint Martin's Island (Habib and Islam 2021). The genera *Acropora, Favites, Goniopora, Montiporaand Turbinaria* are the most abundant. Plate 4 shows a lower intertidal coral habitat zone in SMI.



Plate 4: Lower intertidal coral habitat zone in SMI

Subtidal Rocky Reef Habitats

The rocky subtidal habitats extend from the seaward margin of the intertidal zone to about 1,000 m offshore and support a diverse coral community (plate 5). The subtidal rocky reefs on Saint Martin's Island are composed of sedimentary rocks which are always submerged, even at low tide. The rocky reefs in both deep and shallow waters of Saint Martin's Island provide an essential substratum of many plants especially different seaweeds and animals such as sea fans, sea anemones, Christmas tree worms, oysters etc. The rocky reefs are home to many coral-associated fishes such as groupers, parrotfishes, butterflyfishes and others. In the southern part of Saint Martin's Island, coral communities are denser and more diverse than other part of the island. In general, the rocky subtidal zone of Saint Martin's Island extends up to 200 to 500 meters seaward from the edge of the lower intertidal and supports diverse coral communities (Tomascik 1997).



Plate 5: Subtidal rocky reef in SMI

Mixed Seaweed-seagrass Beds

Several different species of marine flowering plants (angiosperms) known as the seagrasses are also found on Saint Martin's Island. However, it's the seaweeds that dominate the rocky substrates. Unlike the seagrasses, seaweeds are benthic macroalgae that lack true leaves, stems, and roots. Mixed seaweed and seagrass beds are found in both intertidal and subtidal habitats around the Saint Martin's Island. Plate 6 clearly shows a macroalgal assemblage. These habitats are important nursery habitats for several species of reef fishes and invertebrates. Several species of reef fishes forage in seagrass beds during the night and return to the protection of the reefs during the day.



Plate 6: Seaweeds beds in SMI

Soft Coral Habitats

The soft corals belong to the macro invertebrates order Alcyonacea of phylum Cnidaria with absence of massive skeleton structure or internal axis. Unlike reef building corals they do not have calcareous exoskeleton, whereas they have minute spiny skeletal elements known as sclerites (plate 7). Soft coral colonies look like trees, bushes, fans, whips, and grasses. Most of the soft coral species in the island occur deeper than 2m. The dominant families of soft corals on SMI are: 1) gorgonian sea fans (e.g. Plexauridae, Melithaeidae, Subergorgiidae); 2) small sea fans (Anthothelidae); and 3) sea whips (Ellisellidae) (Tomascik 1997; Habib et al., 2021). Fishes associate with soft coral in different ways including as shelter, a food source or a surface for sourcing epiphytic food (Epstein and Kingsford 2019).



Plate 7: Soft coral (sea fan) habitats in SMI

Soft-bottom Habitats

Saint Martin's Island has a number of soft-bottom habitats that are dominated by unconsolidated sediments. These habitats include beaches, mud flats, shoals, holes, and sandbars (plate 8). The unconsolidated sediments found in the soft-bottom habitats are constantly being moved by bottom currents and wave action along the bottom from one area to another. Soft-bottom environments provide habitats for many marine animals to burrow, forage and spawn. Many marine organisms like rays, flatfish, gobies, marine crustaceans, hermit crabs and gastropods are found in soft-bottom habitats. These soft-bottom habitats are particularly important foraging grounds for a number of different coral-associated fish species like the lionfish, scorpionfish, croaker, gobies, etc.



Plate 8: Soft-bottom habitat in SMI

The 'Reef fishes of Saint Martin's Island, Bangladesh: an identification book with DNA barcodes' is a reference book which contains information on 142 species of coral associated fish belonging to 55 families. The book describes 39 new records of reef associated fish as new distributional records for Saint Martin's Island, as well as Bangladesh. Species information has been provided based on published literature and the knowledge and experience gathered by the authors. For species description, morphological characteristics, habitats, distribution and individual's DNA barcode have been included. We have incorporated taxonomic keys of a family with typical pictorial representation at the beginning of a family when species descriptions belonging to that certain family have started. Detailed underwater studies on behaviour of reef fish and their population dynamics are lacking in Bangladesh. In this book, a number of underwater pictures of fish species have been used that were captured during reef surveys at several sites by professional SCUBA divers under the direction of Prof. Dr. Kazi Ahsan Habib. These surveys revealed that Saint Martin's Island still has a higher diversity of reef fishes than is presented in this book. The surveys conducted for this book were not long enough to allow for collection of all fish species found on Saint Martin's Island. More underwater exploration is needed to fully understand the unique diversity of the island.

METHODOLOGY

Collection of Samples

Fish samples were collected from Saint Martin's Island which is located at the southern most tip of Bangladesh in the Bay of Bengal, roughly between 20°34'-20°39'N and 92°18'-92°21'E. Fishes were collected from the local fishermen who caught fish by angling and setting gill net on the stony corals, bold and rocky reefs of the island.

Underwater Visual Census

Underwater visual census methods by snorkeling and scuba diving were used to monitor fish species and capture photographs, videos and recording other information. Necessary fish species were trapped and caught for laboratory analysis. Underwater visual census was possible when visibility was adequate. When the water was too turbid and/or there was low light (e.g. in cloudy weather or windy days), it was difficult to see the fish. Although scuba diving is one of the most useful methods to observe brilliantly colored reef fishes, their behavior and habitats can also be seen nearly in the surface within the help of mask and snorkel that are affordable to the general people (Plate 9-11B).



Plate 9: Preparation for sampling by scuba diving



Plate 10: Underwater visual fish census by Snorkelling



Plate 11A: Underwater visual census by scuba diving



Plate 11B: Underwater visual census by scuba diving

Photography of Collected Fishes

Proper capturing of photographs of a fish is useful for identification and understanding their colour pattern. Colours of fish become fade rapidly after death. Photograp were taken as soon as possible after collecting the specimen. After collection of fish specimen, a photo was taken in a way that were clearly visible on the suitable background colour sheet/board. The fish was photographed on its left side with the fins well extended. For that, needles can be used to pin them. The specimen with closed mouth was photographed. If the mouth of the specimen was found open, the mouth was made closed by using pin with the help of needles. By using a fine-bristle brush, full strength 40% formaldehyde (formalin) was applied on the stretched fins. Removing the pins after few minutes, the fins were remain erect permanently. A ruler was kept in the length of the fish that helped to calculate the measurement. A label written with its specimen voucher on tag paper or waterproof paper with details of date, locality, habitat, name of collector etc. was kept along with the specimen. The specimens were kept in low shaded light and then photographs of the fish were taken by the digital camera according to Randall (1961) Emery and Winter bottom (1980). Photos of dorsal and lateral views were taken for Carcharhiniformes, Dasyatidae, etc. Other fishes with strongly depressed bodies (Dasyatidae, Platycephalidae, etc.) were photographed from dorsal view. Fishes with chin barbels (e.g., Mullidae) were photographed with the barbels exposed. Close-up photos of important diagnostic characters such as rostral ridges and inner part of pectoral fin in Scaridae; shape of esca in Antennariidae, etc. were also taken.



Plate 12: Sample preparation for taking photograph



Plate 13: Sample preparation for taking photograph

Preservation of Specimens

There is lack of well-developed technique to preserve the natural colours of fish for longer periods. The natural colours of the fish fade away quickly after death. The collected fishes were frozen immediately after collection for subsequent study. Specimens were washed by water to clean off any mud or sand. Before the specimen fixation in formalin tissue samples small piece of muscle tissue was cut and stored in a sterile 1.5 ml tube containing 98% alcohol for subsequent molecular work. Fish specimens were fixed in a natural posture to keep the bodies straight and close the open mouths and arrange the fins prior to fixation. Prior to long-term preservation specimens were fixed as soon as possible to prevent further breakdown of tissues. Formalin was used as the fixative which is widely available. The fish specimens were preserved in 100% formalin solution diluted by water 45-50% formaldehyde. After few days, the specimens were transferred to 75% ethyl alcohol and the jars were kept air tight. A label written with permanent marker/pencil on tag paper with details of capture data such as date, locality habitat, name and kept together with the specimen.

Morphological Identification

Accurate species level identification was carried out at ABR Lab. investigating morphological and morphometric characters following Fish identification sheets of FAO, Rahman et al. (2009); Rao (2003); Rao and Devi (2004); Rao (2010); Barman and Mishra (2009); Ranjan (2001), Barman and Mishra (2005); Kuiter and Tonozuka (2001) (Part 1, 2, 3); Allen (2000), etc. All the morphological and morphometric characters observed for each specimen were written in the premade data sheet (Annexure iv). The whole-body specimens were preserved and stored in the ABR Lab. of Department of Fisheries Biology and Genetics, SAU.

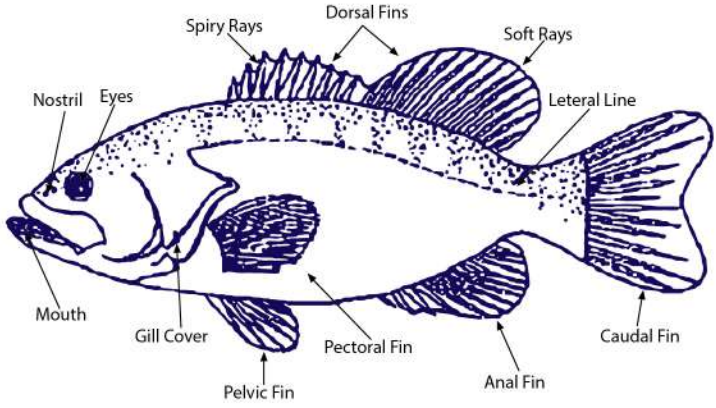


Figure 2. Outline features of a fish

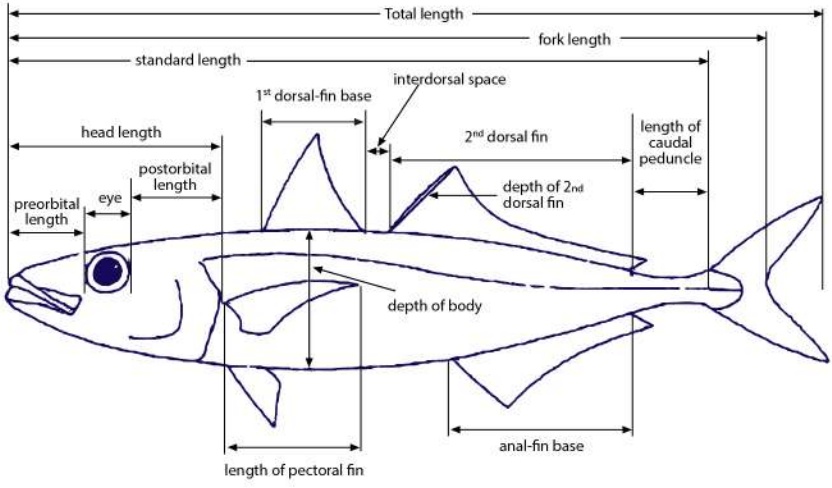


Figure 3: Morphological measurements of fish (Lateral view)

Molecular Characterization by DNA Barcoding

Our current knowledge of species identification is based almost exclusively on the recognition of morphological variability. Unfortunately, described morphological characters which differentiate species are not easily discerned by non-specialists and sometimes misidentified. In order to strengthen the taxonomy, and to speed up documentation and understanding of the animal diversity, Hebert et al. (2003) used DNA barcoding techniques where 650 nucleotide bases of 5` region of cytochrome c oxidase subunit 1 gene (COI) sequence of mitochondrial genome act as a marker for species identification of particular organism. Another one gene, mitochondrial 16S rRNA is also used to identify species in DNA taxonomy. DNA barcode is used to identify different species, likely the same procedure by supermarket scanner uses the familiar black bands of the Universal Product Code (UPC) to identify purchased product. DNA barcoding appears to be a promising approach for taxonomic identification. This is fast, reliable and accurate characterization across all life stages and species. Different molecular methods like DNA-barcoding enable the quick identification of species when the recognition of diagnostic characters is not possible or quite confusing. That also enhance the morphological methods to confirm the species identification accurately. This will enhance online access to information about species and enable a broadly applicable reference database that is essential for performing DNA-based identifications on samples of unknown identity. Therefore, traditional taxonomy and DNA barcoding should not be treated as antagonistic methods, rather as complementary approaches for resolving the phylogeny, taxonomy and nomenclature of living organisms (Packer et al., 2009; Taylor & Harris, 2012). The brief DNA barcoding procedure is shown in the following flow diagram.

Protocols of DNA Barcoding

Genomic DNA was extracted from the collected muscle/fin tissue using a commercial DNA extraction kit following the protocol provided inside kit box. The concentration of genomic DNA was then measured by Qubit 3.0 fluorometer. Then the extracted DNA was stored in-20°C for further use. Polymerase Chain Reaction (PCR) was performed in a 25µl reaction mixture in small reaction tubes (0.2 ml) in PCR Thermal cycler. The mitochondrial (mtDNA) COI barcode region and/or partial 16S rRNA gene region of morphologically identified specimens was amplified for DNA barcoding and molecular identification using the primer sets and thermal profile given in Table 1. PCR products were visualized on 1% agarose gel stained with ethidium bromide in gel documentation chamber (Model: Syngene InGenius^3). The flow UV-ray is kept on to watch the band in the connected computer by using GeneSys software. PCR samples with a single and clear visible band were purified with a commercial PCR Purification Kit for sequencing. The concentration of the purified DNA was estimated with the help of Qubit 3.0 fluorometer. Sequencing was conducted with the PCR primers by Sanger standard method in a normal automatic sequencing (Model 3730xI DNA analyzer) at Macrogen Inc. (Korea). Nucleic acid sequences were edited by using the Software Geneious 9.1.5 with the help of Chromas Lit. The obtained consensus sequences were edited based on the chromatogram peak clarities. Sequences were matched using BLAST search engine provided by NCBI and BOLD database. Finally, the good sequences were submitted to the NCBI GenBank. For analysis, final consensus sequences were aligned by using the alignment explorer of the MEGA6. Illustrative DNA barcodes were generated by using BIO-RAD (http://biorad-ads.com/DNABarcodeWeb/). A flow diagram of DNA barcoding procedure is shown in the following flow diagram.

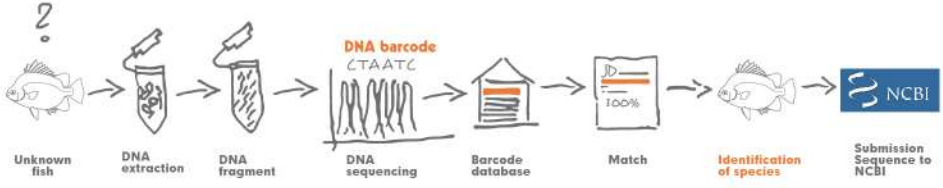


Figure 4: Systematic process of DNA barcoding

Table 1. List of primers and their thermal profile used at ABR Lab.

Name of Primer Set		Direction	Reference	Thermal Profile
COI Primer				
Fish F1 Fish R1		Forward Reverse	Ward et al., 2005	95°C (2m), 94°C (40s), 35 cycles 54°C (40s), 72°C (1m) with final extension at 72°C for (10 min)
Fish F2 Fish R2		Forward Reverse	Ward et al., 2005	95°C (2m), 94°C (40s), 35 cycles 54°C (40s), 72°C (1m) with final extension at 72°C for (10 min)
VF2_t1 FR1d_t1	Primer cocktails	Forward Reverse	Ivanova et al., 2007	95°C (3m), 95°C (30s), 35 cycles 57°C (40s), 72°C (1m) with final extension at 72°C for (10 min)
FishF2-t1 FishR2-t1		Forward Reverse		
16S rRNA Primer				
16Sar-5′ 16Sbr-3′		Forward Reverse	Palumbi, 1996	94°C (3m), 94°C (30s), 35 cycles 52°C (40s), 72°C (1m) with final extension at 72°C for (10 min)

HOW TO USE THIS BOOK

IUCN global Red List status 1

Local name (Bangla name) 2

English name 3

Photograph of species 4

IUCN Red List categories (Symbol)

- CR **Critically Engendered**
- EN **Engendered**
- VU **Vulnerable**
- NT **Near Threatened**
- LC **Least Concern**
- DD **Data Deficient**
- NE **Not Evaluated**

Standard length 5

Author citation 6

Scientific name 7

Meristic features (Fins) 8

Systematic position 9

Number of bones just below the operculum that support the gill membrane. 10

Map showing reported locations (red dots) of the species based on the information of FishBase/GBIF 11

Major identifying characters 12

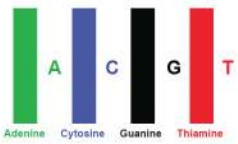
First report in Bangladesh from present study 13

GenBank accession number 14

DNA fragment used for species identification 15

Corresponding gene region 16

Colour codes of nucleotide bases of illustrative DNA barcode



Four different coloured vertical bands corresponding to four nucleotdes of DNA sequence 17

GenBank accession number of illustrative barcode sequence 18

Representing family of illustrated species 19

Page no. 20

EN
Doubletooth soldierfish

LN
Duidati soinik machh (দুইদাঁতি সৈনিক মাছ)

LC



SL: 144 mm

Myripristis hexagona (Lacepède, 1802)

Class	**Actinopterygii**
Order	**Beryciformes**
Family	**Holocentridae**



Fin formula: D-X+I, 15; P1-16; P2-I, 7; A-IV, 14; C-III+III, 20

Branchiostegal Rays: 8

Colour of scales of body silvery to white, the edges dark red to reddish brown; a board red band from upper end of gill opening to axil of pectoral fin, enclosing opercular membrane which is darker red or reddish brown; iris red, sometimes with a blackish blotch above and below pupil; spinous dorsal fin light red and whitish basally, broadly bright red distally; soft dorsal, anal, and caudal fins pale red, the distal part of the lobes of these fins more red than the proximal part. Body moderately deep; corner of preopercle without a sharp spine; lower jaw prominently projecting. Numerous small scales in ventral part of axil of pectoral fins.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK340664 (COI), MK335869 (16S)

Illustrative Barcode:



MK340664 (COI)

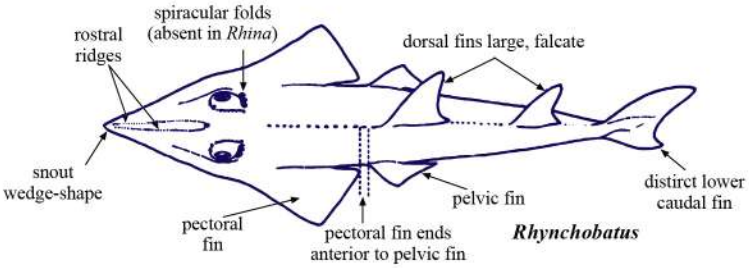
FISH SPECIES PROFILE

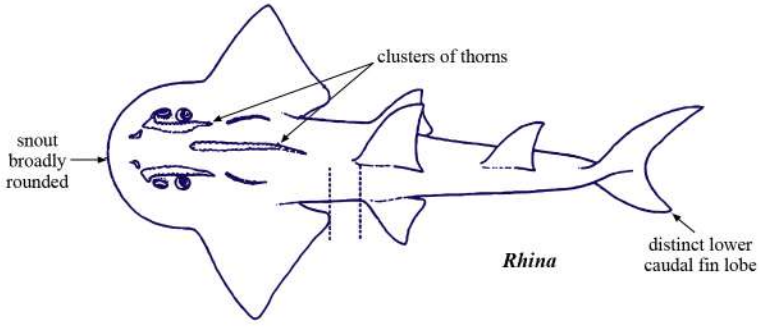
Family **Rhinidae** 38
Family **Dasyatidae** 40
Family **Muraenidae** 42
Family **Plotosidae** 44
Family **Synodontidae** 46
Family **Holocentridae** 50
Family **Dactylopteridae** 54
Family **Mullidae** 56
Family **Fistulariidae** 60
Family **Syngnathidae** 62
Family **Apogonidae** 64
Family **Gobiidae** 70
Family **Lactariidae** 76
Family **Sphyraenidae** 78
Family **Menidae** 80
Family **Carangidae** 82
Family **Echeneidae** 96
Family **Plesiopidae** 98
Family **Opistognathidae** 100
Family **Pomacentridae** 104

Family **Belonidae** 116
Family **Hemiramphidae** 118
Family **Blenniidae** 120
Family **Priacanthidae** 124
Family **Sillaginidae** 128
Family **Lutjanidae** 130
Family **Caesionidae** 142
Family **Haemulidae** 144
Family **Lethrinidae** 152
Family **Nemipteridae** 156
Family **Epinephelidae** 158
Family **Labridae** 168
Family **Scaridae** 176
Family **Trichonotidae** 180
Family **Pinguipedidae** 182
Family **Scorpaenidae** 184
Family **Terapontidae** 190
Family **Kyphosidae** 192
Family **Pempheridae** 194
Family **Lobotidae** 196
Family **Pomacanthidae** 198
Family **Drepaneidae** 200
Family **Chaetodontidae** 204
Family **Ephippidae** 208
Family **Leiognathidae** 212
Family **Scatophagidae** 216
Family **Siganidae** 218
Family **Zanclidae** 222
Family **Acanthuridae** 224
Family **Antennariidae** 228
Family **Diodontidae** 230
Family **Tetraodontidae** 232
Family **Ostraciidae** 236
Family **Monacanthidae** 238
Family **Balistidae** 240

FAMILY Rhinidae
Wedgefishes

Wedgefishes are medium to large, shark-like rays with a variably depressed trunk, weakly formed disc, and a head either thickened and broadly domed, or flattened wedge-shaped or rounded. Usually marine. They are strong swimmers, and bottom-dwellers that rest rather than burrow on muddy or sandy bottoms. They feed on benthic invertebrates and small bottom-dwelling fishes.







SL: 1100 mm

Rhina ancylostomus Bloch & Schneider, 1801

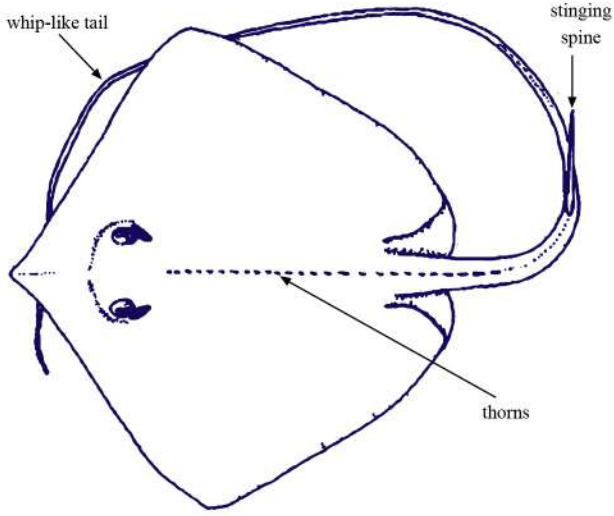
Class **Actinopterygii**
Order **Rhinopristiformes**
Family **Rhinidae**

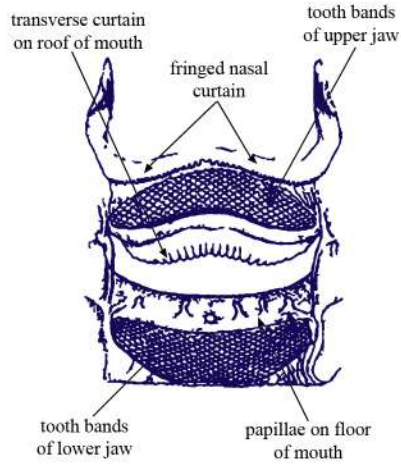


Colour usually bluish grey to brownish in above, pale in ventral surface; edge large and white; numerous white spots dorsally on fins, body and tail; black spots on head and shoulders. Body large and sharklike, head broadly rounded and distinctly demarcated from pectoral fins, no spiracular folds, ridges of large thorns on back, and dark bands presents between eyes. Body greatly thickened above abdomen; tail much longer than disc and broad based. Snout broadly rounded; deep notch on anterior profile of body at junction of head and pectoral fins. Spiracles large, without folds of any kind. Eyes rather large. Nostrils elongate and almost transverse; width about equal to internasal space. Dorsal fins very tall and falcate, first larger than second; first dorsal-fin origin over or slightly forward of pelvic-fin origin. Caudal fin lunate, very large, with a distinct lower lobe only slightly shorter than upper lobe; its posterior margin deeply concave.

FAMILY Dasyatidae
Stingrays

Stingrays occur in tropical to warm-temperate waters worldwide. Their body is strongly depressed, with head, trunk, and broadly expanded pectoral fins forming rhomboid or oval shaped disc. They are usually inhabitant in shallow coastal waters, burying in sandy bottoms, some are rarely in muddy bottoms. Feed on bottom-dwelling invertebrates, mainly bivalves and worms; also, on shrimps, crabs, and small ray-finned fish. They are viviparous without placenta.





open mouth of *Dasyatis*



Neotrygon indica Pavan-Kumar, Kumar, Pitale, Shen & Borsa, 2018

Class **Elasmobranchii**
Order **Myliobatiformes**
Family **Dasyatidae**



Colour of body above dull-brown, white ventrally with numerous small black spots and blue black-edged ocelli. Tip of tail black, preceded by two obscure cross-bands. Disc kite-shaped, much broader than long. Spiracles greatly larger than eyes. Mouth undulated, with two buccal papillae on floor of mouth. Tail long, whip-like, exceeding length of disc, with upper and lower cutaneous folds, with 2 or 3 serrated spines. Back and head with small denticles in adult.

DNA Barcode: MK340668 (COI)

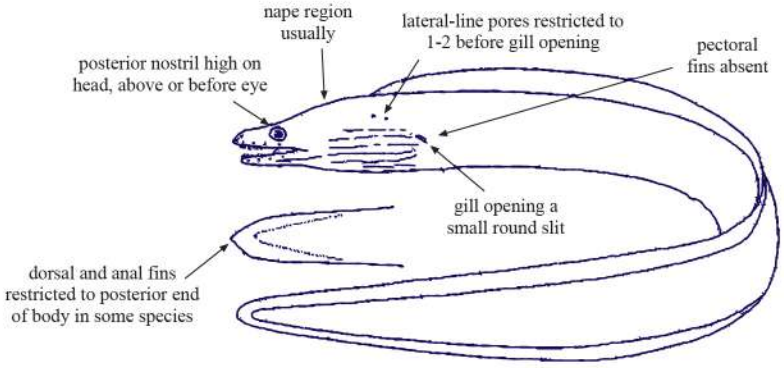
Illustrative Barcode:



MK340668 (COI)

FAMILY Muraenidae
Morays, squirrelfishes

Morays are small to very large eels inhabiting tropical and subtropical seas, where they live in shallow water among reefs and rocks and hide in crevices. Some of these live above sand or mud bottoms at depths. A few species are found in brackish-water tidal creeks, mangrove areas, or in rivers. They are usually brightly marked or coloured. They are scavengers and predators, feed on fish or crustaceans.





Gymnothorax favagineus Bloch & Schneider, 1801

Class **Actinopterygii**
Order **Anguilliformes**
Family **Muraenidae**

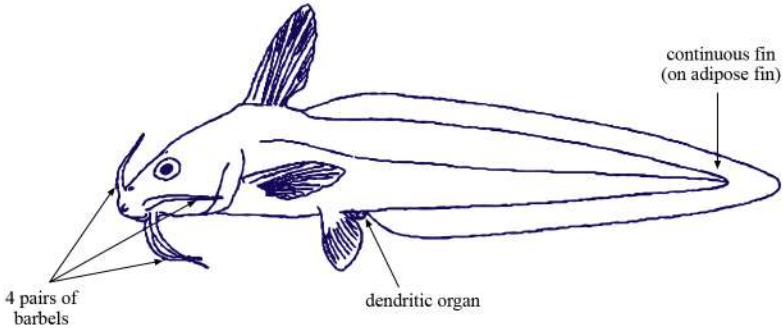


Colour grey to pale brown with black spots on the head, body and fins. The spots become relatively smaller as the fish grows. Small to very large eels. Body elongate. Dorsal profile of head above and behind eye raised. Eye well developed. Snout short to elongate. Mouth large, gape usually extending behind posterior margin of eye. Posterior nostrils high on head, above or before eye, a simple pore or in a tube. Dorsal and anal fins variously developed, continuous with caudal fin around tail tip. Pectoral and pelvic fins absent.

Remarks: A rare sighting in coral habitat of St. Martin's Island. This species has been recorded during underwater scuba diving.

FAMILY Plotosidae
Eeltail catfishes

Medium-sized catfish with elongate, tapering body posteriorly. Found chiefly in estuaries and lagoons, and sometimes up rivers in nearly freshwater. Juveniles probably form dense aggregations. Major food items are crustaceans, molluscs and fish.





SL: 147 mm

Plotosus lineatus (Thunberg, 1787)

Class **Actinopterygii**
Order **Siluriformes**
Family **Plotosidae**



Fin Formula: D-I, 4; DPC-109; P_1-I, 10; P_2-12; A-78
Branchiostegal Rays: 11

Colour of head and body brown, becoming cream or white ventrally; two to three narrow pale yellow longitudinal stripes on body, of which two extending onto head. Body somewhat elongate; anterior nostril situated dorsal to upper lip, opening directed anteriorly; nasal and maxillary barbels short, reaching to or slightly beyond posterior margin of eye; origin of dorsal procurrent caudal fin inserting vertical above pelvic fin base.

DNA Barcode: MN458369 (COI), MN458370 (COI)

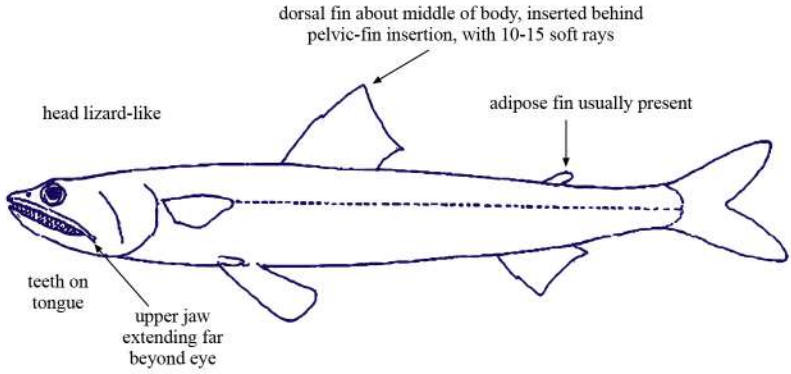
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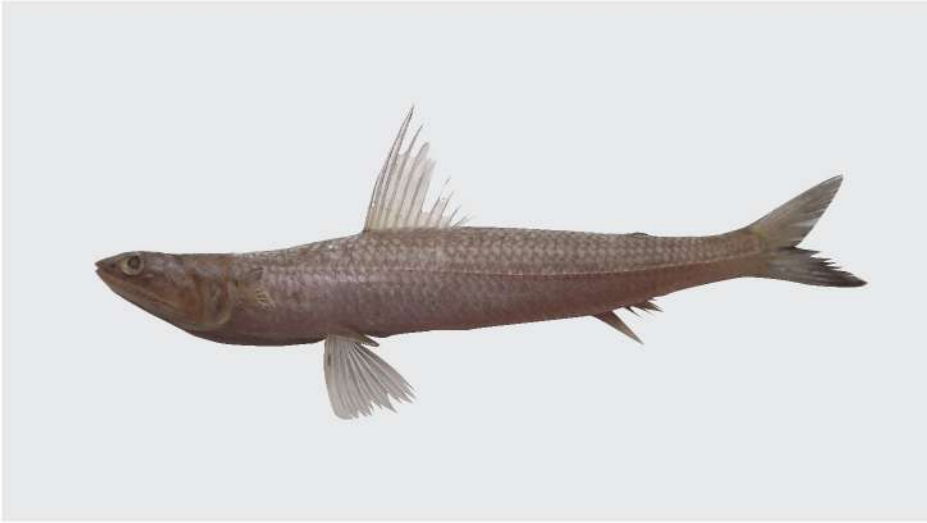


MN458369 (COI)

FAMILY Synodontidae
Lizardfishes

Lizardfishes are distinguished from the members of other families in having a cylindrical or somewhat compressed head with a large mouth (hind tip extending beyond eye). Head usually lizard-like. Occur in tropical to temperate marine and estuarine areas. Live on rocky, coral, sandy, or muddy bottoms in shallow waters. Feed on bottom-living invertebrates (particularly worms) and fishes.





SL: 163 mm

Saurida micropectoralis Shindo & Yamada, 1972

Class **Actinopterygii**
Order **Aulopiformes**
Family **Synodontidae**



Fin Formula: D-11; P_1-15; P_2-9; A-11; C-18–20

Branchiostegal Rays: 14

Upper sides brown, lower sides and belly white. Nine to 10 faint blotches along the lateral line, sometimes with traces of very indistinct cross-bars on the back. Upper edges of pectoral and caudal fins occasionally with faint black dots. The upper portion of the inner side of the pectoral fins dark. Body elongate, cylindrical. Head somewhat depressed but tail compressed; mouth large. Adipose fin present.

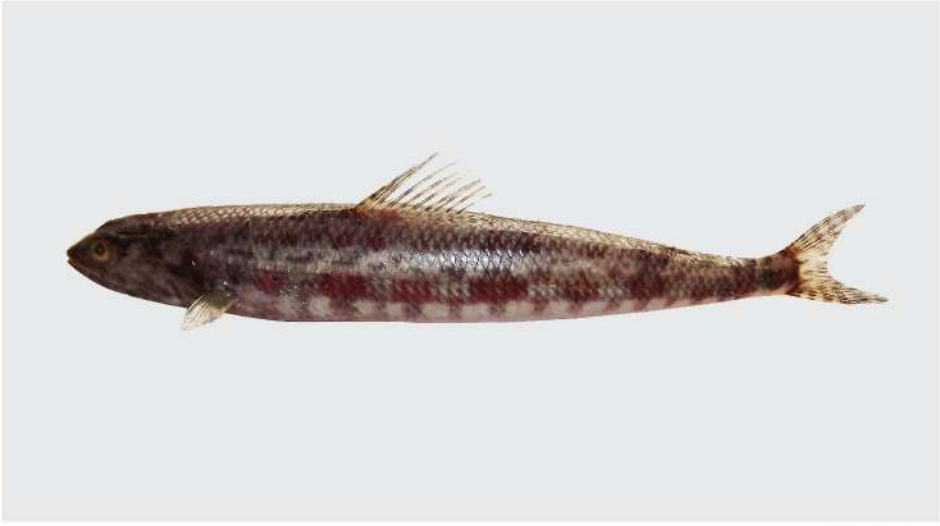
Remarks: New distributional record from Bangladesh.

DNA Barcode: MK340700 (COI), MK340701 (COI), MK335881 (16S), MK335882 (16S)

Illustrative Barcode:



MK340700 (COI)



SL: 163 mm

Synodus variegatus (Lacepède, 1803)

Class **Actinopterygii**
Order **Aulopiformes**
Family **Synodontidae**



Fin Formula: D-12; P_1-12; P_2-8; A-8; C-22
Branchiostegal Rays: 16

Colour of body brown to red markings dorsally on body, silvery white ventrally; a longitudinal series of reddish blotches along lateral midline. 7 black band like series on the caudal fin. Black spot on dorsal, pelvic and anal fins. Body sub-cylindrical, moderately elongate. Teeth on jaws not exposed when mouth closed; palatine teeth arranged in a single band on each side of the roof of the mouth. Nasal flap on anterior nostril short and triangular; cheek fully scaled posteriorly. Outermost ray of pelvic fin distinctly shorter than innermost ray. Adipose fin present.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK340725 (COI), MK335889 (16S)

Illustrative Barcode:



MK340725 (COI)



SL: 82 mm

Trachinocephalus trachinus (Temminck & Schlegel, 1846)

Class **Actinopterygii**
Order **Aulopiformes**
Family **Synodontidae**



Fin Formula: D-14; P_1-12; P_2-8; A-16; C-24
Branchiostegal Rays: 10

Body colour greenish-brown above, belly silvery, with alternating pale blue and yellow stripes; an oblique black spot at upper end of gill opening; fins pale yellow. Interorbital deeply concave; snout very short, equal to eye diameter; eye close to anterior end of upper jaw; anal fin base distinctly longer than dorsal fin base; pectoral fin rather small. Adipose fin present.

DNA Barcode: MK340735 (COI), MK340736 (COI)

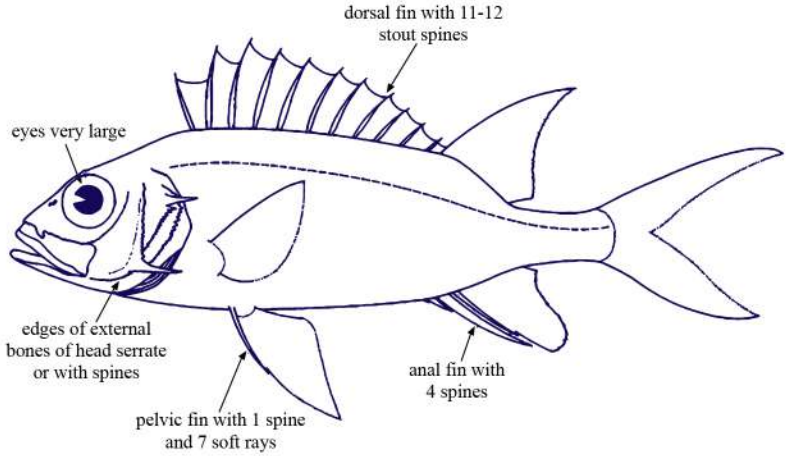
Illustrative Barcode:



MK340735 (COI)

FAMILY Holocentridae
Squirrelfishes, soldierfishes

Squirrelfishes and soldierfishes are small to medium-sized fish and nocturnal predators. Their large eyes suit them well for their nocturnal habits. Most of the squirrelfishes and soldierfishes species live in relatively shallow water on coral reefs or rocky bottoms and hide during the day under ledges or in caves. They are also well known for sound production. Squirrelfishes feed mainly on crustaceans living on or near the bottom, whereas soldierfishes of the genus Myripristis feed on larger elements of night zooplankton. They come out at dusk to feed on small fish and invertebrates.





SL: 144 mm

Myripristis hexagona (Lacepède, 1802)

Class **Actinopterygii**
Order **Holocentriformes**
Family **Holocentridae**



Fin Formula: D-X+I,15; P_1-16; P_2-I, 7; A-IV, 14; C-III+III, 20
Branchiostegal Rays: 8

Colour of scales of body silvery to white, the edges dark red to reddish brown; a board red band from upper end of gill opening to axil of pectoral fin, enclosing opercular membrane which is darker red or reddish brown; iris red, sometimes with a blackish blotch above and below pupil; spinous dorsal fin light red and whitish basally, broadly bright red distally; soft dorsal, anal, and caudal fins pale red, the distal part of the lobes of these fins more red than the proximal part. Body moderately deep; corner of preopercle without a sharp spine; lower jaw prominently projecting. Numerous small scales in ventral part of axil of pectoral fins.

Illustrative Barcode:



MK340664 (COI)



SL: 124 mm

Sargocentron rubrum (Forsskal, 1775)

Class **Actinopterygii**
Order **Holocentriformes**
Family **Holocentridae**



Fin Formula: D-XI,13; P_1-14; P_2-I, 7; A-IV, 9; C-V+IV, 19–20
Branchiostegal Rays: 8

Colour of body brownish red and silvery white stripes; a triangular streak of brownish red on cheek from eye to corner of preopercle. Dorsal fin red with white-tipped spines and a large quadrangular whitish blotch on each membrane; an elongate brown spot beneath soft portion of dorsal fin and a roundish blotch above base of soft portion of anal fin; upper and lower edges of caudal fin with red to brownish red band, with a very narrow bluish white margin. Body moderately deep. Head convex; snout short and blunt. Scale rows above lateral line to middle of spinous portion of dorsal fin.

DNA Barcode: MK340697 (COI), MK340698 (COI)

Illustrative Barcode:



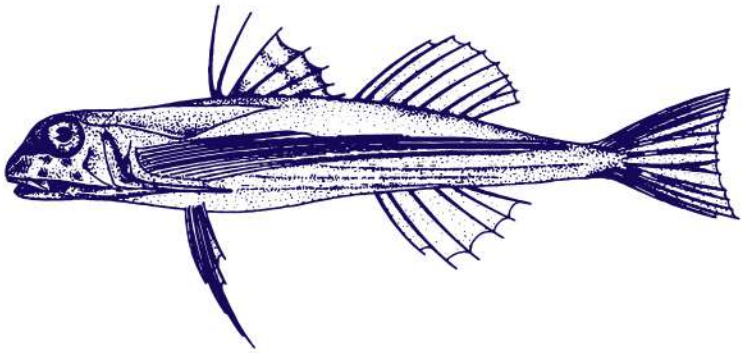
MK340697 (COI)



Sargocentron rubrum
This species is capable of producing sounds with its swimbladder for intra-specific communication.

FAMILY Dactylopteridae
Flying gurnards

They are moderately elongated. Head blunt, heavily armored box like and wing like pectoral fins. Inhabit coastal waters with sandy substrate; a shallow living species, benthic in adults. Solitary, well camouflaged and slow moving. Feed on crustaceans, clams, and small fish.





SL: 181 mm

Dactyloptena orientalis (Cuvier, 1829)

Class	**Actinopterygii**
Order	**Syngnathiformes**
Family	**Dactylopteridae**



Fin Formula: D_1-I+I+VI; D_2-8; P_1-32; P_2-I, 4; A-6; C-13–15
Branchiostegal Rays: 6

Usually yellowish brown above, lighter brown below; small orange spots over top of head and back; dusky, golden spots on pectoral fins (larger distally); four golden bands on caudal fin; a yellow band along the upper part of spinous dorsal fin. Body moderately elongate, squarish in cross-section. Head broad, blunt, depressed anteriorly, with a prominent keeled spine extending posteriorly from the nape to below second spine of continuous spinous part of dorsal fin. Angle of preopercle with a long, prominent spine. Eyes large. Mouth small, subterminal, and protractile. Upper jaw largely obscured by bones surrounding eye. Minute teeth present on jaws. Lateral line absent or greatly obscured.

DNA Barcode: MK340606 (COI), MK340607 (COI)

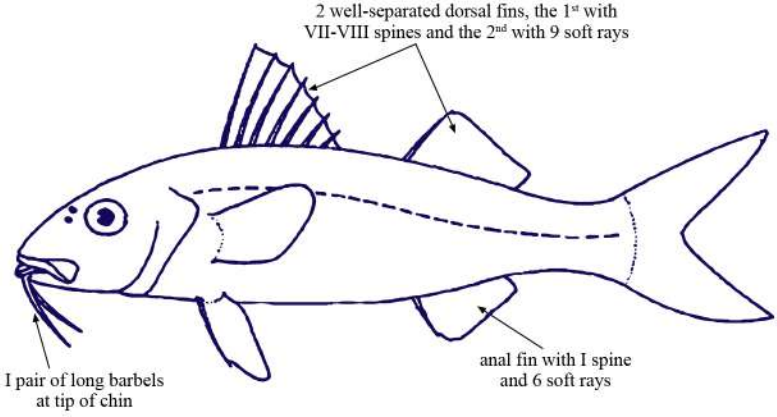
Illustrative Barcode:



MK340606 (COI)

FAMILY Mullidae
Goatfishes

Goatfishes are moderately elongate and somewhat compressed. Their common name derives from a pair of barbels located under the lower jaw. Inhabit shallow seas, on open sand or mud bottoms. The barbels, chemosensory receptors, are actively moved over or into the sediment to find food organisms and in holes on the reef. When not in use the barbels can be folded back. Some species are active at night and form large inactive aggregations during daytime and hover over reefs. Others are solitary and forage on the sand bottom during the day. They are carnivorous, feed on a wide variety of small animals, especially crustaceans and worms.



EN
Yellowfin goatfish

LN
Sonali bata (সোনালী বাটা)

LC



SL: 55 mm

Mulloidichthys vanicolensis (Valenciennes, 1831)

Class	**Actinopterygii**
Order	**Mulliformes**
Family	**Mullidae**



Fin Formula: D-VIII, 9; P_1-16; P_2-I, 5; A-I, 7; LLp- 35
Branchiostegal Rays: 3

Colour of body pale yellowish to greenish dorsally, shading to whitish or pink ventrally, with a yellow stripe edged in pale blue from eye to base of caudal fin. Body moderately elongate.Mouth low on head. Chin with two slender barbels. Second dorsal and anal fins lacking scaled area. Scales finely ctenoid.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MT374171 (COI)

Illustrative Barcode:



MT374171 (COI)



SL: 218 mm

Parupeneus indicus (Shaw, 1803)

Class **Actinopterygii**
Order **Mulliformes**
Family **Mullidae**



Fin Formula: D_1-VIII; D_2-9; P_1-16; P_2-I, 5; A-I, 7; C-18
Branchiostegal Rays: 3

Colour of body brownish-white above and silvery white below; a horizontally elongated yellow spot on middle of back centered on lateral line; a black spot posteriorly on caudal peduncle; upper part of head with light blue lines; fins hyaline. Barbels extending slightly behind hind margin of preoperculum.

DNA Barcode: MK340674 (COI), MK335873 (16S)

Illustrative Barcode:



MK340674 (COI)

EN
Freckled goatfish

LN
Tota bata (সোনালী বাটা)

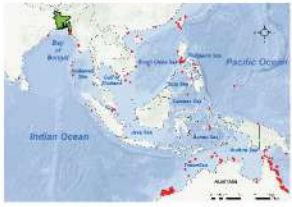
LC



SL: 103 mm

Upeneus tragula (Richardson, 1846)

Class **Actinopterygii**
Order **Mulliformes**
Family **Mullidae**



Fin Formula: D_1-VIII; D_2-9; P_1-13; P_2-I, 5; A-I, 6; C-16
Branchiostegal Rays: 3

Highly variable in colour, from red to irregular dots and blotches on body; a dark reddish brown to blackish stripe from front of snout to base of caudal fin; head and body above stripe brownish to greenish gray, flecked with small dark reddish brown or blackish spots; upper lobe of caudal fin with 4-6 blackish cross bands, and lower lobe with 5-7; outer third to half of first dorsal fin with a large dark red to black blotch containing two to several small yellow spots; second dorsal fin with three dark reddish or blackish bands; barbels usually yellow. Body elongate. Chin with two slender barbels, usually not reaching rear margin of preopercle. Mouth small; villiform teeth in a narrow band in jaws. Scales present on side of snout.

DNA Barcode: MK340744 (COI)

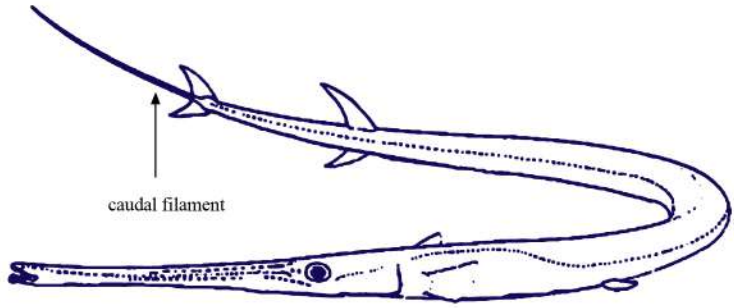
Illustrative Barcode:



MK340744 (COI)

FAMILY Fistulariidae
Cornetfishes, flutemouths

Body elongate and depressed. Mouth small, at end of a long tubular snout hexagonal in cross section; teeth in jaws small. Found in coastal areas over soft bottoms, usually at depths. Often seen in seagrass beds and coral reefs. Cornetfishes feed on small fishes and shrimps.



EN
Red cornetfish

LN
Boro thute (বড় ঠুঁটে)

LC



SL: 372 mm

Fistularia petimba Lacepede, 1803

Class	**Actinopterygii**
Order	**Syngnathiformes**
Family	**Fistulariidae**



Fin Formula: D-14; P_1-15; P_2-6; A-15
Branchiostegal Rays: 7

Body orange brown dorsally and silvery ventrally; occasionally light spots on the back and sides. Elongate bony plate along dorsal midline of body; post temporal ridge with large antrose cirri; anus close behind ventral. Body elongated, much compressed. Mouth small located at the end of a tubular snout. Skin naked, smooth to touch. Forked caudal fin with long whip like tail filament.

DNA Barcode: MN458408 (COI)

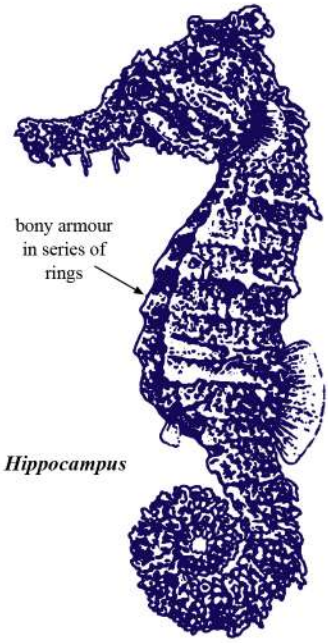
Illustrative Barcode:



MN458408 (COI)

FAMILY Syngnathidae
Seahorses

Seahorses have elongate body; encased in bony armour arranged into a series of rings. Found in all tropical and warm-temperate marine waters, and some even found in freshwater environments. Some of seahorses are reef-associated. They use the long snout and small mouth as pipette like suction device for obtaining small crustaceans and other live and moving organisms. Males brood the eggs and sometimes even the young. Locomotion is achieved by rapid undulations of the dorsal and pectoral fins.





Hippocampus kuda (Bleeker, 1852)

Class **Actinopterygii**
Order **Syngnathiformes**
Family **Syngnathidae**

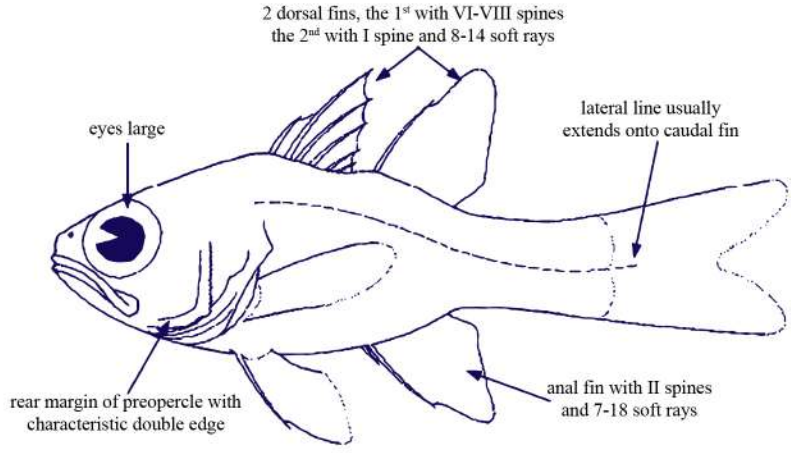


Body dark brown with scattered dark spots and cross bands on tail. Body rings 11+36 without spines. Snout long, cornet low, divided distally; tubercles on body rings; dorsal fin located above last two body rings and first two tail rings.

Remarks: This species has been recorded during underwater scuba diving.

FAMILY Apogonidae
Cardinalfishes

Cardinalfishes are small percoid fishes; body ovate to elongate, moderately compressed. Eyes large, their diameter exceeding snout length. Body colour variable. Inhabit coral and rocky reefs and adjacent habitats including sand-rubble patches and seagrass beds. Usually in small to large aggregations that shelter among or near live coral during the day; feed on small shrimps and crabs.





SL: 64 mm

Apogonichthyoides sialis (Jordan & Thompson, 1914)

Class **Actinopterygii**
Order **Kurtiformes**
Family **Apogonidae**



Fin Formula: D_1-VII; D_2-I, 9; P_1-14; P_2-I, 5; A-II, 8; C-18
Branchiostegal Rays: 7

Colour of body dark; dark bars from dorsal to ventral side, reaching to the level of lower pectoral-fin base or slightly lower; a distinct dark caudal spot. Body ovate to elongate, moderately compressed. Eyes large, their diameter exceeding snout length. Preoperculum finely serrated. Pelvic bases connected by a membrane (intrapelvic space covered). Large mouth, villiform teeth. Pectoral fin nearly reaches to anal fin origin in vertical. Caudal fin emarginate.

Remarks: New distributional record from Bangladesh.



SL: 89 mm

Lepidamia kalosoma (Bleeker, 1852)

Class **Actinopterygii**
Order **Kurtiformes**
Family **Apogonidae**



Fin Formula: D_1-VII; D_2-I, 9; P_1-14; P_2-I, 5; A-II, 8; C-18–22
Branchiostegal Rays: 7

Colour of live specimen white with a dark lateral band from head to base of caudal, where it ends in a large caudal spot. A second band from snout, along sides at some distance below profile of back. Upper part of first dorsal fin blackish. All the fin slightly reddish in color in live. Body ovate to elongate. Mouth rather oblique, reaching to below hinder half of eye, lower jaw slightly included. First dorsal spine very small, second one more than half of third, which is longest and strongest and equal to snout. Second dorsal fin larger than first dorsal fin. Caudal fin rounded.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK340634 (COI)

Illustrative Barcode:



MK340634 (COI)



SL: 79 mm

Ostorhinchus quadrifasciatus (Cuvier, 1828)

Class **Actinopterygii**
Order **Kurtiformes**
Family **Apogonidae**



Fin Formula: D_1-VII; D_2-I, 9; P_1-13; P_2-I, 5; A-II, 8
Branchiostegal Rays: 6

Three dark stripes on the upper half of head and body, the broadest and mid-lateral, reaching end of caudal fin, two narrow stripes reaching to base of second dorsal fin, the lower stripe reaching caudal fin base; no dark stripes in second dorsal or anal fins. Small sized, compressed body; moderately elongate. Eyes large; mouth large. Preopercular ventral edge ossified, serrated. No canine teeth. Caudal fin slightly forked. Scales ctenoid. Some pored lateral-line scales on body.



SL: 63 mm

Ostorhinchus cookii (MacLeay, 1881)

Class **Actinopterygii**
Order **Kurtiformes**
Family **Apogonidae**



Fin Formula: D_1-VII; D_2-I, 9; P_1-14; P_2-I, 5; A-II, 8; C-18–20
Branchiostegal Rays: 7

Colour of head and body pale with six longitudinal dark brown stripes with various widths; 3rd stripe short and extends from dorsal margin of eye to, or slightly beyond, a vertical through origin of second dorsal fin; a dusky rounded spot at caudal fin base; fins sub-translucent or a little tinged with red. Body oblong, moderately deep and compressed; lateral line well developed, extending posteriorly to caudal fin base. Snout moderately pointed. Posterior margin of preopercle serrate. No enlarged canine teeth on jaws. Base of anal fin sub-equal to base of second dorsal fin in length; caudal fin emarginate.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK340670 (COI), MK335872 (16S)

Illustrative Barcode:



MK340670 (COI)



SL: 52 mm

Taeniamia sp.

Class **Actinopterygii**
Order **Kurtiformes**
Family **Apogonidae**

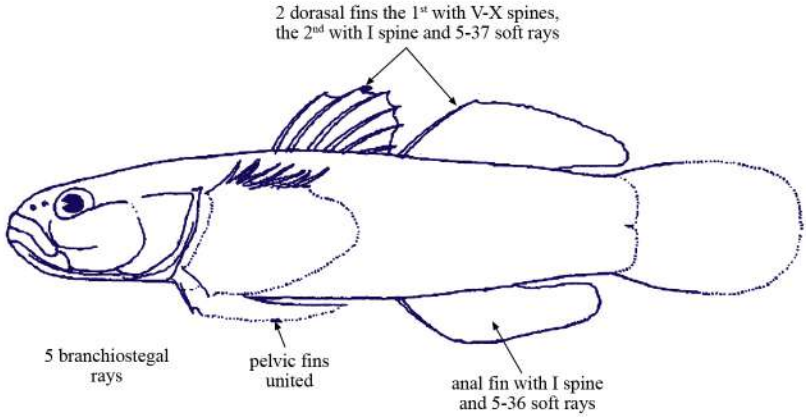


Fin Formula: D_1-VI; D_2-I, 9; P_1-12, P_2-I, 5; A-II, 16
Branchiostegal Rays: 7

Colour of body light reddish. Dorsal, pectoral, pelvic and anal fin whitish with reddish base. Minute black spot on operculum. Caudal fin whitish with a black spot at the base. Body short, compressed laterally. Mouth highly protractile. Teeth villiform. Lateral line complete and curved. Caudal fin forked.

FAMILY Gobiidae
Gobies

The Gobiidae is the largest family of marine fishes and comprises more than 220 genera and 1850 species. Small to moderate-sized, bottomoriented fish. Body shape highly variable, but, typically, moderately elongate and more or less compressed posteriorly. Found in various habitats from torrential freshwater rivers to shelf waters, but most common in brackish waters, shallow coastal waters and coral reefs. Coral reefs are particularly rich in goby species. Gobies live in a burrow in the sand. Most species live in pairs. Some species live with shrimp in the burrow. Some gobies associate with other organisms such as shrimps, sponges, soft corals, and other fishes. For few species, symbiotic relationships with other organisms are a necessary part of the goby's lifestyle. They are carnivores or plankton feeders.



EN
Downing's shrimpgoby

LN
Baila (বাইলা)

LC



SL: 98 mm

Amblyeleotris downingi (Randall, 1994)

Class **Actinopterygii**
Order **Gobiformes**
Family **Gobiidae**



Fin Formula: D_1-VI; D_2-I, 16; P_1-20; P_2-I, 5; A-I, 17; C-18
Branchiostegal Rays: 5

Four faint broad dark brown bars on body, as well as a weak similar-coloured short vertical line in the middle of each interspace; dorsal part of operculum tinged with dark brown; a dusky spot above dorsal end of gill opening; a faint dusky spot on first dorsal fin. Body elongate and compressed. Head slightly compressed; lower jaw slightly protruding beyond upper jaw; gill opening extending anteriorly beyond a vertical line through posterior margin of preopercle. A series of short transverse rows of sensory papillae below eye; a pair of sensory papillae just behind chin.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK340584 (COI)

Illustrative Barcode:



MK340584 (COI)



SL: 96 mm

Cryptocentrus cyanotaenia (Bleeker, 1853)

Class **Actinopterygii**
Order **Gobiformes**
Family **Gobiidae**



Fin Formula: D_1-VI; D_2-I, 10; P_1-18; P_2-I, 5; A-I, 10; C-20
Branchiostegal Rays: 5

Colour numerous short diagonal blue lines on head; yellow and red lines on anal fin. Body elongate, compressed. Head slightly compressed; jaws subequal, large, extending beyond a vertical through posterior margin of eye. Pelvic fins united medially; frenum present. Scales cycloid; head breast and pectoral-fin base naked. Sensory canals and pores present on head; distinct transverse sensory papillae rows on cheek; a pair of short longitudinal sensory papillae rows just behind chin.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK561627 (16S), MK560526 (COI)

Illustrative Barcode:

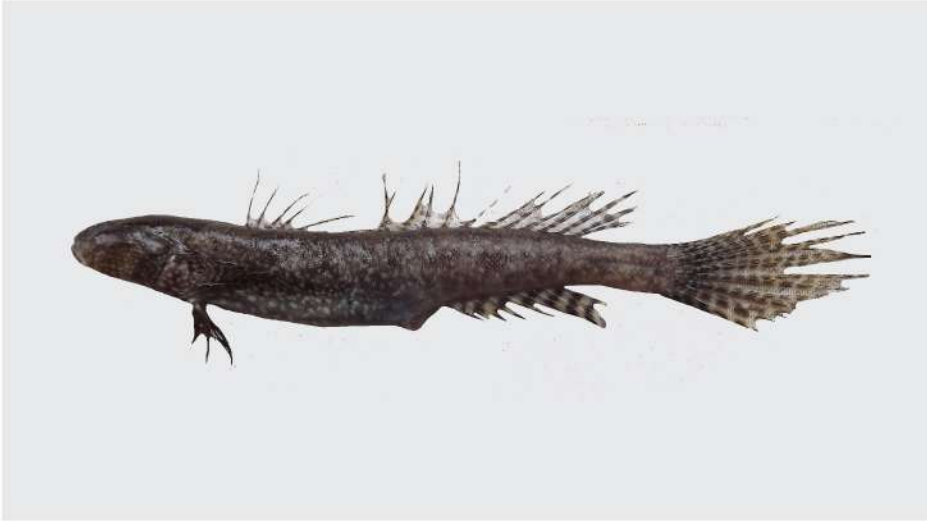


MK561627 (16S)

EN
Maude's shrimpgoby

LN
Baila (বাইলা)

LC



SL: 137 mm

Cryptocentrus maudae Fowler, 1937

Class **Actinopterygii**
Order **Gobiformes**
Family **Gobiidae**





C. maudae in the burrow entrance of sand at shallow reef flats.

Fin Formula: D_1-VI; D_2-I, 11; P_1-18; P_2-I, 5; A-I, 10; C-19
Branchiostegal Rays: 4

Colour of head and body blackish brown; anterodorsal part of eye, interorbital space, snout and anterior tip of lower jaw pale or pale brown; several pale or pale brown saddles on head and body, in addition to numerous minute pale spots; anal fin with 5-6 diagonal black lines. Body elongate, compressed. Head slightly compressed; jaws subequal, not reaching to a vertical through posterior margin of eye; gill opening reaching anteriorly around a vertical through posterior margin of preopercle. Sensory canals and pores present on head; distinct transverse sensory-papillae rows on cheek; a pair of short longitudinal sensory papillae rows just behind chin.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK293942 (COI), MK293944 (16S)

Illustrative Barcode:



MK293942 (COI)



SL: 80 mm

Istigobius ornatus (Ruppell, 1830)

Class **Actinopterygii**
Order **Gobiformes**
Family **Gobiidae**



Fin Formula: D_1-VI; D_2-I, 10; P_1-19; P_2-I, 5; A-I, 9; C-16–18
Branchiostegal Rays: 4

Colour of head and body pale gray, with numerous small black dots or horizontally-elongate blotches; distal tip of first dorsal fin tinged with yellow. Body moderately elongate and compressed. Head sub-cylindrical or slightly depressed; snout rounded, slightly projecting anteriorly beyond upper jaw; upper part of pectoral fin with some filamentous free rays; pelvic fins united medially; frenum present. Scales on head and body ctenoid, except for occipital region, breast and pectoral-fin base with cycloid scales; head naked. Sensory canals and pores present on head.

DNA Barcode: MK335855 (16S), MK335856 (16S)

Illustrative Barcode:



MK335855 (16S)



SL: 89 mm

Valenciennea muralis (Valenciennes, 1837)

Class **Actinopterygii**
Order **Gobiformes**
Family **Gobiidae**



Fin Formula: D_1-VI; D_2-I, 12; P_1-19; P_2-I, 5; A-I, 12; C-16–20
Branchiostegal Rays: 5

Colour of head and body pale gray or pale beige, with 4-5 longitudinal narrow pink or dusky stripes; lips yellowish; black spot at distal part of first dorsal fin just behind third spine. Body moderately elongate, compressed. Head sub-cylindrical; lower jaw not projecting anteriorly beyond upper jaw; gill opening relatively narrow, restricted to pectoral fin base. Third spine of first dorsal fin slightly elongate, forming pointed fin; pelvic fins separated; frenum absent; caudal fin rounded. Sensory canals and pores present on head; longitudinal pattern of sensory-papillae rows on cheek.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK340745 (COI), MK340746 (COI), MK335891 (16S)

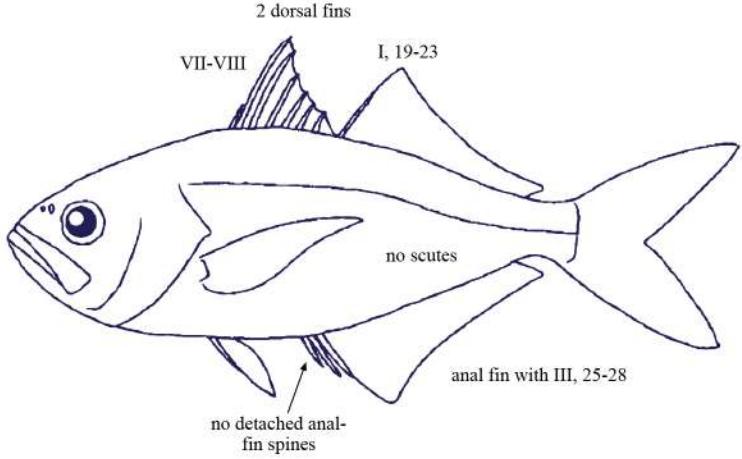
Illustrative Barcode:



MK340745 (COI)

FAMILY Lactariidae
False trevally

False trevally, a small family of marine fish that have an oblong, compressed body and an oblique, large mouth with a prominent lower jaw. The pectorals are long and pointed, the tail fin forked. Schooling species inhabitant in soft bottoms. Feed on bottom-living invertebrates and fishes.





SL: 113 mm

Lactarius lactarius Bloch & Schneider, 1801

Class **Actinopterygii**
Order **Carangiformes**
Family **Lactariidae**



Fin Formula: D_1-VIII; D_2-22; P_1-I, 13; P_2-I, 5; A-III, 26; C- 22
Branchiostegal Rays: 7

Body colour silvery-grey above and silvery-white below; a dusky spot on upper part of operculum; fins pale yellow; margin of dorsal and caudal fins dusky. Head large; mouth oblique, the lower jaw prominent; two small canine teeth in front of each jaw; ventral fins below the level of pectoral fin base; soft portions of dorsal and anal fins covered with scales. Caudal fin forked.

DNA Barcode: MK340629 (COI)

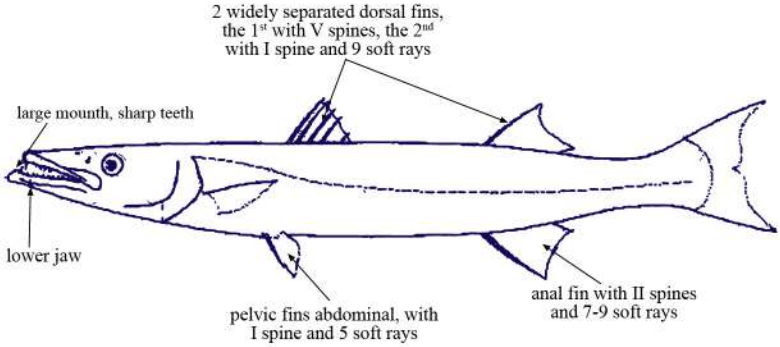
Illustrative Barcode:



MK340629 (COI)

FAMILY Sphyraenidae
Barracudas

Barracudas has elongate body, sub-cylindrical or slightly compressed; long head, pointed, scaly on sides and posteriorly on top. Mouth nearly horizontal, large. Most of them inhabit shallow coastal waters, such as bays, estuaries, or the vicinity of coral reefs, but also in the surface of open oceans. Juveniles of barracuda are usually found in mangrove swamps or estuaries of rivers. They are predatory reef fish. Barracudas frequently occur in small to large schools, but adults are solitary. They have large mouths and sharp teeth to capture prey.





SL: 670 mm

Sphyraena putnamae Jordan & Seale, 1905

Class **Actinopterygii**
Order **Perciformes**
Family **Sphyraenidae**



Fin Formula: D_1-V; D_2-I, 9; P_1-14; P_2-I, 5; A-II, 8; C-18–20
Branchiostegal Rays: 7

Colour of head and body dusky yellow green above and silvery below; 10 to 20 vertical dusky cross-bars of a serpentine pattern on back; fading below lateral line. All fins dusky, except pelvic fins. Body elongate, fusiform and slightly compressed; head large with long pointed snout. Edge of pre operculum smoothly round, no produced flap. Mouth large, the maxilla reaches to level of front edge of eye. Two widely separated dorsal fins. Caudal fin typically forked.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK340720 (COI), MK340721 (COI), MK340722 (COI), MK340723 (COI), MK335884 (16S), MK335885 (16S), MK335886 (16S), MK335887(16S)

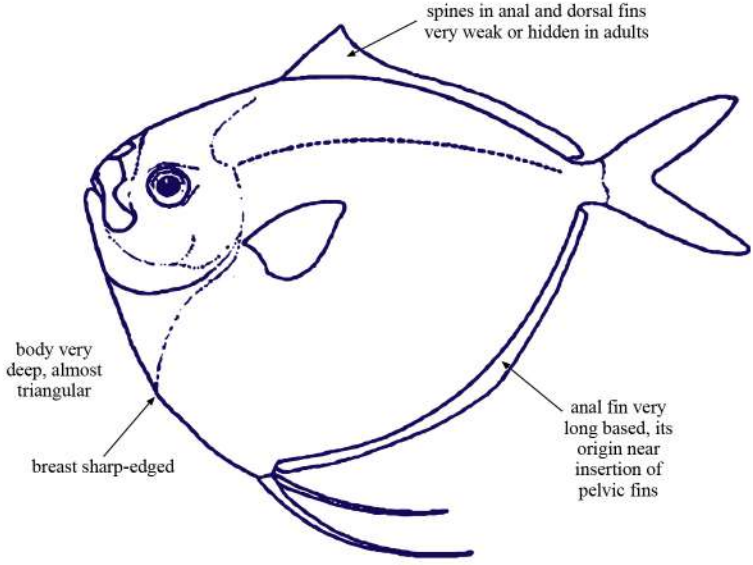
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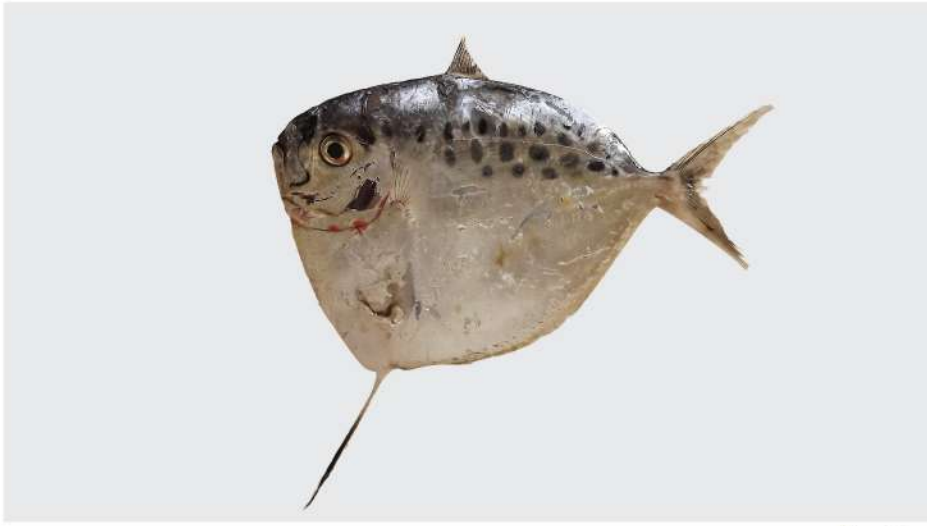


MK340720 (COI)

FAMILY Menidae
Moonfish

Body of moonfishes are very deep, almost triangular, extremely compressed; breast sharp-edged; greatest body depth. Inhabits coastal waters near the bottom on both continental shelves and around coral island; seems to prefer deep water but occasionally enters river estuaries. Shows schooling behaviour; feed on small invertebrates.





SL: 147 mm

Mene maculata (Bloch & Schneider, 1801)

Class **Actinopterygii**
Order **Perciformes**
Family **Menidae**



Fin Formula: D-IV, 42; P_1-16; P_2-I, 5; A-32; C-22
Branchiostegal Rays: 6

Body dark blue above, silvery white below; three rows of dark spots immediately above and below the lateral line; dorsal and caudal fins dusky. mouth protrudes upwards; first two rays of ventral fin fused and elongate; scales small. Body extremely compressed, discoid. Anal fin very long and low, the rays very short and overgrown with skin in adults; first two rays of pelvic fins fused and greatly prolonged in adults; pectoral fins shorter; caudal fin forked.

DNA Barcode: MK340663 (COI)

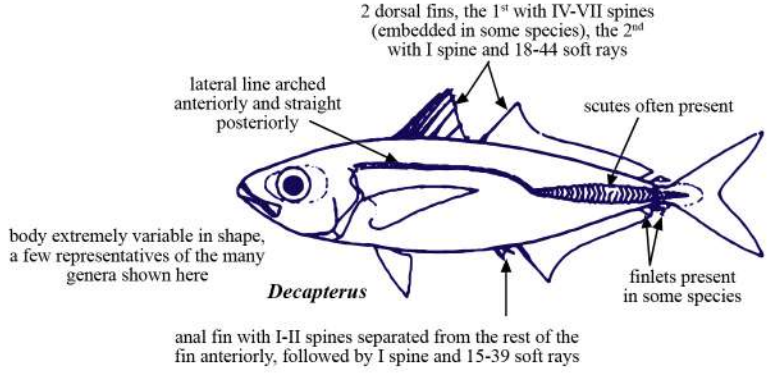
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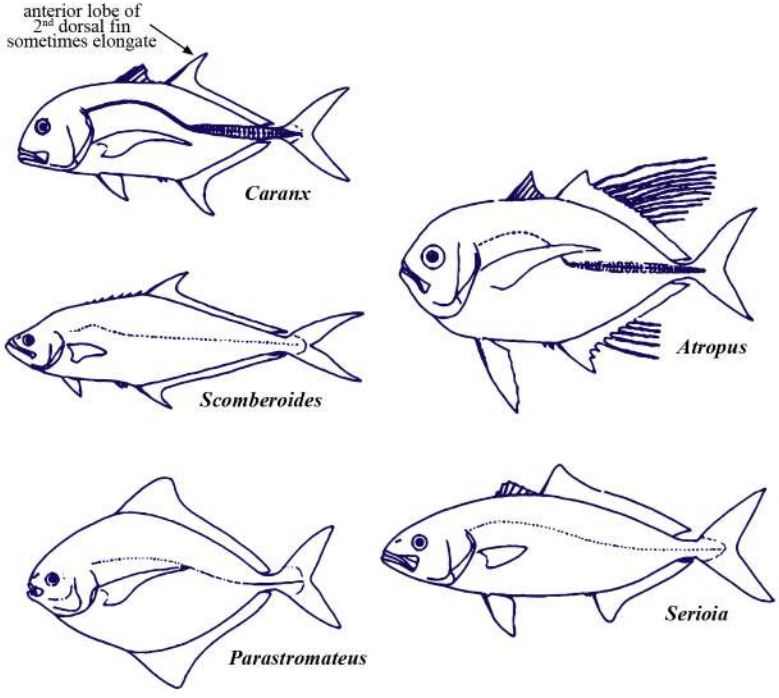


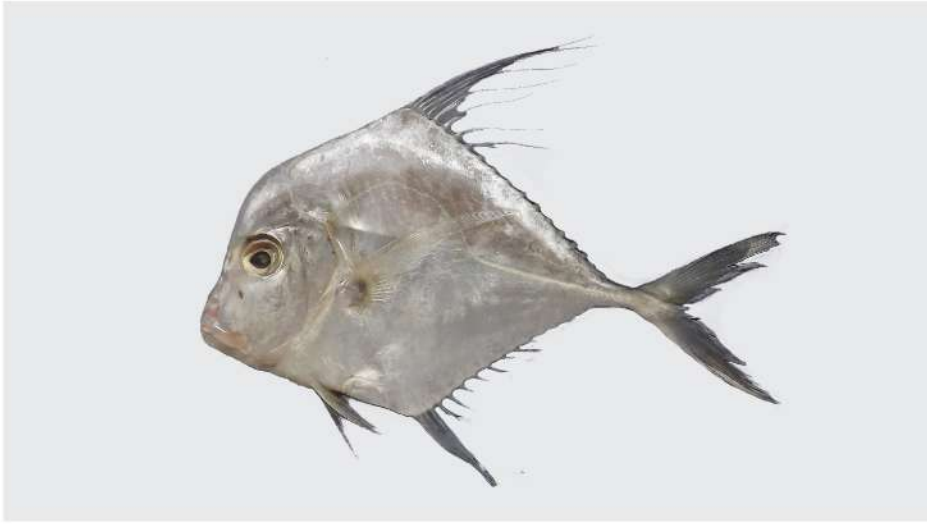
MK340663 (COI)

FAMILY Carangidae
Jacks, scads and trevallys

Jacks, scads and trevallys belong to a large family of fish. Small to large; body shape extremely variable, ranging from elongate and fusiform to deep and strongly compressed. Head varying from long and rounded to short, deep, and very compressed. Most species have silver colouration and are well-camouflaged when swimming in open water. Mostly schooling species. Carnivorous and feed on a variety of prey, including fishes, crustaceans, molluscs and other invertebrates.







SL: 236 mm

Alectis indica (Rüppell, 1830)

Class	**Actinopterygii**
Order	**Carangiformes**
Family	**Carangidae**



Fin Formula: D-VI+I, 19; P_1-19; P_2-I, 5; A-II+I, 18; C-20–22
Branchiostegal Rays: 7

Body colour silvery greenish or grayish dorsally, silvery white ventrally; dark bands on body in juveniles; anal fin yellowish. Body deeps, diamond shaped in juvenile, becoming more elongated with growth, strongly compressed; profile of forehead to nape somewhat angular. Anterior soft rays of dorsal and anal fins very long, filamentous in juveniles; pelvic fins elongated in juveniles. Body superficially naked, scales minute and embedded where present; straight part of lateral line with scutes (6-13) only posteriorly.

DNA Barcode: MK340580 (COI), MK340581 (COI)

Illustrative Barcode:



MK340580 (COI)



SL: 134 mm

Alepes kleinii (Bloch, 1793)

Class	**Actinopterygii**
Order	**Carangiformes**
Family	**Carangidae**



Fin Formula: D_1-VIII; D_2-I, 23; P_1-21; P_2-I, 5; A-II+I, 20; C-20–22
Branchiostegal Rays: 7

Body silvery green dorsally, silvery white ventrally; a large black spot on upper margin of opercle; caudal fin yellowish especially in juvenile. Body oval, strongly compressed; ventral profile more convex than dorsal profile. Snout pointed; adipose eyelid well developed on posterior half of eye; upper jaw with a band of minute teeth; lower jaw with a single row of small conical teeth except 2 rows anteriorly. Straight part of lateral line entirely with scutes 39, longer than curved part.

DNA Barcode: MK340582 (COI), MK340583 (COI)

Illustrative Barcode:



MK340582 (COI)

EN
Blacktip trevally

LN
Choukkha (চৌক্কা)

LC



SL: 265 mm

Caranx heberi (Bennett, 1830)

Class	**Actinopterygii**
Order	**Carangiformes**
Family	**Carangidae**



Fin Formula: D_1-VIII; D_2-I, 20; P_1-21; P_2-I, 5; A-II+I, 16; C-22
Branchiostegal Rays: 7

Colour of body yellow-greenish silvery-bronze dorsally, silvery white ventrally; no black opercular spot; all fins yellowish; upper lobe of caudal fin black distally in juveniles and young adults. Body oblong, compressed; dorsal profile strongly convex, ventral profile slightly convex. Adipose eyelid moderately developed on posterior half of eye. Breast usually naked ventrally with a small patch of prepelvic scales, rarely scaled completely; straight part of lateral line almost entirely with scutes (38).

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK340591 (COI), MK335844 (16S)

Illustrative Barcode:



MK340591 (COI)



SL: 117 mm

Caranx sexfasciatus (Quoy & Gaimard, 1825)

Class	**Actinopterygii**
Order	**Carangiformes**
Family	**Carangidae**



Fin Formula: D_1-VIII; D_2-I, 19; P_1-20; P_2-I, 5; A-II+I, 15; C-22
Branchiostegal Rays: 7

Colour of body blue green above, silvery below; a small, black spot on upper edge of opercle; tips of soft dorsal and anal fins white; anal and caudal fins yellowish. Body oblong; upper and lower profiles, equal, nape, elevated; 28 strong scutes on straight part of lateral line; breast completely scaled.

DNA Barcode: MK340592 (COI), MK340593 (COI), MK340594 (COI), MK340595 (COI)

Illustrative Barcode:



MK340592 (COI)



SL: 155 mm

Gnathanodon speciosus (Forsskal, 1775)

Class	**Actinopterygii**
Order	**Carangiformes**
Family	**Carangidae**



Fin Formula: D_1-I+VI+I; D_2-I, 9; P_1-22; P_2-I, 5; A-II+I, 16; C-21
Branchiostegal Rays: 6

Colour of body silvery yellow with 7-11 black bands, usually alternating broad and narrow in juveniles and young adults; the first band oblique through eye. All fins yellow, caudal fin tips black. Body oblong, somewhat deep. Both jaws without teeth in adults, a few feeble teeth on the lower jaw in young; lips fleshy and remarkably thick. Breast completely scaled; straight part of lateral line with scutes (17) posteriorly.

DNA Barcode: MK340622 (COI)

Illustrative Barcode:



MK340622 (COI)



SL: 178 mm

Megalaspis cordyla (Linnaeus, 1758)

Class **Actinopterygii**
Order **Carangiformes**
Family **Carangidae**



Fin Formula: D_1-I+VI; D_2-I, 11+8 (Finlets); P_1-20; P_2-I, 5; A-II+I, 9+7 (Finlets); C-20

Branchiostegal Rays: 7

Body colour silvery brownish-green dorsally, silvery white ventrally; a large black spot posteriorly on opercle. Elongate body, slender and compressed. Adipose eyelid well developed and completely covering eye except for a vertical slit centered on pupil. Straight part of lateral line much longer than curved part, entirely with large scutes.

DNA Barcode: MK340662 (COI)

Illustrative Barcode:



MK340662 (COI)

EN
Black pomfret

LN
Kala chanda, Hainsh chanda, Bagguilla
(কালা চান্দা, হাইশ চান্দা, বাগগুইল্লা)

LC



SL: 139 mm

Parastromateus niger (Bloch, 1795)

Class	**Actinopterygii**
Order	**Carangiformes**
Family	**Carangidae**



Fin Formula: D-V+I, 45; P_1-23, P_2-Absent; A-II+I, 39; C-18
Branchiostegal Rays: 7

Body colour grey-brown, with a blue/grey tinge; lower portion or head and body lighter; fins brownish with dark edge. Young individuals with dorsal and anal fins black; caudal fin yellowish/black. Body diamond-shaped, fairly deep and compressed. Dorsal and anal fins long, spines present only in young specimens. Pectoral fins long, falcate; pelvic fins absent in adults. Caudal fin forked.

DNA Barcode: MN458393 (COI)

Illustrative Barcode:



MN458393 (COI)



SL: 274 mm

Scomberoides commersonnianus (Lacepède, 1801)

Class **Actinopterygii**
Order **Carangiformes**
Family **Carangidae**



Fin Formula: D-I+VII+I, 21; P_1-18; P_2-I, 5; A-II+I, 19; C-20–22
Branchiostegal Rays: 8

Body colour dusky green above and silvery below with 6 to 9 large oval blotches above on lateral line; 1st two blotches intersecting lateral line; colour of pectoral fin pale with dusky blotch; ventral fins white. Body compressed with blunt snout and depression over eyes; upper jaw extending well beyond eye; no scutes; posterior soft dorsal and anal with semi-detached finlets.

DNA Barcode: MK340708 (COI), MK340709 (COI)

Illustrative Barcode:



MK340708 (COI)



SL: 92 mm

Scomberoides lysan (Forsskal, 1775)

Class **Actinopterygii**
Order **Carangiformes**
Family **Carangidae**



Fin Formula: D-I+VII+I, 20; P_1-19; P_2-I, 5; A-II+I, 18; C-20
Branchiostegal Rays: 8

Colour of body greenish gray dorsally, silvery white ventrally, with a double series of 6-8 dusky roundish blotches above and below lateral line in adults; distal part of dorsal fin lobe black; anal-fin lobe white in young, but often black in adult. Body elongate, strongly compressed. Hind tip of upper jaw reaching to or slightly beyond a vertical through posterior margin. Body covered with small lanceolate scales; no scutes along lateral line.

DNA Barcode: MK340710 (COI)

Illustrative Barcode:



MK340710 (COI)



SL: 362 mm

Scomberoides tol (Cuvier, 1832)

Class **Actinopterygii**
Order **Carangiformes**
Family **Carangidae**



Fin Formula: D-I+VII+I, 20; P_1-18; P_2-I, 5; A-II+I, 18; C-27

Branchiostegal Rays: 8

Body colour silvery, flanks with 4 to 8 vertically elongate blotches, most of them intersecting lateral line. Dorsal and anal fins uniformly pigmented. Dorsal profile of body more convex than ventral profile; cleft of mouth commences opposite to middle of eye; no scutes.

DNA Barcode: MK340711 (COI)

Illustrative Barcode:



MK340711 (COI)



SL: 101 mm

Seriolina nigrofasciata (Ruppell, 1829)

Class **Actinopterygii**
Order **Carangiformes**
Family **Carangidae**



Fin Formula: D_1-VII; D_2-I, 31; P_1-20; P_2-I, 5; A-II, 17; C-18
Branchiostegal Rays: 6

Colour of body dark brown, paler below, with 5-7 black oblique bands dorso-laterally; tips of dorsal and anal fin lobes whitish. Body elongate and slightly compressed. Hind tip of upper jaw broadly rounded, reaching to a vertical through posterior margin of eye; teeth on both jaws minutes, forming a broad band. Gill rakers on the first gill arch consisting mostly of rudiments. Caudal peduncle with fleshy lateral keel and dorsal and ventral grooves.

DNA Barcode: MK340712 (COI)

Illustrative Barcode:



MK340712 (COI)



SL: 238 mm

Ulua mentalis (Cuvier, 1833)

Class **Actinopterygii**
Order **Carangiformes**
Family **Carangidae**



Fin Formula: D_1-VII+I; D_2-I, 21; P_1-20; P_2-I, 5; A-II+I, 17; C-22
Branchiostegal Rays: 8

Colour of body olive green above and silvery white below; dusky patch present behind the corner of mouth; colour of lower jaw white. First dorsal fin hyaline, other fins greenish with darker anterior margins. Body deep, oval and strongly compressed. Head profile strongly arched above eyes. Single row of minute teeth in jaws. Pectoral fins falcate, extending to middle of anal fin base. Breast naked. Lateral line moderately arched joins lateral line straight under 8th to 11th soft dorsal rays. Straight part of lateral line entirely with 26 scutes.

DNA Barcode: MK340738 (COI)

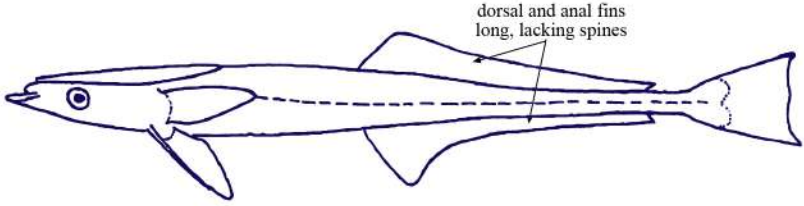
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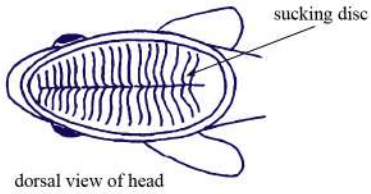


MK340738 (COI)

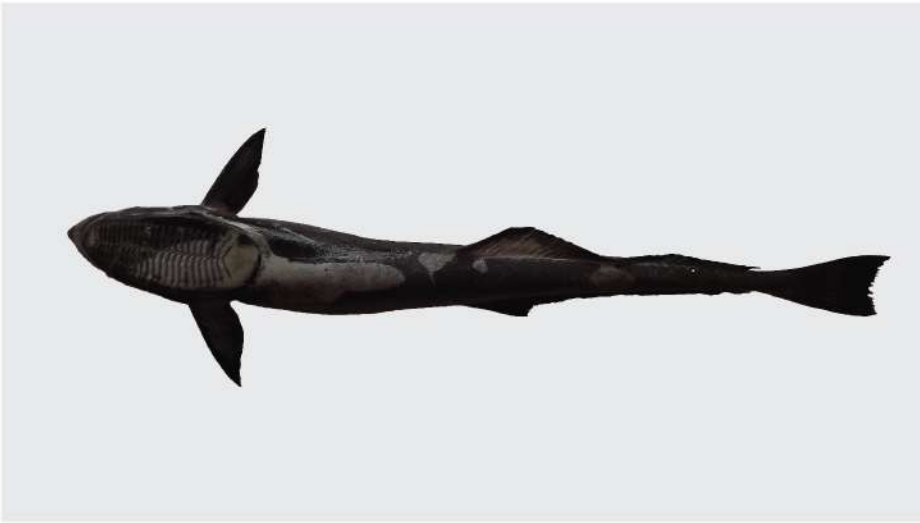
FAMILY Echeneidae
Remoras

Remoras are medium-sized, elongate and fusiform fish. Head wide, depressed; a transversely laminated, oval-shaped cephalic disc. Attaching to other fishes, cetaceans, sea turtles, whales, or dolphins with a sucking disc on head; a great preference or specificity toward certain hosts in some species. They may act as cleaners of several species of reef fishes. Occurs near as well as far from the coast. Often found free-swimming in shallow inshore areas and around coral reefs. Feeds on parasitic copepods attached to a host and food scraps dropped by the host.





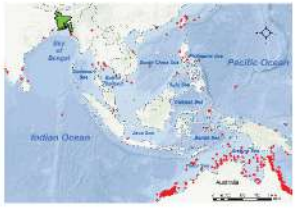
dorsal view of head



SL: 407 mm

Echeneis naucrates (Linnaeus, 1758)

Class **Actinopterygii**
Order **Carangiformes**
Family **Echeneidae**



Fin Formula: D-35; P_1-22; P_2-I, 5; A-35; C-12–20
Branchiostegal Rays: 9

Colour of body gray to blackish, with a white-edged black stripe from tip of lower jaw to caudal fin base. Upper and lower margins of fins whitish in juveniles. Pectoral fins blackish. Pelvic fins grayish to whitish. Body elongate. Sucking disc large with 18-28 laminae. Caudal fin lanceolate in young, middle rays elongate and filamentous; almost truncate in adults, with upper and lower lobes longer than middle rays. Pectoral fins pointed.

DNA Barcode: MK340612 (COI)

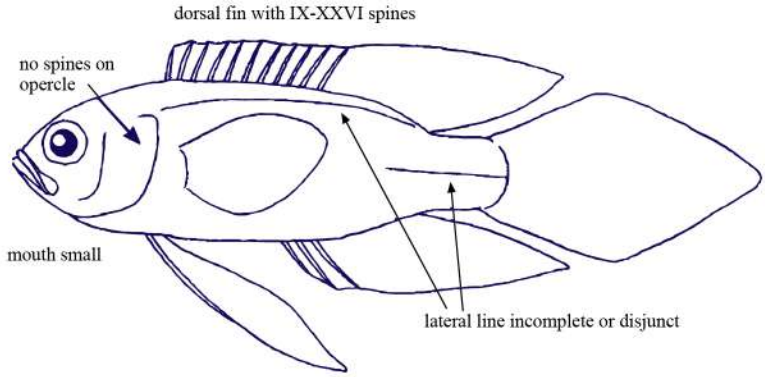
Illustrative Barcode:



MK340612 (COI)

FAMILY Plesiopidae
Roundheads

Medium sized fishes with elongate to oblong to oblong body. Highly variable, even hangeable for individuals from solid to spotted or barred. Occurs on coral reefs, sometimes deeper. Hidden in hole during day. Mainly solitary, sometimes schooling in caves. They feed on small invertebrates and fishes at night.





SL: 172 mm

Plesiops corallicola Bleeker, 1853

Class	**Actinopterygii**
Order	**Cichliformes**
Family	**Plesiopidae**



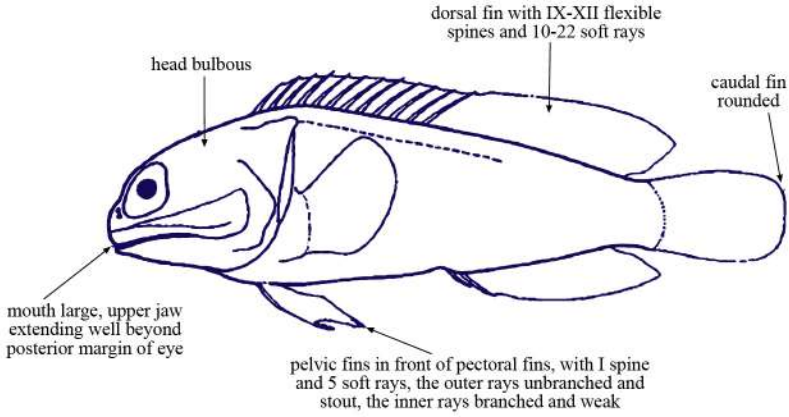
Fin Formula: D-XII, 8; P_1-21; P_2-I, 4; A-III, 8
Branchiostegal Rays: 6

Colour of head, trunk and caudal fin dark with numerous bluish spots. A large blue to black spot, subequal size with orbit diameter, on lower part of opercle. Pectoral fins translucent, bordered distally with rustcoloured. Body elongate. No teeth on tongue. Dorsal fin spines deeply incised and weak. Two disjunct lateral lines with tubed scales, one from upper end of opercle to last dorsal fin ray, the other running midlaterally onto caudal peduncle. Caudal fin rounded.

Remarks: New distributional record from Bangladesh.

FAMILY Opistognathidae
Jawfishes

Jawfishes are generally small-sized, moderately elongate fishes. Head bulbous. Eye relatively large, oriented dorsolaterally. Occur in shallow waters on sandy substrates. Inhabiting in burrows and usually found with only their heads protruding from the burrow. Living in small colonies or solitude. They are mouth brooders.





SL: 97 mm

Opistognathus rosenbergii Bleeker, 1856

Class **Actinopterygii**
Order **Cichliformes**
Family **Opistognathidae**



Fin Formula: D-XI, 13; P_1-21; P_2-I, 5; A-III, 13; C-18
Branchiostegal Rays: 6

Six irregular brown colour bands on sides of body forming a wavy mid-lateral stripe; dorsal fin with five black blotches separated by white bands posteriorly; caudal fin brownish shading to black ventrally, crescentic white band in middle of fin. Body compressed; mouth large, upper jaw short. Scales absent on head, nape, pectoral-fin base,breast, and anteriorly above lateral

Remarks: New distributional record from Bangladesh.

DNA Barcode: MW940139 (COI)

Illustrative Barcode:



MW940139 (COI)



SL: 84 mm

Opistognathus variabilis Smith-Vaniz, 2009

Class **Actinopterygii**
Order **Cichliformes**
Family **Opistognathidae**



Fin Formula: D-XI, 15; P_1-19; P_2-I, 5; A-III, 15; C-18
Branchiostegal Rays: 6

Colour of body mottled with various shades of brown. Usually a single black stripe at the inner lining of upper jaw and adjacent membranes; lateral-line ends below verticals between segmented dorsal-fin rays 3-6 (typically fourth or fifth). Pectoral fin yellow wish, dorsal, anal, pelvic and caudal fins blackish. Small-sized, moderately elongate body. Head bulbous. Eye relatively large, oriented dorsolaterally. Mouth large, posterior margin of maxilla extending well beyond eye.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK340669 (COI)

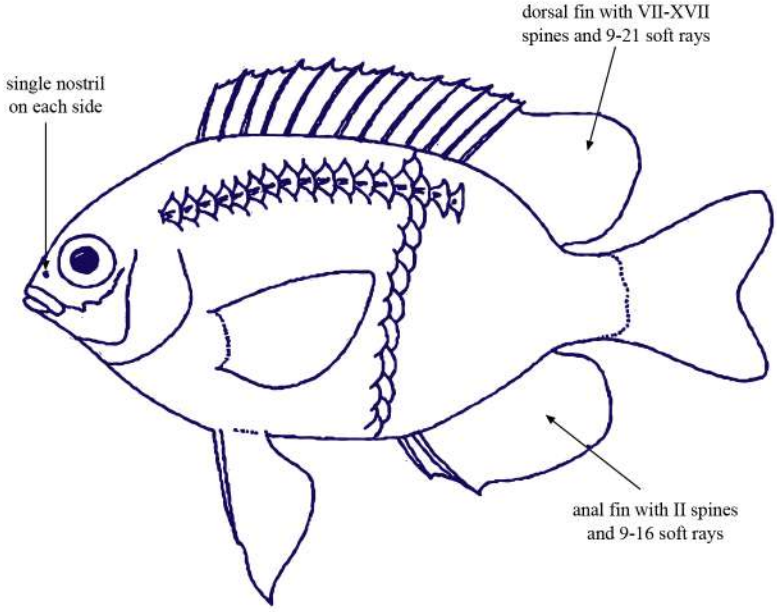
Illustrative Barcode:



MK340669 (COI)

FAMILY Pomacentridae
Damselfishes

Damselfishes refers to a large and diverse group of relatively small-sized fish; body compressed, ovate to almost circular. Found in coastal waters such coral reefs and rocky shores, and often enter brackish estuaries or freshwater streams. They occupy many different niches on the reef habitat such as some species prefer branching corals, some tabulate coral species. Several species prefer holes in the reef structure. They live close to the substrate for protection and to obtain food. Their food preferences zooplankton to macro algae. Species that feed on plankton can be seen hovering over corals in schools. There are some species that feed exclusively on algae. They maintain patches of algae within the territory of each fish and allow only the required species of algae to grow and weed out all other species of algae. Most damselfish species form small group or school.





SL: 61 mm

Abudefduf septemfasciatus (Cuvier, 1830)

Class	**Actinopterygii**
Order	**Cichliformes**
Family	**Pomacentridae**



Fin Formula: D-XIII, 14; P_1-19; P_2-I, 5;A-II, 12; C-16
Branchiostegal Rays: 6

Whitish body with six dark bands, each wider than the spaces between. There is a seventh band on the head that has spots below. A small black spot is present on the upper pectoral fin base; anal and caudal fins dusky; pectoral fins yellowish with basal triangular black spot. Body deep and compressed. Margin of opercle smooth; caudal fin forked; lobes rounded; soft dorsal.

DNA Barcode: MK340573 (COI)

Illustrative Barcode:



MK340573 (COI)



SL: 102 mm

Abudefduf sordidus (Forsskal, 1775)

Class **Actinopterygii**
Order **Cichliformes**
Family **Pomacentridae**



Fin Formula: D-XIII, 13; P_1-18; P_2-I, 5; A-II, 15; C-17
Branchiostegal Rays: 6

Body yellowish-white, lighter below with 5-6 dark grey bars on sides; a black spot at tip of caudal fin base; all fins dusky. Body deep and compressed. Posterior margin of preopercle smooth. Suborbital scaled, with entire ventral margin. Teeth on jaws uniserial, incisor like. Caudal fin forked; no conspicuous projecting spine like rays at upper and lower edges of caudal fin base.

DNA Barcode: MK340576 (COI)

Illustrative Barcode:



MK340576 (COI)



SL: 70 mm

Chromis cinerascens (Cuvier, 1830)

Class **Actinopterygii**
Order **Cichliformes**
Family **Pomacentridae.**



Fin Formula: D-XIII, 11; P_1-19; P_2-I, 5; A-II, 11; C-20
Branchiostegal Rays: 4

Colour of head and body gray or dark gray brown dorsally, paler and tinged with gold ventrally; pelvic and anal fins whitish. Body deep and compressed. Posterior margin of preopercle smooth. Suborbital scaled, with entire ventral edge. Teeth on jaws conical, muliserial; teeth of outermost row larger than those of inner rows. Caudal fin forked; some conspicuous projecting spine like rays at upper and lower edges of caudal fin base.

DNA Barcode: MK340603 (COI), MK335848 (16S)

Illustrative Barcode:



MK340603 (COI)



SL: 79 mm

Neopomacentrus cyanomos (Bleeker, 1856)

Class	**Actinopterygii**
Order	**Cichliformes**
Family	**Pomacentridae**



Fin Formula: D-XIII, 12; P_1-18; P_2-I, 5; A-II, 12; LLp-17
Branchiostegal Rays: 6

Colour of head and body dark brownish gray; a black blotch around dorsal end of gill opening; a minute black spot at dorsal most part of pectoral-fin base; posterior part of dorsal fin pale or yellow; caudal fin pale or yellow, with black dorsal and ventral margins. Body compressed, slender. Caudal fin forked, with filamentous upper and lower lobes; no conspicuous projecting spine like rays at upper and lower edges of caudal fin base.

DNA Barcode: MT374163 (COI)

Illustrative Barcode:



MT374163 (COI)



Pomacentrus adelus Allen, 1991

Class **Actinopterygii**
Order **Cichliformes**
Family **Pomacentridae**



Color of head, body and fins blackish brown, ocellated spot with neon blue edge present on posterior part of dorsal fin; some blue lines on head, numerous blue dots on head and body, and sky-edged black ocellus on posterior part of dorsal fin. Body ovate. mouth small, slightly protractile. Small sized fish.

Remarks: New distributional record from Bangladesh. This species has been recorded during underwater scuba diving.



Pomacentrus similis Allen, 1991

Class **Actinopterygii**
Order **Cichliformes**
Family **Pomacentridae**



Body colour deep blue, tail pale, and ventral fins blackish in colour. Caudal fin yellowish, with dusky posterior margin. Body relatively elongate, compressed. Caudal fin emarginate.

Remarks: New distributional record from Bangladesh. This species has been recorded during underwater scuba diving.



Pomacentrus proteus Allen, 1991

Class **Actinopterygii**
Order **Cichliformes**
Family **Pomacentridae**



Colour of adults yellowish brown with blue spots or streaks on most scales; blue line marking on rear dorsal fin. Body relatively elongate, compressed. Caudal fin emarginate.

Remarks: New distributional record from Bangladesh. This species has been recorded during underwater scuba diving.



SL: 77 mm

Pomacentrus bangladeshius Habib, Islam, Nahar & Neogi, 2020

Class **Actinopterygii**
Order **Cichliformes**
Family **Pomacentridae**



Fin Formula: D_1- XIV; D_2-13; P_1-19; P_2- I, 5; A-II, 14; C-17
Branchiostegal Rays: 5

Body colour olive to dark brown in freshly caught condition; premaxilla dark brown; iris of adult mostly yellow with a narrow bronze eye ring around pupil. Pectoral-fin base without black blotch. Margin of suborbital and preopercle with distinct serrations. A prominent notch presents between preorbital and suborbital. Body ovate and compressed. Snout scaly to about level of nostrils or beyond, scales absent in pre-orbital and suborbital. Axillary scale present above base of pelvic fin. Single scale row on preopercle behind the eye and 3 rows of scales present on preoperclebelow the eye.

Remarks: New species to science from Bangladesh.

DNA Barcode: MK340682 (COI), MK340683 (COI)

Illustrative Barcode:



MK340682 (COI)



SL: 71 mm

Pomacentrus tripunctatus Cuvier, 1830

Class **Actinopterygii**
Order **Cichliformes**
Family **Pomacentridae**



Fin Formula: D-XIII, 14; P_1-17; P_2-I, 5; A-II, 14; C-18
Branchiostegal Rays: 5

Colour of adults are brownish with darker scale margins. They have a large dark spot on the upper caudal peduncle. Juveniles are lighter in colour and have a large, blue-margined black spot on the dorsal fin. Small sized. Body compressed, ovate to almost circular.

DNA Barcode: MK340684 (COI), MK340685 (COI), MK340686 (COI), MK335876 (16S), MK335877 (16S), MK335878 (16S)

Illustrative Barcode:



MK340684 (COI)



Stegastes obreptus (Whitley, 1948)

Class **Actinopterygii**
Order **Cichliformes**
Family **Pomacentridae**



Body colour brown with dark scale margins in adult; yellowish gold with narrow dark scale in juvenile. Black spot or blotch on front dorsal fin. Blue spot present on head in juvenile; large black spot with yellow edging in front of dorsal fin. Body moderately deep, mouth terminal, small, oblique; forming an angle of about 30° to the horizontal axis of head and body; mouth terminal and slightly oblique.

Remarks: New distributional record from Bangladesh. This species has been recorded during underwater scuba diving.



SL: 105 mm

Stegastes apicalis (De Vis, 1885)

Class **Actinopterygii**
Order **Cichliformes**
Family **Pomacentridae**



Fin Formula: D-XIII, 14; P_1-20; P_2- I, 5; A- II,13; C-16
Branchiostegal Rays: 4

Body colour is generally dark brown. Occiput (forehead) dark brown and premaxilla nostril dark brown to black. Iris of adult mostly grey with a narrow bronze ring around the pupil. Dorsal spine and spinous membrane chocolate brown; dorsal ray membrane dark brown. Black bloch present between and dorsal spine. Pectoral and anal fin nearly black. Body moderately deep, mouth terminal, small, oblique; forming an angle of about 30° to the horizontal axis of head and body nostril round. Scales finely ctenoid.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK340724 (COI), MK335888 (16S)

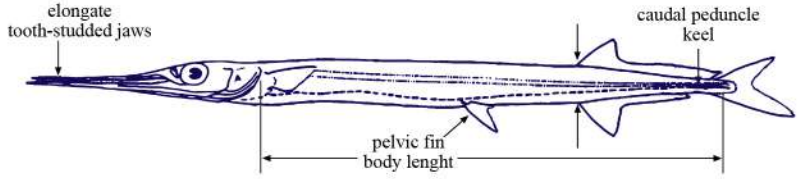
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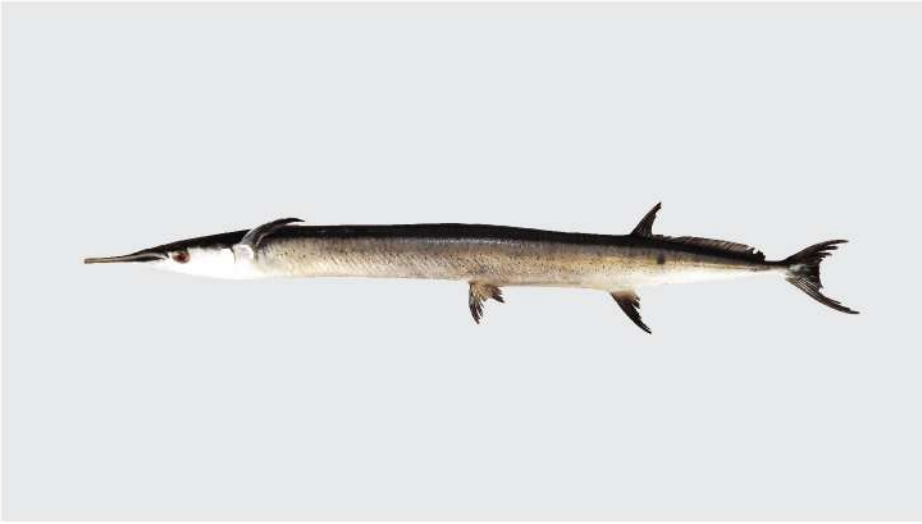


MK340724 (COI)

FAMILY Belonidae
Needlefishes

Elongate fishes with both upper and lower jaws extended into long beaks filled with sharp teeth. Most species are marine, but some occur in freshwaters. A pelagic species inhabiting offshore surface waters; inshore occurrences seem to be more frequent around islands than along the mainland coast. Carnivorous, feed mainly on small fishes which they catch sideways in their beaks.





SL: 660 mm

Ablennes hians (Valenciennes, 1846)

Class **Actinopterygii**
Order **Beloniformes**
Family **Belonidae**



Fin Formula: D-25; P_1-13; P_2-6; A-27; C-20–24
Branchiostegal Rays: 11

Colour of back bluish green, sides and belly silvery white, with 12 to 14 prominent dark vertical bars on side of body; tip of lower jaw red. Dorsal fin with a prominent dark lobe; pectoral fins with black tips; pelvic fins yellow. Body elongate and slender, greatly compressed laterally. Upper and lower jaws greatly elongated and studded with small, sharp teeth. Anterior part of dorsal and anal fins with high falcate lobes. Caudal peduncle compressed, with no lateral keels. Caudal fin deeply forked, the lower lobe much longer than upper. Scales very small.

DNA Barcode: MK340570 (COI), MK340571 (COI)

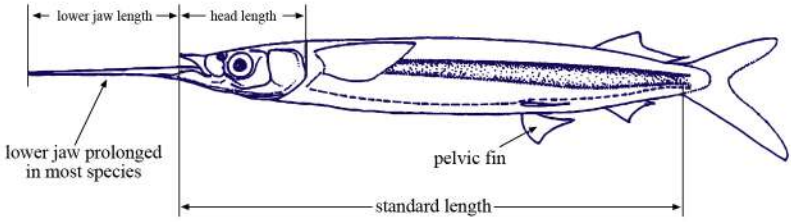
Illustrative Barcode:



MK340570 (COI)

FAMILY Hemiramphidae
Halfbeaks

Halfbeaks are pelagic fish small to medium sized, elongate fishes with long, weapon like lower jaw, projecting far beyond upper jaw. Live close to the surface. They travel over a wide area in search of food in the inshore and offshore coastal waters. Some species are common over reef habitats. Omnivorous, feed on floating seagrass pieces, insects, crustaceans, and small fishes.





SL: 191 mm

Hemiramphus far (Forsskal, 1775)

Class **Actinopterygii**
Order **Beloniformes**
Family **Hemiramphidae**



Fin Formula: D-13; P_1-12; P_2-6; A-10; C-18
Branchiostegal Rays: 13

Colour green or blue on the back and silvery white on the sides and ventrally; tip of lower jaw bright red or orange. Usually with 3 to 9, short dark vertical bars on sides of body. Body not ribbon shaped; elongate with prolonged lower jaw and short triangular upper jaw; both upper and lower jaws elongate and armed with needle-sharp teeth. Nostrils in pit anterior to eyes. No spines in fins; dorsal and anal fins posterior in position; pelvic fins abdominal in position; pectoral fins usually short. Lateral line running down from pectoral fin origin and then backwards along ventral margin of body. Scales moderately large, cycloid.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK561619 (16S)

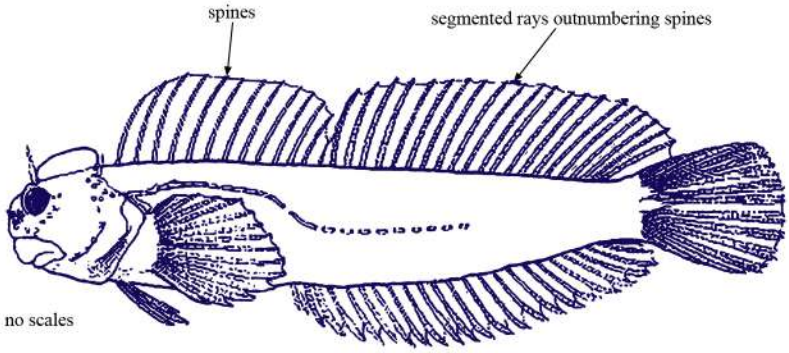
Illustrative Barcode:



MK561619 (16S)

FAMILY Blenniidae
Blennies

Blennies are small fish that live in benthic habitats of the sea and estuaries, usually at very shallow depths; often found in tide-pools, on the wharf pilings, rock, coral reefs, holes in the reef structure; occasionally in marine grass beds, found temperate waters throughout the world. Their territories are relatively small and they rest on the substrate most of the time. Although very abundant in littoral areas. Colour variable, often mottled or with irregular bands on body. Most blennies feed on algae and small invertebrates, but some attack other fish to steal bites of fin, scales, or skin.





Blenniella periophthalmus (Valenciennes, 1836)

Class **Actinopterygii**
Order **Blenniiformes**
Family **Blenniidae**



Body of males with 6-7 dusky bands with one or a pair of dark margined, pale, oblong spots on each band; dark spots on spinous dorsal, dusky lines on rayed dorsal. Females with spots on caudal peduncle; body sometimes with fine dark specks. Three colour-pattern types described for different localities.

Remarks: New distributional record from Bangladesh. This species has been recorded during underwater scuba diving.



SL: 79 mm

Istiblennius dussumieri (Valenciennes, 1836)

Class **Actinopterygii**
Order **Blenniiformes**
Family **Blenniidae**



Fin Formula: D-XIII, 21; P_1-14; P_2-I, 4; A-II, 23; C-12
Branchiostegal Rays: 6

Colour of body dusky gray with a series of 7 double, brownish orange bars; small dark spots scattered on body in females; outer part of median fins broadly dark in males. Body elongate. Nape lacking cirri. Supraorbital tentacle variable, with up to five branches on each side. Single blade-like occipital crest present in adult males. Nasal with short cirri. Canine teeth absent on dentary. Several caudal-fin rays branched. Lateral line ending below 4th to 10th dorsal spines.

DNA Barcode: MK340623 (COI), MK340624 (COI), MK335853 (16S), MK335854 (16S)

Illustrative Barcode:



MK340623 (COI)



SL: 152 mm

Petroscirtes breviceps (Valenciennes, 1836)

Class	**Actinopterygii**
Order	**Blenniiformes**
Family	**Blenniidae**

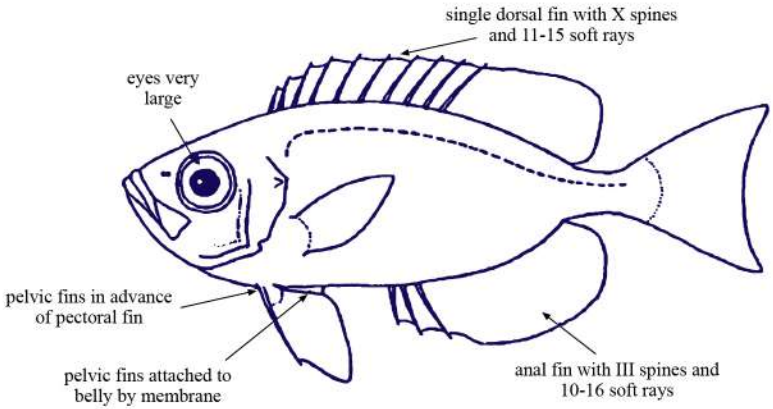


Fin Formula: D-XI, 21; P_1-15; P_2-I, 3; A-II, 20; C-12
Branchiostegal Rays: 7

Colour of body light brown with a broad darkbrown stripe from snout through eye to caudal peduncle, another dark stripe along dorsal fin rays. Highly variable and it can mimic with *Meiacanthus* species. Body slender; head moderately pointed. Eye moderately large.

FAMILY Priacanthidae
Bigeyes, glasseyes

Bigeyes are medium sized marine fish; body deep, compressed, and covered with extremely adherent, rough, spiny scales; eyes very large; mouth large. Occurs in shallow coral reef or rocky shore.

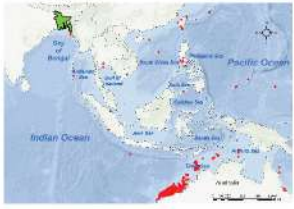




SL: 145 mm

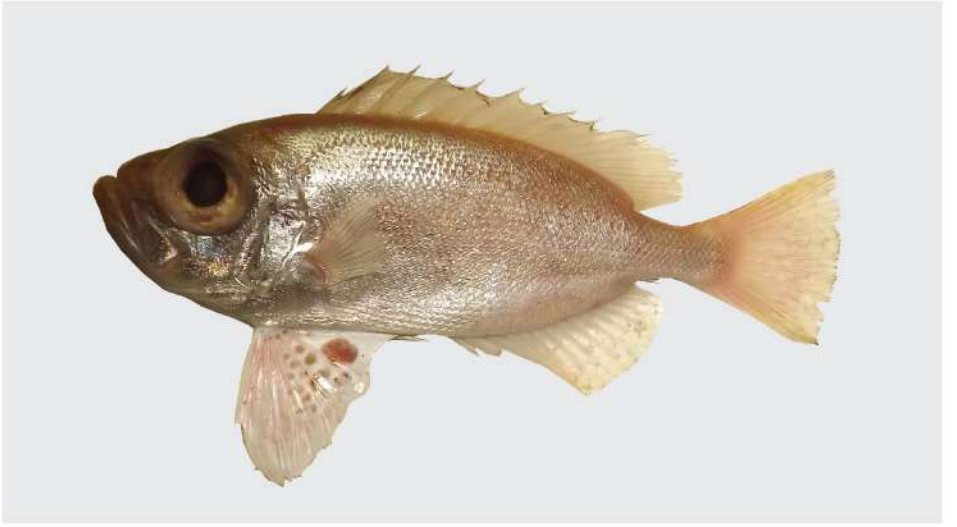
Priacanthus hamrur (Forsskal, 1775)

Class **Actinopterygii**
Order **Perciformes**
Family **Priacanthidae**



Fin Formula: D-X, 14; P_1-19; P_2-I, 5; A-III, 15
Branchiostegal Rays: 6

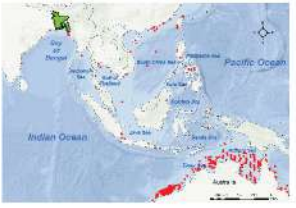
Body colour red to purplish red, lighter below. Pelvic fins black or partly black, no spots but usually a dusky margin to dorsal, anal and caudal fins. Bars sometimes present on body. Body stocky and compressed; eyes large. Mouth oblique, the lower jaw prominent. Caudal fin feebly crescentic. Scales small.



SL: 147 mm

Priacanthus tayenus Richardson, 1846

Class	**Actinopterygii**
Order	**Perciformes**
Family	**Priacanthidae**



Fin Formula: D-X, 14; P_1-19; P_2-I, 5; A-III, 14
Branchiostegal Rays: 6

Body colour red with pinkish silvery reflection. Fins pinkish; pelvic fins with characteristic small deep purple to inky black spots in membrane with one or two larger spots in connective membrane to belly. Body moderately deep, laterally compressed. A strong spine at angle of preopercle. Caudal fin truncate. Scales small.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MT379892 (COI)

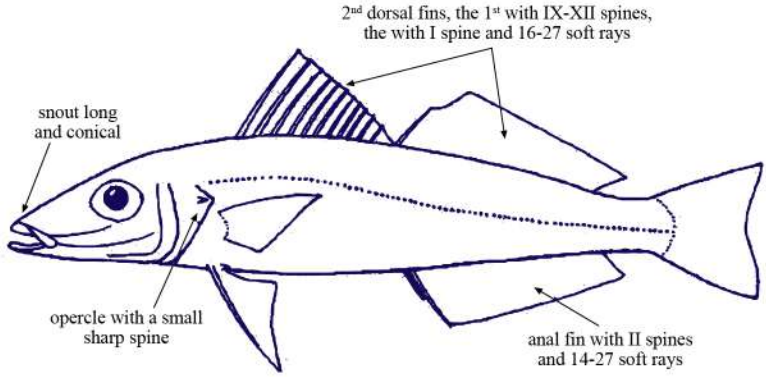
Illustrative Barcode:



MT379892 (COI)

FAMILY Sillaginidae
Sillagos

Sillaginids are moderate-sized, elongate fish. They are inshore, bottom-dwelling, schooling fish with a few species found in deeper water. Very few species are reef associated. They frequently enter estuaries, penetrating into fresh water for brief periods. They feed mainly on benthic organisms.



EN
Silver sillago

LN
Tool bele, Sundra baila (তুল বেলে, সুন্দ্রা বাইলা)

LC



SL: 123 mm

Sillago mengjialensis Saha et al., 2022

Class	**Actinopterygii**
Order	**Perciformes**
Family	**Sillaginidae**



Fin Formula: D_1-XI; D_2-I, 20; P_1-16; P_2-I, 5; A-II, 21; C-18
Branchiostegal Rays: 5

Colour of body silvery, olive-gray above, and with indistinct, silvery yellow mid-lateral band; soft dorsal with rows of darker spots. Body cylindrical; snout pointed; upper profile of head slightly convex; preopercular margin serrated; eye about half snout; small, backwardly directed spines on operculum; teeth in a broad, villiform.

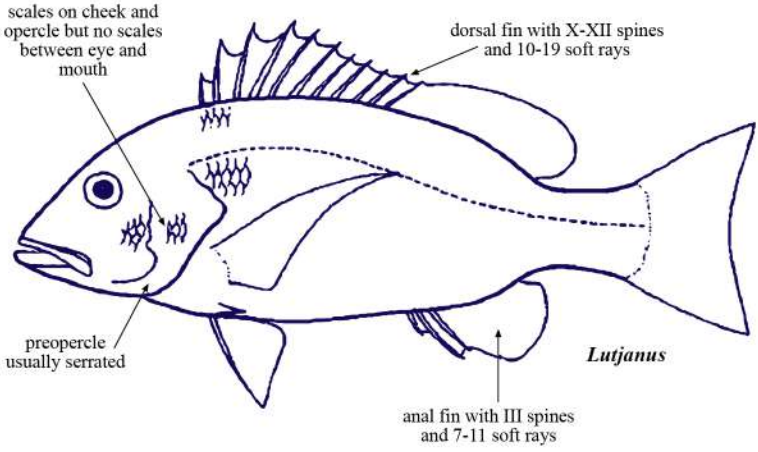
DNA Barcode: MK340719 (COI)

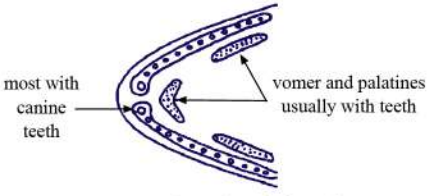
Illustrative Barcode:



FAMILY Lutjanidae
Snappers

Typical perch-like fish, oblong in shape, moderately compressed. Snappers are a common group of fishes on reef habitats. Juveniles of some species are on inshore reefs and among seagrass meadows. Some species are found in deep reef habitats. Snappers feed on small fishes, crustaceans, cephalopods and other benthic invertebrates. Most species are active at night.





upper jaw and roof of mouth



SL: 124 mm

Lutjanus erythropterus Bloch, 1790

Class **Actinopterygii**
Order **Perciformes**
Family **Lutjanidae**



Fin Formula: D-XI, 14; P_1-17; P_2-I, 5; A-III, 9; C-20
Branchiostegal Rays: 7

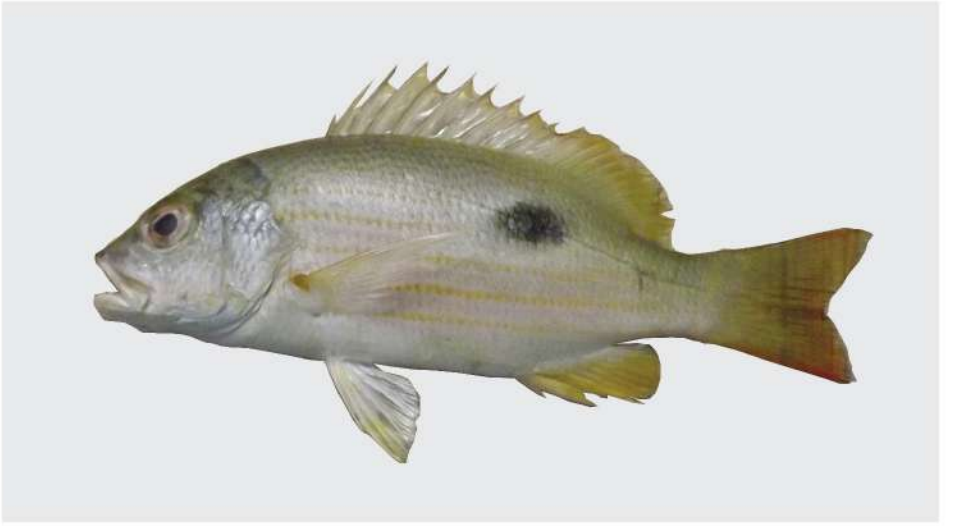
Body reddish or brownish in colour. Head region contain a brownish band that extend to the base of the dorsal fin. Dorsal fin grey colour with a brown anterior margin. Pectoral fin brownish. Pelvic and anal fin grey colour. Caudal fin brown and caudal peduncle contain a large black mark surrounded by creamy white border. Body large, elongated and laterally compressed. Dorsal profile of head steeply sloped. Mouth large, terminal and pointed. Head large in comparison with body. Nostril rounded. Barble absent. Lateral line single, complete and curved. Eye dorsal in position. Dorsal fin single, large and spine present. Fifth dorsal spine is the longest. Caudal fin truncate.

DNA Barcode: MK340640 (COI), MK340641 (COI)

Illustrative Barcode:



MK340640 (COI)



SL: 124 mm

Lutjanus fulviflamma (Forsskal, 1775)

Class **Actinopterygii**
Order **Perciformes**
Family **Lutjanidae**



Fin Formula: D-X, 14; P_1-17; P_2-I, 5; A-III, 8; C-20
Branchiostegal Rays: 7

Colour of back and upper sides brown; lower sides whitish or light brown; whitish to yellow on belly; 6 or 7 yellow stripes on sides; a prominent black spot at level of lateral line below base of anterior part of soft portion of dorsal fin; fins yellowish. Body large, elongated, moderately deep to somewhat slender. Caudal fin truncate. Scale rows on back rising obliquely above lateral line.

DNA Barcode: MK027401 (COI)

Illustrative Barcode:



MK027401 (COI)



SL: 143 mm

Lutjanus fulvus (Forster, 1801)

Class **Actinopterygii**
Order **Perciformes**
Family **Lutjanidae**



Fin Formula: D-X, 14; P_1-16; P_2-I, 5; A-III, 8; C-18
Branchiostegal Rays: 7

Colour of dorsal side is whitish or pale yellow and ventral side yellowish. Upper side of the eye with yellow margin. Dorsal and caudal fins are black with a narrow white border. Pectoral, pelvic and anal fins are yellow in colour. Body large, elongated and laterally compressed. Dorsal profile of head steeply sloped. Mouth large, terminal and pointed. Head moderate in comparison with body. Scale ctenoid, scale rows on back rising obliquely above lateral line. Teeth canine present along the upper jaw. Jaws medium and equal. Nostril rounded. Barble absent. Lateral line single, complete and curved. Eye dorsal in position. Caudal fin emarginate. Fourth dorsal spine is the longest.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK340642 (COI), MK335865 (16S)

Illustrative Barcode:



MK340642 (COI)



SL: 126 mm

Lutjanus johnii (Bloch, 1792)

Class **Actinopterygii**
Order **Perciformes**
Family **Lutjanidae**



Fin Formula: D-X, 14; P_1-17; P_2-I, 5; A-III, 8; C-20
Branchiostegal Rays: 7

Colour generally yellow with bronze to silvery sheen, grading to silvery white on belly; a round black spot, larger than eye, on the back, mainly above lateral line. Body moderately deep. Caudal fin truncate or slightly emarginate. Scale rows on back parallel to lateral line.

DNA Barcode: MK340643 (COI), MK340644 (COI)

Illustrative Barcode:



MK340643 (COI)



SL: 163 mm

Lutjanus lemniscatus (Valenciennes, 1828)

Class **Actinopterygii**
Order **Perciformes**
Family **Lutjanidae**



Fin Formula: D-X, 14; P_1-16; P_2-I, 5; A-III, 8; C-18
Branchiostegal Rays: 7

Colour of back and upper sides gray-brown or olive; sides gray, brown or reddish; juveniles with a broad black horizontal band from snout tip to caudal fin base. Body moderately deep. Preopercular notch and knob poorly developed. Caudal fin truncate or slightly emarginate. Scale rows on back rising obliquely above lateral line.

DNA Barcode: MK340645 (COI), MK340646 (COI), MK340647 (COI)

Illustrative Barcode:



MK340645 (COI)



SL: 164 mm

Lutjanus lunulatus (Park, 1797)

Class **Actinopterygii**
Order **Perciformes**
Family **Lutjanidae**



Fin Formula: D-X, 14; P_1-17; P_2-I, 5; A-III, 8; C-18–20
Branchiostegal Rays: 7

Dorsal side reddish, upper part of ventral side is reddish pink, and lower part yellowish. Dorsal fin greyish with a reddish colour margins at the anterior part. Pectoral, pelvic and anal fins are yellow in colour. Caudal fin reddish with a black lunar shape marking. Body large, elongated and laterally compressed. Dorsal profile of head steeply sloped. Mouth large, oblique shape and mouth position terminal. Head large in comparison with body. Scale ctenoid, scale rows on back rising obliquely above lateral line. Jaws medium and equal. Nostril rounded. Barble absent. Lateral line single, complete and curved. Eye dorsal in position. Caudal fin emarginate. Fourth dorsal spine is the longest.

DNA Barcode: MK340649 (COI), MK340650 (COI), MK340651 (COI)

Illustrative Barcode:



MK340649 (COI)

EN
Bigeye snapper, Rosy snapper

LN
Boro choukhha koral, Ranga choi, Kholddia machh
(বড় চৌক্ষা কোরাল, রাঙা চই, খোলাদ্দিয়া মাছ)

LC



SL: 120 mm

Lutjanus lutjanus Bloch, 1790

Class **Actinopterygii**
Order **Perciformes**
Family **Lutjanidae**



Fin Formula: D-XI, 13; P_1-17; P_2-I, 5; A-III, 8; C-17–19
Branchiostegal Rays: 7

Dorsal side of the body is golden brown in colour and ventral side is silvery white. A yellow stripe running along the middle of the body that reach nearly to the eye. Dorsal fin is yellow in colour, pectoral fin yellowish, ventral fin orange in colour and caudal fin is pale yellow. Body elongated, laterally compressed. Dorsal side of the head gently sloped. Size moderate, dorsal profile convex. Head moderate in size. Mouth is terminal, superior and mouth protractile. Nostril rounded. Ctenoid scale present along the body. Lateral line present, complete and slightly curved. Eye slightly dorsal in position and large.

DNA Barcode: MK340652 (COI), MK340653 (COI), MK340654 (COI)

Illustrative Barcode:



MK340652 (COI)



SL: 127 mm

Lutjanus xanthopinnis Iwatsuki, Tanaka & Allen, 2015

Class **Actinopterygii**
Order **Perciformes**
Family **Lutjanidae**



Fin Formula: D-X, 13; P_1-16; P_2-I, 5; A-III, 8; C-17–20
Branchiostegal Rays: 7

Body yellowish or brownish in colour. Fine straight yellow lines on the lower half of the body, and similar lines running obliquely above the lateral line. Dorsal fin black or grey colour with yellowish tip. Pectoral yellow and pelvic fin whitish. Anal and caudal fin yellow to dark yellow in colour. Body elongated, laterally compressed. Dorsal profile more convex than ventral. Dorsal profile of head moderately to gently sloped. Head moderate in comparison with body. Scale ctenoid, scale rows on back rising obliquely above lateral line. Jaws large and equal. Nostril rounded. Barble absent. Lateral line single, complete and curved. Eye slightly dorsal in position. Caudal fin emarginate not forked. Fourth dorsal spine is the longest.

DNA Barcode: MK340655 (COI), MK340656 (COI), MK340657 (COI)

Illustrative Barcode:



MK340655 (COI)



SL: 236 mm

Lutjanus rivulatus (Cuvier, 1828)

Class	**Actinopterygii**
Order	**Perciformes**
Family	**Lutjanidae**



Fin Formula: D-X, 16; P_1-17; P_2-I, 5; A-III, 8; C-17–19
Branchiostegal Rays: 7

Dorsal side brownish and ventral side blackish. Head with numerous blue and yellow wavy line. Body with 5 brown transverse bars. A chalky white spot present just below the anterior part of the dorsal soft rays. Dorsal fin black with a black lower margin. Pectoral and pelvic fin blackish. Anal fin is also black with a lower white margin and caudal fin dark in colour. Body large, elongated and laterally compressed. Dorsal profile of head steeply sloped. Mouth large, oblique and terminal. Lip large and fleshy. Head moderate in comparison with body. Jaws large and equal. Nostril rounded. Lateral line single, complete and curved. Eye dorsal in position. Caudal fin truncated.

DNA Barcode: MK340658 (COI), MK340659 (COI), MK340660 (COI)

Illustrative Barcode:



MK340658 (COI)



SL: 103 mm

Lutjanus indicus Allen, White & Erdmann, 2013

Class **Actinopterygii**
Order **Perciformes**
Family **Lutjanidae**



Fin Formula: D-X, 14; P_1-16; P_2-I, 5; A-III, 8; C-18
Branchiostegal Rays: 7

Colour of back and upper side brownish; lower sides and belly pink to whitish with a silvery sheen; a black spot, sometimes faint, is on the lateral line below the anterior portions of the soft dorsal fin; adults from the Indian Ocean usually with 7 or 8 narrow golden brown stripes on the sides; juveniles whitish with 4 black stripes on the sides and with a round black spot on upper back. Body moderately deep. Anterodorsal profile of head steeply to moderately sloped; preorbital width about equal to, or slightly less than eye diameter. Posterior profile of dorsal and anal fins rounded; caudal fin truncate. Scale rows on back rising obliquely above lateral line.

DNA Barcode: MK340661 (COI)

Illustrative Barcode:



MK340661 (COI)



SL: 182 mm

Pinjalo pinjalo (Bleeker, 1850)

Class **Actinopterygii**
Order **Perciformes**
Family **Lutjanidae**



Fin Formula: D-XI, 14; P_1-18; P_2-I, 5; A-III, 10; C-18
Branchiostegal Rays: 7

Colour pink to silvery lavender dorsally, shading to pale pink or silvery white ventrally, with diagonal yellowish brown to brown red lines following scale rows on nape and dorsal one-half to two-thirds of body. Body moderately deep, laterally compressed. Dorsal profile of head convex. Interorbital region strongly convex. Vomerine tooth patch triangular or chevron-shaped. Dorsal fin continuous without a notch between spinous and soft portions. Caudal fin deeply emarginated.

DNA Barcode: MT379894 (COI)

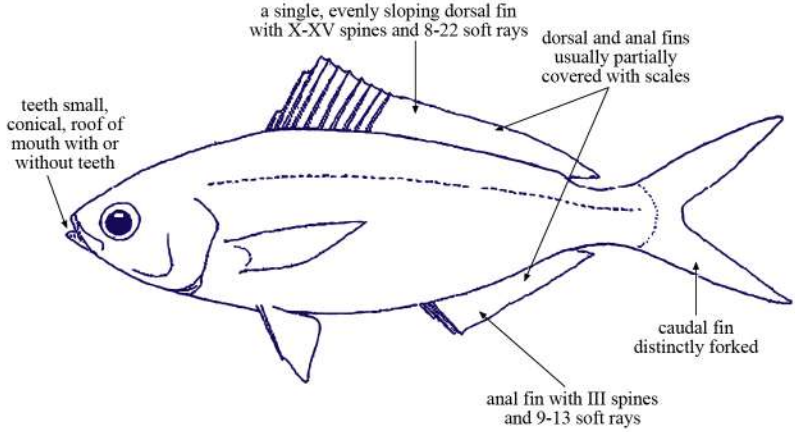
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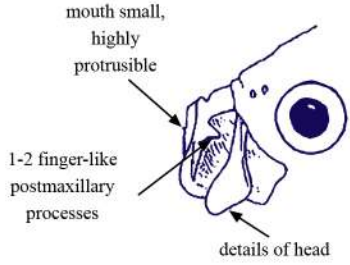


MT379894 (COI)

FAMILY Caesionidae
Fusiliers

Fusiliers are oblong to fusiform, moderately compressed, medium-sized to small; Eye moderately large, its diameter longer than snout length. longitudinal axis from tip of snout to middle of caudal fin passing through center of eye. They are found in large schools on coral reefs. Schooling, often in groups with more than one species. Primarily plankton feeder.







SL: 109 mm

Caesio cuning (Bloch, 1791)

Class	**Actinopterygii**
Order	**Perciformes**
Family	**Caesionidae**



Fin Formula: D-X, 15; P_1-19; P_2-I, 5; A-III, 11; C-18–20
Branchiostegal Rays: 7

Colour of caudal fin, upper caudal peduncle and posterior portion of back yellow; upper body if not yellow, grayish blue; lower sides and belly white or pinkish; axil and upper base of pectoral fins black; dorsal fin yellow posteriorly and grayish blue anteriorly. Body fairly deep and compressed. A single post-maxillary process; small conical teeth in jaws. Scale rows above lateral line; dorsal and anal fins scaly.

DNA Barcode: MK340588 (COI), MK340589 (COI), MK340590 (COI)

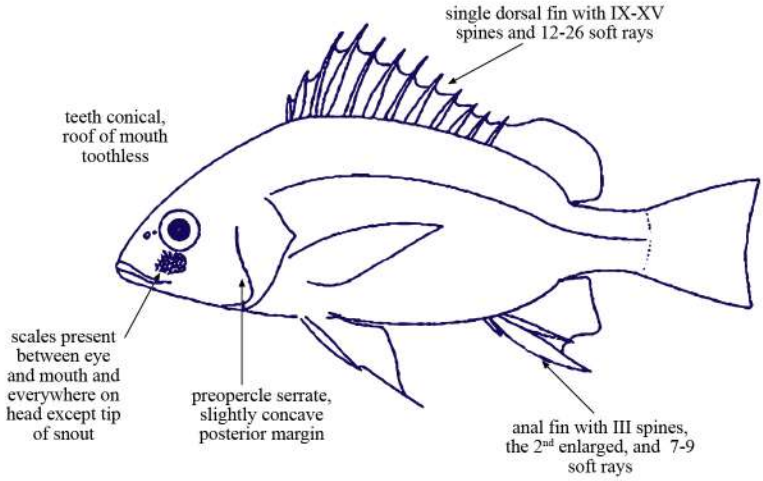
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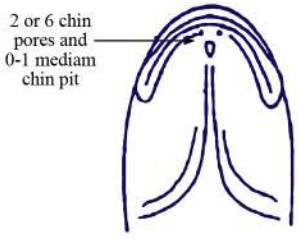


MK340588 (COI)

FAMILY Haemulidae
Grunts, sweetlips

Grunts and sweetlips belong to the family Haemulidae. Medium-sized, oblong and compressed fishes. Inhabit coastal waters including reefs, bays, and estuaries. The common name of sweetlips is derived from their thickened lips, and grunts from the grunting sound they produce by grinding their pharyngeal teeth. Grunts form schools and can be seen under ledges or over coral heads during daytime. Juvenile grunts are not brightly coloured like juvenile sweetlips. Carnivorous, feed on small benthic invertebrates or fish.





ventral view of head
(Pomadasys)



SL: 105 mm

Plectorhinchus pictus (Thunberg, 1792)

Class **Actinopterygii**
Order **Perciformes**
Family **Haemulidae**



Fin Formula: D-X, 23; P_1-17; P_2-I, 5; A-III, 7; C-17–20
Branchiostegal Rays: 7

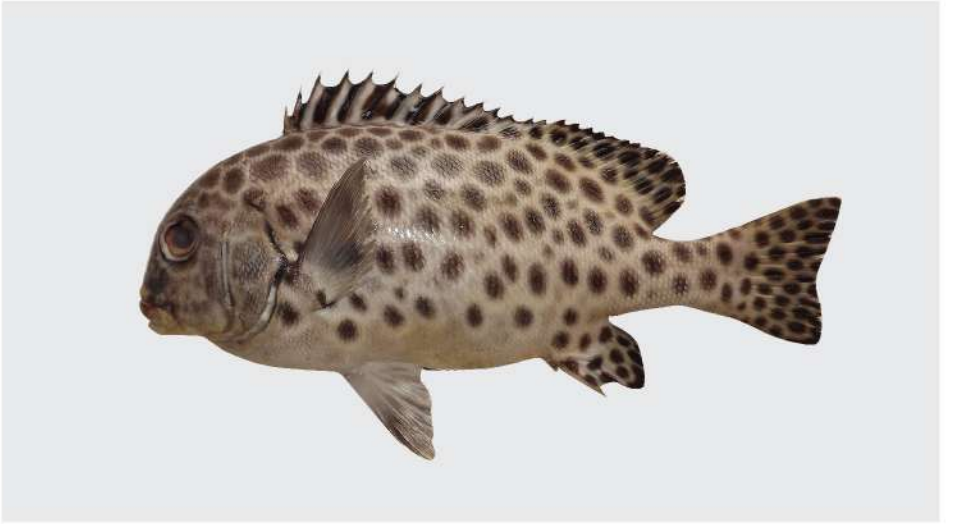
Colour varying much by size; large adult silvery grey, with or without dusky spots; sub-adult pale grey with numerous bright yellow or dusky spots or lines on head, body and fins; juvenile with broad longitudinal black bands on the body. Body deep and compressed. Profile of snout steep; lips fleshy; chin with six pores; lower jaw without longitudinal groove at midline.

DNA Barcode: MK340608 (COI), MK340609 (COI)

Illustrative Barcode:



MK340608 (COI)



SL: 300 mm

Plectorhinchus macrospilus (Satapoomin & Randall, 2000)

Class **Actinopterygii**
Order **Perciformes**
Family **Haemulidae**



Fin Formula: D-XII, 21; P_1-17; P_2-I, 5; A-III, 8; C-20
Branchiostegal Rays: 7

Colour whitish to grayish ground colour on most parts of body; yellowish on soft portions of median fins, contrasting with many large mostly larger or equal to orbit diameter, irregularly rounded black spots on body, nape, and soft portions of median fins, and smaller black spots on head. Body oblong, compressed. Dorsal profile of head strongly convex. Mouth small; lips fleshy, moderately thick; chin with 6 pores and no median pit. Dorsal fin slightly notched. Caudal fin truncate. Scales ctenoid; front of snout, lips and chin naked.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK560521 (COI), MK340677(COI), MK561628 (16S), MK335874 (16S)

Illustrative Barcode:



MK561628 (16S)



SL: 93 mm

Pomadasys andamanensis McKay & Satapoomin, 1994

Class **Actinopterygii**
Order **Perciformes**
Family **Haemulidae**



Fin Formula: D-XII, 13; P_1-18; P_2-I, 5; A-III, 8; C-20
Branchiostegal Rays: 7

Silvery white with 4 horizontal black or dark brown stripes on dorsal half of body; anal fin with a dark brown streak or blotch covering anterior two-thirds of soft-rayed portion. Body deep, compressed. Snout round, dorsal profile of head straight. Mouth small, terminal, without fleshy lips; 2 pores and a median pit on chin. Scales ctenoid.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK340687 (COI), MK561623 (16S)

Illustrative Barcode:



MK340687 (COI)



SL: 187 mm

Pomadasys furcatus (Bloch & Schneider, 1801)

Class **Actinopterygii**
Order **Perciformes**
Family **Haemulidae**



Fin Formula: D-XII, 16; P_1-18; P_2-I, 5; A-III, 9
Branchiostegal Rays: 7

Body colour light bluish dorsally, silver ventrally. Head bluish. Dorsal fin bluish with yellow-black spots; except interspace between first two spines, one spot relatively larger present between interspaces of all spines. Pectoral fin blackish with a dark orange yellow spot at the upper base. Pelvic and anal fin blackish with whitish base. Caudal fin light bluish, with 6 rows of yellow-black spots present in concave series and vertically from tip to base; a yellow band present before black tip. Body elongated, laterally compressed, convex dorsally and straight ventrally. Mouth slightly inferior, slightly protractile oblique, large and placed sub-terminally. Jaws are large and unequal.Scales ctenoid. Lateral line is single, complete and curved. Dorsal fin single, continuous, large. Pectoral dagger shaped and placed high up on the body. Pelvic present at the forward. Anal spines in front. Caudal fin deeply emerginate.



SL: 145 mm

Pomadasys kaakan (Cuvier, 1830)

Class **Actinopterygii**
Order **Perciformes**
Family **Haemulidae**



Fin Formula: D-XII, 14; P_1-16; P_2-I, 5; A-III, 8
Branchiostegal Rays: 7

Body colour silver dorsally, whitish ventrally with a golden tint on the sides. Body with 7 pairs of dark spots arranged into vertical interrupted bars on the upper sides. Head olive yellowish, snout blackish. Dorsal fin white, tipped with black membrane, two rows of black spots from intermembranous portion of 3rd spine to 10th spine, one black spot between 10th & 11th spine and soft part white, bordered with black. Pectoral fin brownish, with basal 1/3 portion reddish. Pelvic and anal fin whitish. Caudal fin whitish at the basal half and blackish at the rest half toward tip. Body moderately elongate, compressed. Chin with two pores and a median pit. Lateral line is single, complete and steeply curved at caudal peduncle. Dorsal fin continuous, notched starts from near base of pectoral and reaches upto the just opposite of anal fin. Caudal fin emarginate. Scales ctenoid.



SL: 126 mm

Pomadasys maculatus (Bloch, 1793)

Class **Actinopterygii**
Order **Perciformes**
Family **Haemulidae**



Fin Formula: D-XII, 14; P_1-17; P_2-I, 5; A-III, 7; C-18–20
Branchiostegal Rays: 7

Body colour silvery white, nape and back with a series of incomplete variable cross bars on the upper half of the body; spinous dorsal fin large with black blotch; caudal fin dusky distally. Body compressed; head and dorsal profile convex; mouth small and slightly oblique; narrow bands of small pointed teeth in the jaws. Dorsal and anal fin spines strong; caudal fin emarginated. Scales ctenoid, moderate; present on head excluding snout. Lateral line slightly arched.

DNA Barcode: MK340692 (COI), MK340693 (COI)

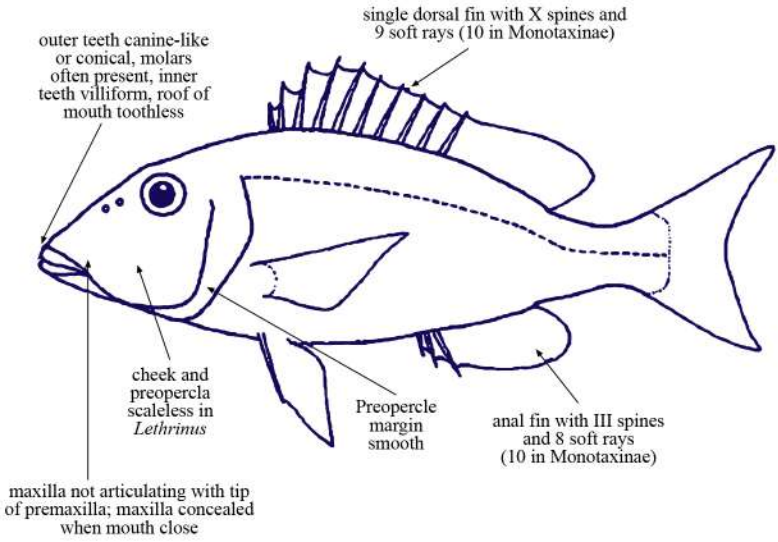
Illustrative Barcode:



MK340692 (COI)

FAMILY Lethrinidae
Emperors

Emperor fishes are medium to large-sized, oblong and compressed fishes. Body compressed. Commonly found in coastal waters around coral and rocky reefs, seagrass beds and mangroves. They are predators, mainly active at night. Most species of this family are capable of changing colour rapidly, depending on the substrate and their moods. Carnivorous, feed on various organisms, e.g. fishes, mollusks, crustaceans, polychaetes, and sea urchins.





SL: 194 mm

Lethrinus crocineus Smith, 1959

Class **Actinopterygii**
Order **Perciformes**
Family **Lethrinidae**



Fin Formula: D-X, 9; P_1-13; P_2-I, 5; A-III, 8; C-18
Branchiostegal Rays: 6

Colour of body or yellowish, base of scales sometimes black; head brown; fins pale or yellowish, the edge of the dorsal fin reddish or yellowish. Body fairly deep, dorsal profile near eye nearly straight; snout moderately short; snout angle relative to the upper jaw; interorbital space convex; posterior nostril an oblong longitudinal opening, closer to orbit than to anterior nostril or about halfway between orbit and anterior nostril; eye situated close or relatively removed from dorsal profile. Inner surface of pectoral fin densely covered with scales; posterior angle of operculum fully scaled or sometimes with a wide scaleless area. Caudal fin forked.

DNA Barcode: MK340636 (COI), MK340637 (COI), MK340638 (COI), MK340639 (COI)

Illustrative Barcode:



MK340636 (COI)



SL: 86 mm

Lethrinus lentjan (Lacepede, 1802)

Class **Actinopterygii**
Order **Perciformes**
Family **Lethrinidae**

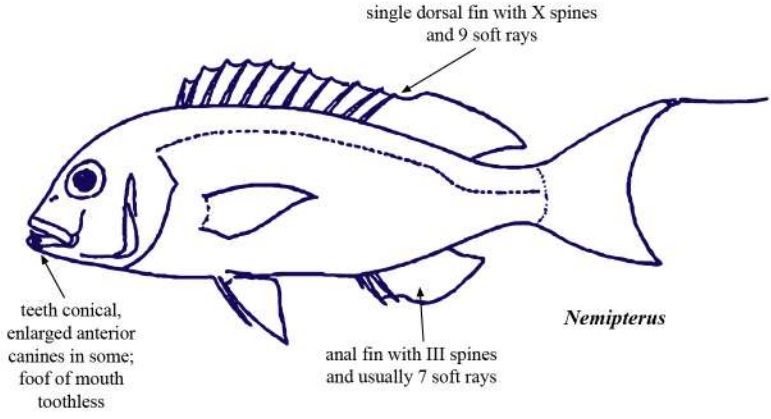


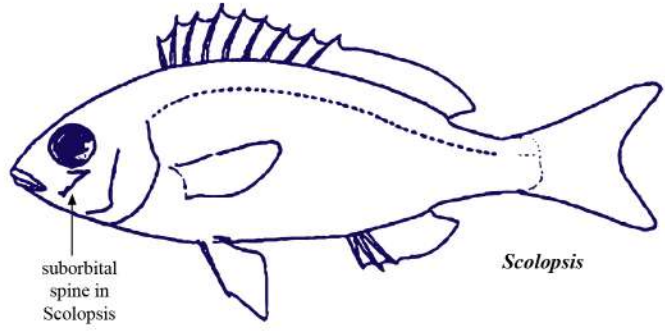
Fin Formula: D-X, 9; P_1-13; P_2-I, 5; A-III, 8; C-18
Branchiostegal Rays: 6

Body colour grayish dorsally, brownish ventrally, with five longitudinal yellow stripes; posterior margin of preopercle and opercle red. Dorsal fin blackish, tip reddish. Pectoral and pelvic fin yellowish. Anal fin light yellowish, base whitish. Caudal fin reddish, yellowish at the base. Body deep, elongated, laterally compressed. Dorsal profile of snout around eye convex. Jaws large and equal. Lateral line is single, complete and curved. Scales ctenoid; no scales on cheek; inner surface of pectoral fin base scaled. Caudal fin forked.

FAMILY Nemipteridae
Threadfin breams

Threadfin breams are medium sized, moderately elongate fishes. Head compressed; eyes moderately large. They are common reef fish on coastal and offshore reefs. Found in coral reefs and coastal to offshore shelf waters with sandy or muddy bottoms. They are closely associated with the sandy or muddy bottoms of the sea bed and rarely swim. They have a typical swimming behavior, the fish starts to move and then stops after a short distance and stays in mid water just above the bottom for a short while, before moving on and repeating the same behavior to scan the surrounding area to locate their food. They are carnivorous and feed on small fishes, crustaceans, cephalopods, and polychaetes.







SL: 138 mm

Scolopsis vosmeri (Bloch, 1792)

Class **Actinopterygii**
Order **Perciformes**
Family **Nemipteridae**





Fin Formula: D-X, 9; P1-18; P2-I, 5; A-III, 7; C-17–19
Branchiostegal Rays: 5

Colour of head and body brownish, paler ventrally; distinct, broad white vertical bar on head. Body deep. Suborbital with a large backwardly-pointed spine; no antrorse spine just below eye; external edge of maxilla smooth; lower limb of preopercle scaled. Pelvic fin reaching to or beyond anus when appressed; caudal fin forked.

DNA Barcode: MK340705 (COI), MK340706 (COI), MK340707 (COI)

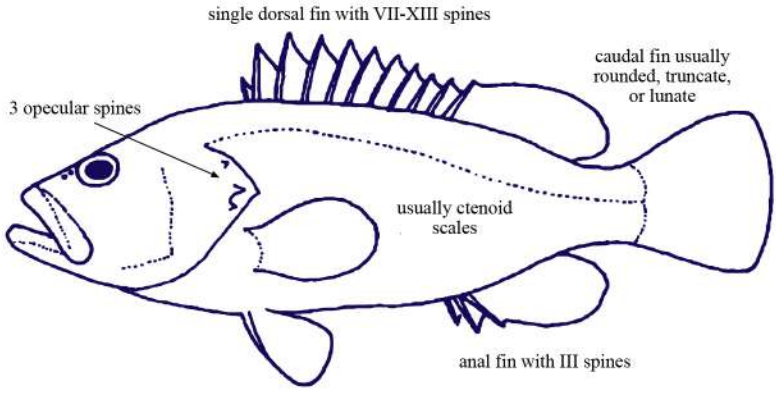
Illustrative Barcode:



MK340705 (COI)

FAMILY Epinephelidae
Groupers

Groupers belong to a commercially important group of fishes. Body variable in shape, from deep-bodied to elongate and little compressed to notably compressed; mouth large. They are common on coastal and offshore reef habitats. Benthic or bottom-orientated fishes, usually found on coral reefs or rocky substrata; most species occur on continental or insular shelves. All are predaceous, mainly feed on fishes, crustaceans, and cephalopods, while the smaller ones feed on zooplankton. Most species are protogynous hermaphrodites.





SL: 121 mm

Cephalopholis boenak (Bloch, 1790)

Class **Actinopterygii**
Order **Perciformes**
Family **Epinephelidae**



Fin formula: D-IX, 15; P_1-16; P_2-I, 5; A-III, 8; C-18–20
Branchiostegal Rays: 7

Colour brown with slightly irregular reddish brown bars on body; fins dark brown; distal margin of caudal fin bluish white; inside of the mouth orange. Small sized grouper with a stout body; mouth oblique; teeth fine and minute jaws with a pair of canine teeth, anteriorly in jaws. Pelvic fins usually not reaching anus; caudal fin rounded.

DNA Barcode: MK340596 (COI)

Illustrative Barcode:



MK340596 (COI)



SL: 161 mm

Cephalopholis formosa (Shaw, 1812)

Class **Actinopterygii**
Order **Perciformes**
Family **Epinephelidae**



Fin formula: D-IX, 17; P_1-18; P_2-I, 5; A-III, 8; C-18–20
Branchiostegal Rays: 7

Colour dark brown to yellowish brown, with irregular dark blue lines on head, body and fins; snout, lips, and ventral part of head and chest with small dark blue spots. Body moderately deep. Caudal fin rounded; pectoral fins short. Snout largely scaled; maxilla partially scaled; scales on abdomen ctenoid.

DNA Barcode: MK340597 (COI), MK340598 (COI), MK340599 (COI)

Illustrative Barcode:

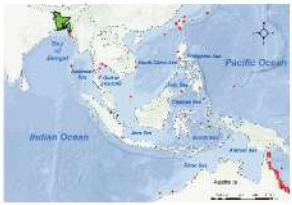


MK340597 (COI)



Cromileptes altivelis (Valenciennes, 1828)

Class **Actinopterygii**
Order **Perciformes**
Family **Epinephelidae**



Colour white to light greenish brown with scattered round black spots on head, body, and fins, with body spots generally larger than those on head and fins; about nine large roundish dusky blotches, with some extending partly into base of dorsal and anal fins. Body moderately deep, small in size. Small eyes. Concave dorsal profile of head; anterior part of the head as compared to the elevated postorbital part. Slit like posterior nostril. Rounded caudal fin.

Remarks: This species has been recorded during underwater scuba diving.



SL: 202 mm

Epinephelus coioides (Hamilton, 1822)

Class **Actinopterygii**
Order **Perciformes**
Family **Epinephelidae**



Fin formula: D-XI, 16; P_1-19; P_2-I, 5; A- III, 8; C-20
Branchiostegal Rays: 7

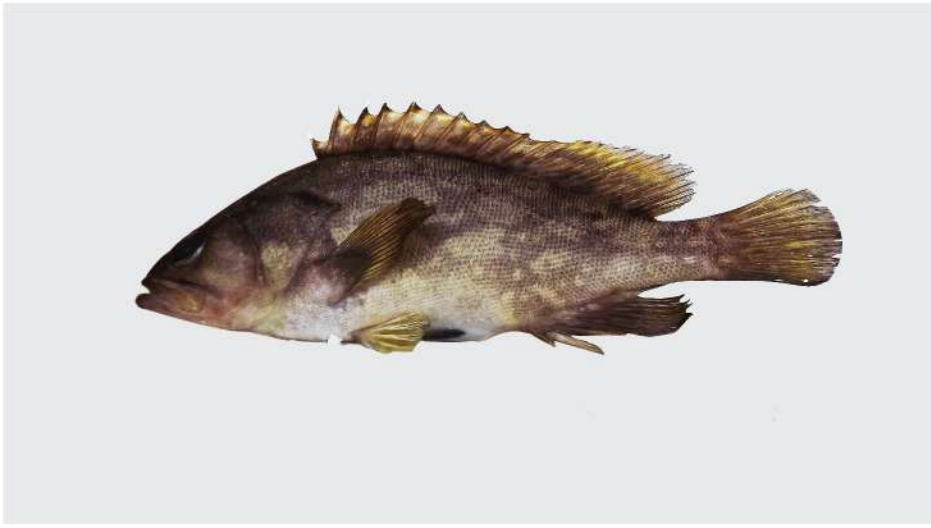
Head and body gray-brownish dorsally, shading to whitish ventrally, with numerous small brownish orange or reddish brown spots on head, body, and median fins; body with five faint, irregular, oblique, dark bars which bifurcate ventrally. Body elongate and not very compressed; preopercle with enlarged serrae at angle. Scales on body ctenoid except for a zone on back, thorax, abdomen, and a zone above base of anal fin narrowing to caudal peduncle. Caudal fin rounded.

DNA Barcode: MN458376 (COI)

Illustrative Barcode:



MN458376 (COI)



SL: 125 mm

Epinephelus erythrurus (Valenciennes, 1828)

Class **Actinopterygii**
Order **Perciformes**
Family **Epinephelidae**





Fin formula: D-XI, 16; P_1-18; P_2-I, 5; A-III, 8; C-18
Branchiostegal Rays: 7

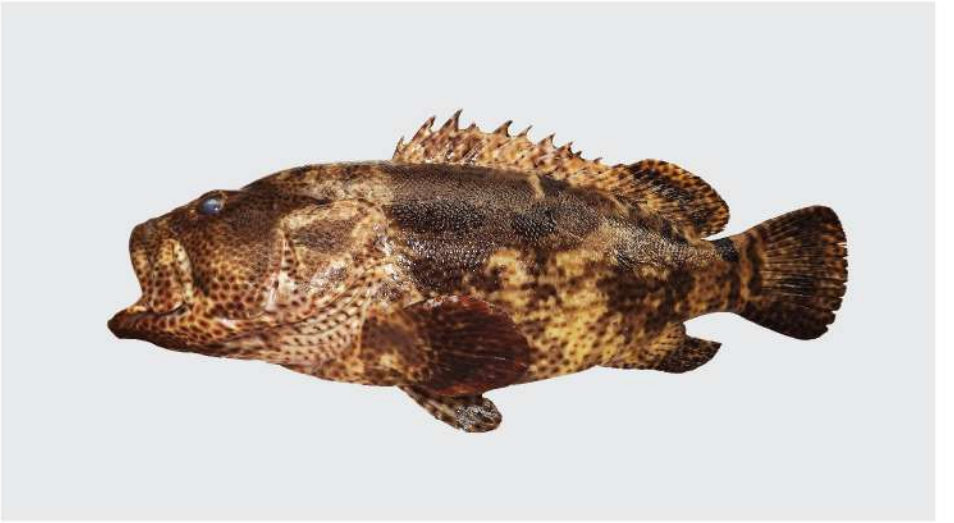
Head and body dark brown or greenish brown, marbled with irregular pale spots and blotches; one or two faint dark streaks running posteriorly from eye; no dark spots on head, body or fins. A small serranid with robust body. Teeth in narrow bands. Pectoral fins rather short, about equal to postorbital part of head. Pelvic fins not reaching to anus. Caudal fin rounded. Scales on head cycloid, on body ctenoid.

DNA Barcode: MK340613 (COI), MK340614 (COI), MK340615 (COI), MK340616 (COI)

Illustrative Barcode:



MK340613 (COI)



SL: 375 mm

Epinephelus fuscoguttatus (Forsskal, 1775)

Class	**Actinopterygii**
Order	**Perciformes**
Family	**Epinephelidae**



Fin Formula: D-X+I, 15; P_1-19; P_2-I, 5; A-III, 8; C-24
Branchiostegal Rays: 7

Pale yellowish brown colour with five vertical series of irregular dark brown blotches; head, body and fins with numerous close set, small brown spots; caudal peduncle with small black saddle dorsally. Body moderately deep; flat or slightly concave interorbital area; adults dorsal head profile indented at eyes and distinctly convex to origin of dorsal fin; rounded preopercle, finely serrate. Triangular posterior nostrils. Nostrils are close together. Scales cycloid. Caudal fin rounded.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK340617 (COI), MK335851 (16S)

Illustrative Barcode:



MK340617 (COI)



SL: 182 mm

Epinephelus latifasciatus (Temminck and Schlegel, 1842)

Class	**Actinopterygii**
Order	**Perciformes**
Family	**Epinephelidae**



Fin Formula: D-XI, 12; P_1-19; P_2-I, 5; A-III, 8; C-21
Branchiostegal Rays: 7

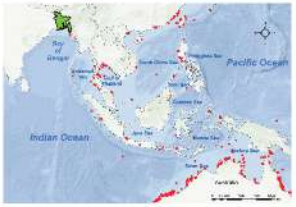
Colour of adult uniformly gray body. Juveniles with lavender-gray or pale brownish body; two black-edged white longitudinal bands, upper band from above eye to anterior dorsal fin soft rays, and lower band from below eye to lower caudal fin rays. Body moderately elongate; body depth less than head length. Posteroventral preopercular margin with 3-7 distinctly enlarged serrae. Caudal fin truncate in large adults. Pectoral fin length longer than longest pelvic fin ray length. Scales cycloid.



SL: 159 mm

Epinephelus quoyanus (Valenciennes, 1830)

Class **Actinopterygii**
Order **Perciformes**
Family **Epinephelidae**



Fin Formula: D-XI, 17; P_1-18; P_2-I, 5; A-III, 8; C-20
Branchiostegal Rays: 7

Body colour whitish with numerous hexagonal or roundish dark brown to black spots on body and head, the spots being close together dorsally. Similar dark spots on median fins; spots on head progressively smaller anteriorly; chest with two dark brown bands joining below pectoral fin bases; pectoral fins mostly dusky with faint dark spots. Dorsal profile of head convex; snout short; serrae at corner of preopercle enlarged. Caudal fin rounded; pectoral fins long; pelvic fins not reaching or just reaching anus. Scales on body ctenoid except anterodorsally above lateral line, on thorax, and abdomen; scales on nape very small.

DNA Barcode: MT379896 (COI)

Illustrative Barcode:



MT379896 (COI)



SL: 454 mm

Plectropomus pessuliferus (Fowler, 1904)

Class **Actinopterygii**
Order **Perciformes**
Family **Epinephelidae**



Fin Formula: D-VIII, 11; P_1-16; P_2-I, 5; A-III, 8; C-16
Branchiostegal Rays: 7

Colour of body and fins brown to orange-red, with numerous small dark-edged blue spots; some spots on lateral surface of body vertically elongate in adults; spots few or absent on ventral part of body; spots on fins more bluish. Body elongate; ventral margin of preopercle with three large spines. Opercle with three flat spines, upper and lower spines covered by skin. Anal fin spines weak; first and second spines covered by skin. Caudal fin emarginate.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK340678 (COI), MK335875 (16S)

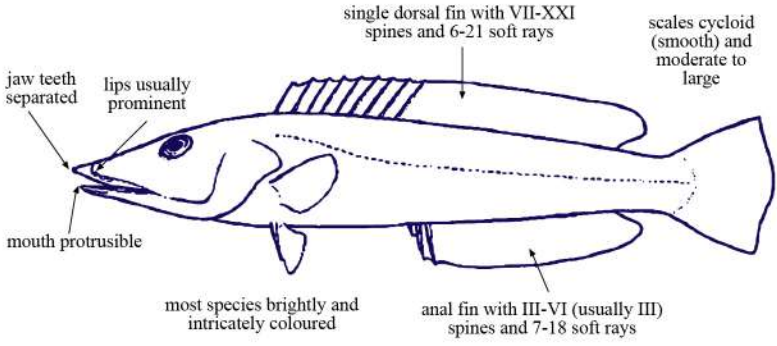
Illustrative Barcode:



MK340678 (COI)

FAMILY Labridae
Wrasse

Wrasses belong to a very large family of reef fish. A diverse group of fishes varying in body shape and size; body slightly to extremely compressed. Most common in shallow waters in a variety of habitats such as coral reefs, rocky reefs, sand, seagrass, and algae, but rarely found in muddy areas. Juveniles of many species are differently coloured from adults. They gradually change colour as they grow into adult fish. Most species live in groups dominated by a large male. If the male is removed, the largest female will become the next dominant male by changing sex. Juveniles of several wrasse species feed on parasites living on the skin of larger fish. Wrasses are diurnal with diverse feeding habits, including benthic invertebrate, fish, coral mucus, zooplankton, ectoparasite, and algae.





SL: 130 mm

Bodianus neilli (Day, 1867)

Class **Actinopterygii**
Order **Perciformes**
Family **Labridae**

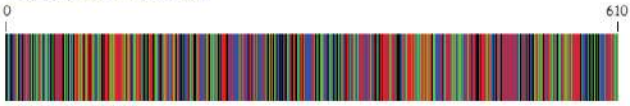


Fin Formula: D-XII, 10; P_1-16; P_2-I, 5; A-III, 12; C-16–20.
Branchiostegal Rays: 6

Colour of body pale brownish orange shading to white posterior to a diagonal from font of abdomen to soft portion of dorsal fin; short brownish red streaks at base of pectoral fins and in soft portion of dorsal and anal fins; small brownish red spots at front of dorsal fin; caudal fin light brownish orange, the upper and lower margins narrowly brownish red. Body moderately deep; dorsal profile of head nearly straight, snout pointed; 4 strong canines situated anteriorly in each jaw; a large, curved canine present on each side of the rear of the upper jaw. Lateral line complete and smoothly curved; sheath of scales extending onto dorsal and anal fins. Caudal fin truncate to slightly double emarginate.

DNA Barcode: MK340586 (COI), MK340587 (COI)

Illustrative Barcode:



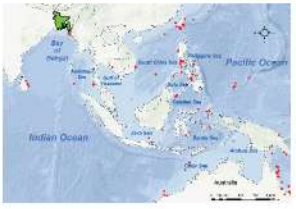
MK340586 (COI)



SL: 90 mm

Cheilinus chlorourus (Bloch, 1791)

Class **Actinopterygii**
Order **Perciformes**
Family **Labridae**



Fin Formula: D-X, 9; P_1-15; P_2-I, 5; A-III, 8; C-18
Branchiostegal Rays: 5

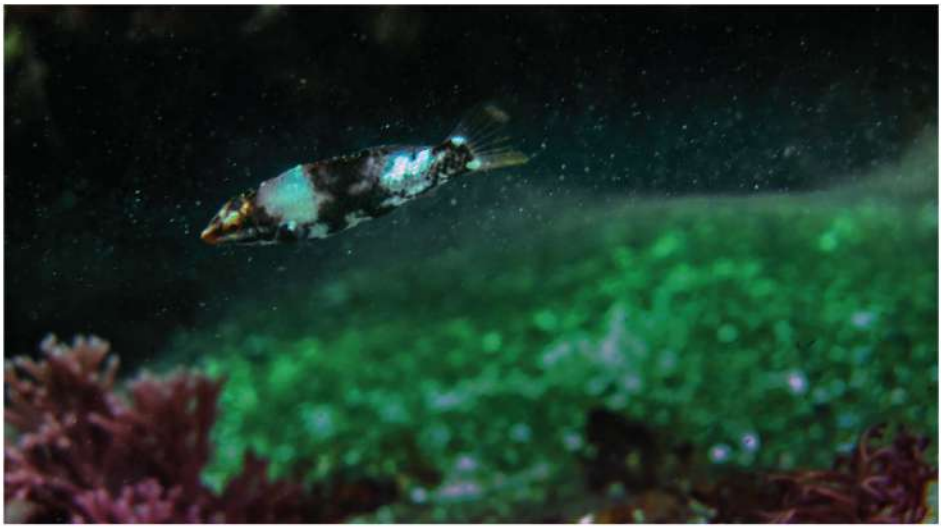
Colour variable, greenish brown to deep reddish brown, usually flecked with white; each scale on side usually with a blue or brown spot; median fins reddish brown with whitish dots; a blackish spot basally on first 1 or 2 membranes of dorsal fin; head with orange-red spots, some joining to form line radiating from eye. Body moderately deep; dorsal profile of head convex in front of dorsal fin, then straight to tip of snout. Jaws prominent, anterior tip of lower jaw even with anterior tip of upper jaw. Lateral line interrupted below posterior portion of dorsal-fin base. Scales reaching well onto bases of dorsal and anal fins. Caudal fin rounded in small fish, in large individuals the upper and lower rays form elongate lobes.

DNA Barcode: MK335845 (16S)

Illustrative Barcode:



MK335845 (16S)



Halichoeres hortulanus (lacepede, 1801)

Class **Actinopterygii**
Order **Perciformes**
Family **Labridae**



Body with longitudinal series of square black edged white spots along scale rows; a yellow spot on back at base of 4th and 5th dorsal spines followed by a black blotch; a second small spot in middle of base of soft dorsal fin head greenish-yellow with irregular orange-pink bands; dorsal and caudal fins yellowish; axil of pectoral with a small black spot. Juveniles white with large black blotches on body and a yellow edged black spot in the middle of dorsal fin. Body slightly elongate, compressed. Caudal fin rounded.

Remarks: This species has been recorded during underwater scuba diving.



SL: 108 mm

Halichoeres nigrescens (Bloch & Schneider, 1801)

Class **Actinopterygii**
Order **Perciformes**
Family **Labridae**



Fin Formula: D-IX;12, P_1-14; P_2-I, 5; A-III, 12; C-16–18
Branchiostegal Rays: 6

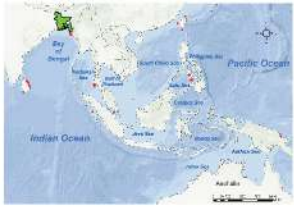
Colour irregular green and pink stripes and 6 groups of 7-10 small black spots in a midlateral row on body which may coalesce into and indistinct dark stripe; a short vertical black line behind eye preceded by a blue line and followed by a dusky pink bar; a small triangular black spot at upper base of pectoral fins. Males light green, white ventrally, with 7 reticulate deep pink blotches, the last 4 interconnected, and a midlateral series of indistinct small white spot; a black and yellow spot in dorsal fin between fifth and sixth spines. Body slightly elongate, compressed. Dorsal fin origin slightly posterior to the upper end of gill opening. Scales on nape extending to or slightly anterior to a vertical at rear edge of eyes; rest of head naked. Lateral line complete. Caudal fin rounded.



SL: 108 mm

Halichoeres timorensis (Bleeker, 1852)

Class **Actinopterygii**
Order **Perciformes**
Family **Labridae**



Fin Formula: D-IX, 12; P_1-14; P_2-I, 5; A-III, 12; C-16
Branchiostegal Rays: 6

Body moderately deep. A large curved canine present on each side at the rearof the upper jaw. Predorsal scales reaching to a vertical at posterior edge of eyes; rest of head naked. Lateral line complete. Caudal fin slightly rounded; pelvic fins of males long, reaching or nearly reaching anus. Colour variable in different stages of life. Colour in initial phase greenish grey on back, whitish below, with 5 longitudinal rows of small orange-yellow spots and short irregular orange-yellow bands; the bands often marked with groups of small black spots.

DNA Barcode: MN458366 (COI), MN458367 (COI), MN458368 (COI)

Illustrative Barcode:



MN458366 (COI)



Labroides dimidiatus (Valenciennes, 1839)

Class **Actinopterygii**
Order **Perciformes**
Family **Labridae**



Colour of juveniles black with a bright blue stripe on back and dorsally on head. Adults light blue shading to pale yellow or white anteriorly, with a black stripe from snout through eye to rear edge of caudal fin, this stripe progressively broader posteriorly. Body slender. Dorsal profile of head convex; mouth terminal, small; lips thick, the lower strongly bilobed, the second half separated by a U-shaped notch. Head scaly except for ventral portion. Caudal fin truncate to slightly rounded.

Remarks: This species has been recorded during underwater scuba diving.

EN
Moon wrasse

LN
Nihola (নিহোলা)

LC



SL: 165 mm

Thalassoma lunare (Linnaeus, 1758)

Class **Actinopterygii**
Order **Perciformes**
Family **Labridae**



Fin Formula: D-VIII, 13; P_1-14, P_2-I, 5; A-III, 11; C-16
Branchiostegal Rays: 5

Colour of initial phase green with vertical red lines on scales; head green with many irregulars rose pink bands; a blue-edged rose-pink band in each lobe of caudal fin, the broad central and posterior part of fin yellow; pectoral fins blue with a broad pink band in upper central part. Terminal males similar but bluer overall. Body moderately slender. Dorsal profile of head slightly convex; mouth small, two prominent canines anteriorly in each jaw. Lateral line abruptly curved below posterior portion of dorsal-fin base; head naked except for a patch of small scales on the upper end of opercle; scales on thorax about half the size of those on the body. Caudal fin varying from truncate in young to highly lunate with upper and lower corners produced into filaments in large adults.

DNA Barcode: MK340733 (COI), MK340734 (COI)

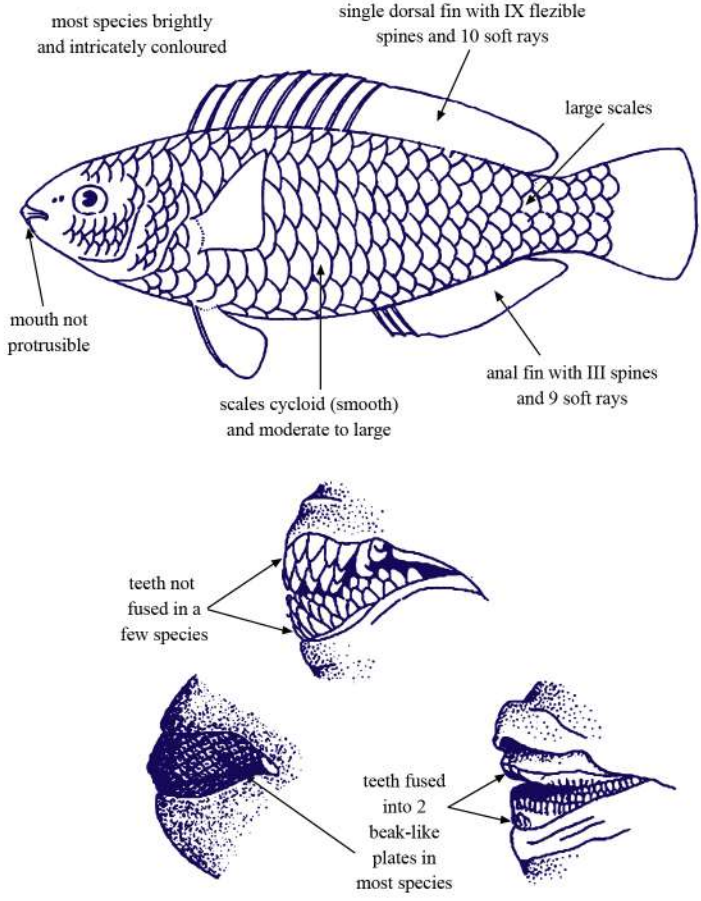
Illustrative Barcode:



MK340733 (COI)

FAMILY Scaridae
Parrotfishes

Parrotfishes are oblong, moderately compressed; head generally bluntly rounded anteriorly. Their common name derives from their fused teeth that resemble the beak of a parrot. They are often found on or in the vicinity of coral reefs, and usually most abundant in shallow waters. Adults of most species brightly coloured and conspicuous on the reef. Juveniles occupy coral rubble are as and as most species have similar colouration. They are herbivorous, usually scraping algae from dead coral substrates. Bits of rock eaten with the algae are crushed into sand and ground with the algae to aid in digestion, making parrotfish some of the most important producers of sand on coral reefs. At night, some species rest enveloped in their mucoid secretion to protect themselves from crabs and other nocturnal reef dwellers.





SL: 314 mm

Chlorurus rhakoura Randall & Anderson, 1997

Class	**Actinopterygii**
Order	**Perciformes**
Family	**Scaridae**



Fin Formula: D-IX, 10; P_1-14; P_2-I, 5; A-III, 9; C-26
Branchiostegal Rays: 4

Colour dark gray-brown or deep blue, the scales of body with a dull blue-green cast and very dark purplish edges; margins of dorsal and anal fins bright blue; dental plates bluish white. Body moderately deep; adults with a large, bulbous, fleshy protuberance on the forehead. Caudal fin with strongly inserted rays, giving the posterior margin a ragged appearance.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK560524 (COI), MK561629 (16S)

Illustrative Barcode:



MK560524 (COI)



SL: 243 mm

Scarus zufar Randall & Hoover 1995

Class **Actinopterygii**
Order **Perciformes**
Family **Scaridae**

Fin Formula: D-IX, 10; P_1-14; P_2-I, 5; A-III, 9; C-16
Branchiostegal Rays: 5

No teeth on sides of dental plates, upper dental plate three-fourths covered by lip, lower plate three-fourths exposed; caudal fin of adults truncate with produced lobes. Anterior part of body orange with a submarginal green band on each scale (a few scale rows behind head), gradually becoming broader posteriorly; iris yellow or brownish yellow; a transverse blue-green band on chin; dental plates white; dorsal fin orange with a turquoise-blue margin, broader anteriorly; anal fin orange with three blue-green bands, and a turquoise-blue margin; caudal fin lobes turquoise-blue outside and orange inside; central part of caudal fin purplish blue with three alternating irregular red and blue-green vertical bands; pectoral fins bright orange with a very narrow, green, upper margin; pelvic fins orange with a horizontal turquoise margin.

DNA Barcode: MK340702 (COI), MK335883 (16S)

Illustrative Barcode:



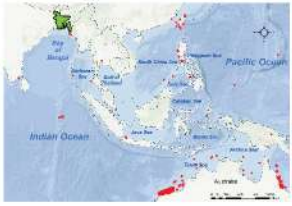
MK340702 (COI)



SL: 230 mm

Scarus ghobban Forsskal, 1775

Class **Actinopterygii**
Order **Perciformes**
Family **Scaridae**



Fin Formula: D-IX, 10; P_1-14; P_2-I, 5; A-III, 9; C-16
Branchiostegal Rays: 5

Colour dull orange yellow, the centers of scales bluish; five irregular blue bars present on body; fins yellowish. Terminal of males green dorsally, the scales rimmed with salmon pink, shading to pale green ventrally with pale salmon pink bar on each scale; head green dorsally, shading to pale salmon on cheek and chin, with two transverse blue bands on chin and three narrow irregular green bands extending posteriorly from eye. Teeth fused to form dental plates; dental plates relatively smooth; lips covering more than half of dental plates. Usually three rows of scales on cheek. Caudal fin lunate.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK340703 (COI)

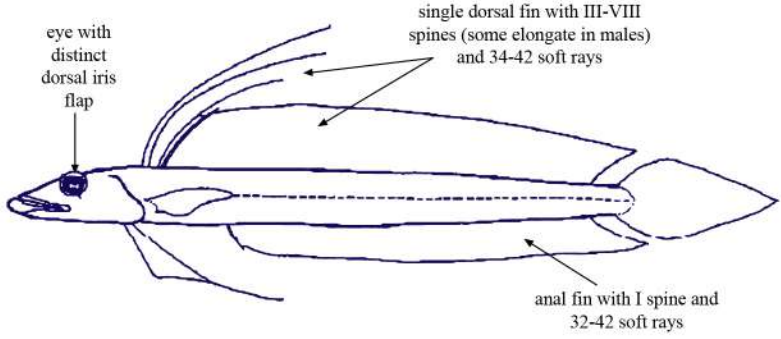
Illustrative Barcode:



MK340703 (COI)

FAMILY Trichonotidae
Sanddivers

Sanddivers are elongate, cylindrical trachinoid fishes. They are benthic, mostly near the substrate over sand, into which they dive, from inshore to depths. Feed mostly on crustaceans and zooplanktons.



EN
Sand diver

LN
Bali duburi (বালি ডুবুরি)



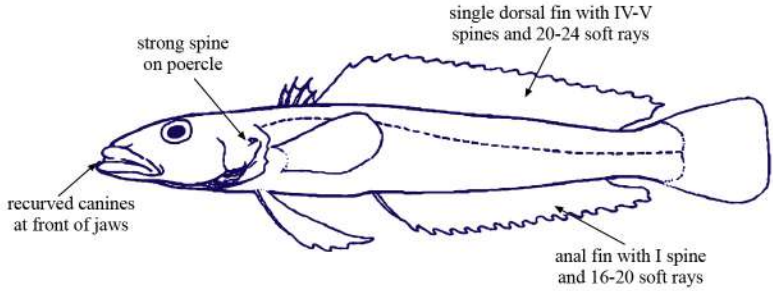
Trichonotus setiger (Bloch & Schneider, 1801)

Class **Actinopterygii**
Order **Perciformes**
Family **Trichonotidae**

Series of blotches along body above lateral line; membrane of spinous dorsal fin usually black; live specimens with colourful markings. Body elongate, cylindrical. Eye with dorsal iris flap consisting of numerous elongate strands extending ventrally. Snout pointed.

FAMILY Pinguipedidae
Sandperches

Sandperches are small to large-sized fish. Body elongate, cylindrical anteriorly. Eye moderate. Snout slender. They are long stretched fish. Inhabits both clear lagoon and seaward reefs, in areas of open sand and rubble as well as on rocky surfaces between coral heads. They love lying on the sand based on their ventral fins and waiting for prey. They like sandy areas but also rubbish and boulder.





Parapercis clathrata (Ogilby, 1910)

Class	**Actinopterygii**
Order	**Perciformes**
Family	**Pinguipedidae**

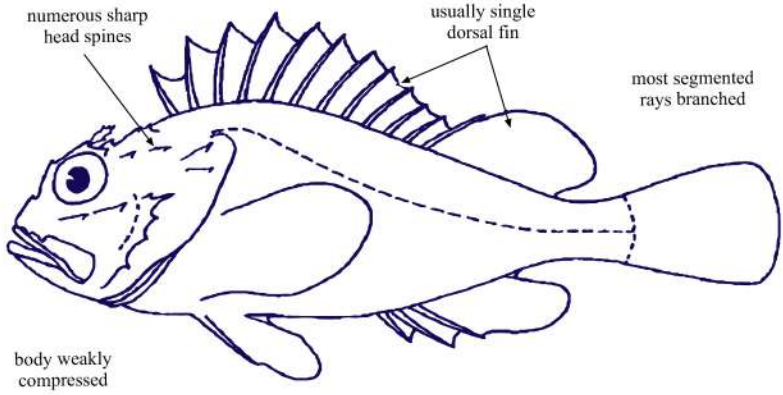


Colour of body light brown dorsally with rows of small dark spots, whitish ventrally with a lower series of 9 or 10 elliptical brown or brown and red spots, with blackish centers; single black spot with white margin above gill opening in males; caudal fin with a white or yellow spot. Body cylindrical. Three pairs of canine teeth on the lower jaw anteriorly. Palatine teeth absent. Middle dorsal spines longest. Membrane from spinous dorsal connected to 1st soft ray opposite tip of last spine.

Remarks: This species has been recorded during underwater scuba diving.

FAMILY Scorpaenidae
Scorpionfishes, rockfishes

Scorpionfishes are small to relatively large fish. Body usually weakly compressed; head moderate to large; eyes and mouth small to large. Found on or near bottom from inshore shallow waters. Well camouflaged and ambush predators, feed mainly on arthropods and fishes. Dorsal, anal and pelvic fin spines venomous in most species. Ovoviviparous or viviparous.

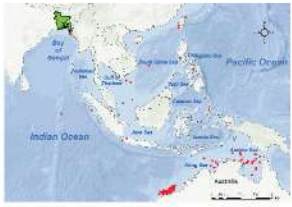




SL: 138 mm

Pterois russelii Bennett, 1831

Class **Actinopterygii**
Order **Perciformes**
Family **Scorpaenidae**



Fin Formula: D-XII+I, 10; P_1-14; P_2-I, 5; A-III, 7
Branchiostegal Rays: 7

Head and body with numerous reddish-brown bars of variable width, separated by narrow white bars; generally brownish pectoral fins without prominent dark bands; dorsal spines free of membrane except basally; enlarged and wing like pectoral fins with rays free of membrane distally, unbranched rays. Body oblong, compressed. Longest dorsal fin spines greater than body depth in adults.

DNA Barcode: MK024422 (COI)

Illustrative Barcode:



MK024422 (COI)



Pterois miles (Bennett, 1828)

Class **Actinopterygii**
Order **Perciformes**
Family **Scorpaenidae**



Colour of body is white or cream coloured red to reddish-brown vertical stripes. The vertical stripes alternate from wide to very thin (with the thin stripes being more numerous) and sometimes merge along the flank to form a V-shape. It has greatly elongated dorsal fin spines. The membranes of all fins are often spotted.

Remarks: This species has been recorded during underwater scuba diving.



Scorpaenopsis possi Randall & Eschmeyer, 2002

Class **Actinopterygii**
Order **Perciformes**
Family **Scorpaenidae**

Colour of body usually grayish, mottled with poorly defined blackish blotches. Body oblong, moderately compressed. Interorbital ridges well developed from middle of orbit posteriorly, joining to form a broad loop at rear of interorbit and enclosing a depression.

DNA Barcode: MT374166 (COI), MT374167 (COI), MT374168 (COI), MT374169 (COI)

Illustrative Barcode:



MT374166 (COI)



SL: 99 mm

Scorpaenodes guamensis (Quoy & Gaimard, 1824)

Class **Actinopterygii**
Order **Perciformes**
Family **Scorpaenidae**



Fin Formula: D1-XIII, 10; D_2-Absent; P_1-18; P_2-I, 5; A-III
Branchiostegal Rays: 7

Body colour variable, mottled with reddish to grayish. Fins dark gray with white. A large dark spot on opercle; no dark spot at rear of spinous portion of dorsal fin or subopercle; no dark triangular mark at pectoral fin base. Body oblong, compressed. Interorbital and coronal spines absent. Three suborbital spines; dorsal fin with strong venomous spine. Mouth highly protractile. Teeth villiform. Scales ctenoid. Caudal fin rounded.

DNA Barcode: MW940140 (COI)

Illustrative Barcode:



MW940140 (COI)



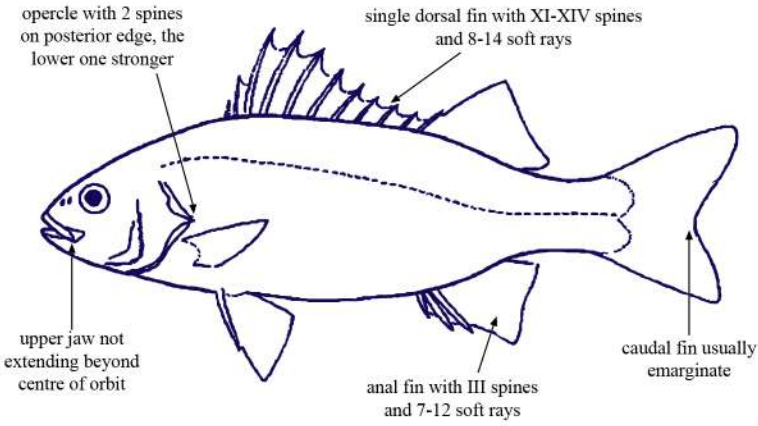
A scorpionfish



Scorpionfishes are very good at hiding in the places where they live due to their amazing camouflage abilities.

FAMILY Terapontidae
Terapon-perches

Terapon-perches are small to medium-sized perch-like fish; body oblong to oblong ovate, slightly to moderately compressed laterally; mouth moderate. Marine terapon inhabit inshore marine and brackish waters, with some species also entering hypersaline and fresh waters. Feed on fishes, insects, algae, and sand-dwelling invertebrates.





SL: 122 mm

Terapon theraps (Cuvier, 1829)

Class	**Actinopterygii**
Order	**Centrarchiformes**
Family	**Terapontidae**



Fin Formula: D-XII, 10; P_1-14; P_2-I, 5; A-III, 8; C-18–20
Branchiostegal Rays: 6

Colour of body dusky dorsally, silvery white ventrally; four dark brown horizontal stripes on body; spinous part of dorsal fin with black blotch dorsally on fin membranes between third and seventh spine; caudal fin with median rays pigmented; each caudal lobe with one transverse stripe, upper lobe with black tip. Body oblong, moderately compressed. Spinous part of dorsal fin strongly arched and deeply notched; penultimate spine about half length of ultimate spine. Caudal fin emarginate with rounded lobes.

DNA Barcode: MK340729 (COI), MK340730 (COI)

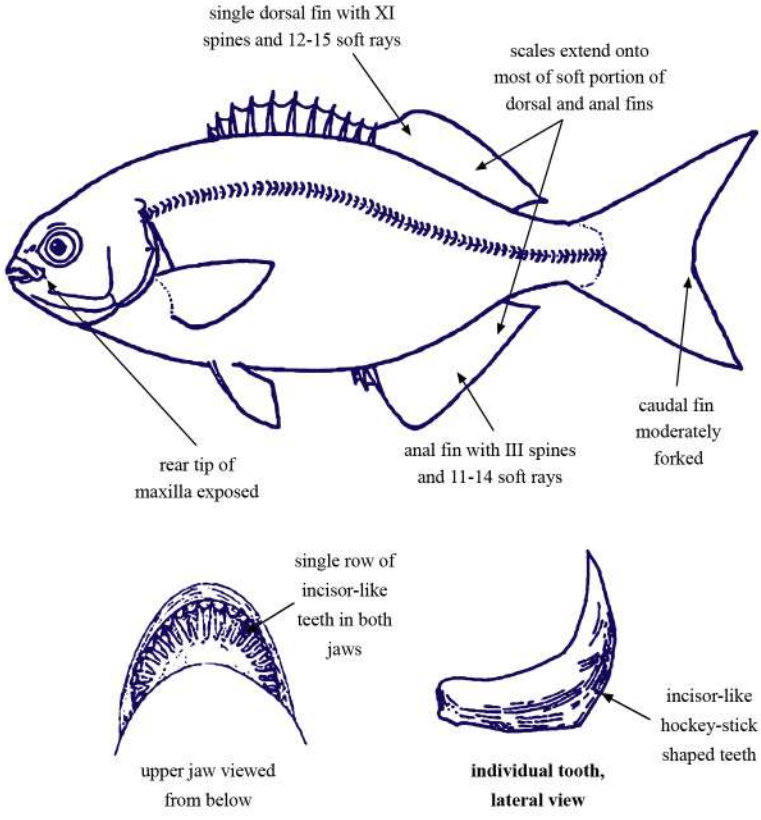
Illustrative Barcode:



MK340729 (COI)

FAMILY Kyphosidae
Sea chubs

Sea chubs or rudder fishes are medium-sized fish; body oblong or elliptical, moderately compressed. Head small; mouth small and terminal. Occur on rocky and coral reefs in tropical and temperate waters. Herbivorous, primarily feeds on benthic algae. Schooling, sometimes in a group of mixed species of other kyphosids.





SL: 186 mm

Kyphosus cinerascens (Forsskål, 1775)

Class **Actinopterygii**
Order **Centrarchiformes**
Family **Kyphosidae**



Fin Formula: D-XI, 12; P_1-19; P_2-I, 5; A-III, 11; C-20
Branchiostegal Rays: 6

Colour of body dull olive or silvery black, lighter below; distinct longitudinal lines on sides. Body ovate, compressed. Snout short. Dorsal fin spines somewhat short, weak; longest dorsal spine; anterior part of dorsal fin and anal fin soft-rayed portions well elevated with growth, longest dorsal and anal soft rays clearly longer than longest dorsal spine; base of spinous portion of dorsal fin equal to or a little longer than that of soft-rayed portion. Caudal fin shallowly forked with pointed lobes.

DNA Barcode: MK340627 (COI)

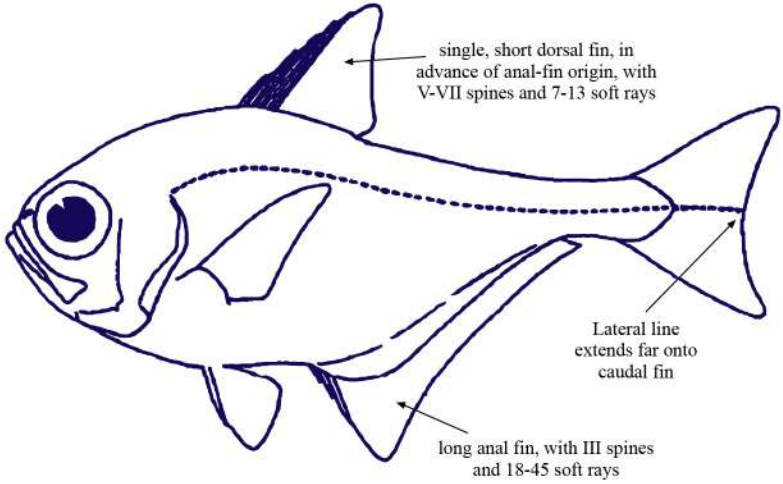
Illustrative Barcode:



MK340627 (COI)

FAMILY Pempheridae
Sweepers

Sweepers are small to moderate-sized marine fish. Body compress, very deep or slender. Eye very large. Inhabits in caves or beneath ledges at day in aggregations, dispersing at night to feed independently on zooplankton.





SL: 125 mm

Pempheris malabarica (Cuvier, 1831)

Class **Actinopterygii**
Order **Acropomatiformes**
Family **Pempheridae**



Fin Formula: D-VI, 9; P_1-18; P_2-I, 5; A-III, 43; C-17–20
Branchiostegal Rays: 7

Colour orangish to reddish copper, the scales rimmed with silvery white, very narrowly dorsally, broader on ventral half of body, resulting in a striped pattern; median fins orangish red, dorsal indistinctly bordered by blackish, most evident at the tip; posterior margin of caudal fin slightly and narrowly blackish; margin of anal fin usually slightly blackish anteriorly; base of pectoral fin a little darker than adjacent chest, but not as a distinct spot. Body very deep origin of dorsal fin, strongly tapering to narrow caudal peduncle. Base of anal fin very long. Lateral-line scales. Caudal fin forked.

DNA Barcode: MT375173 (COI)

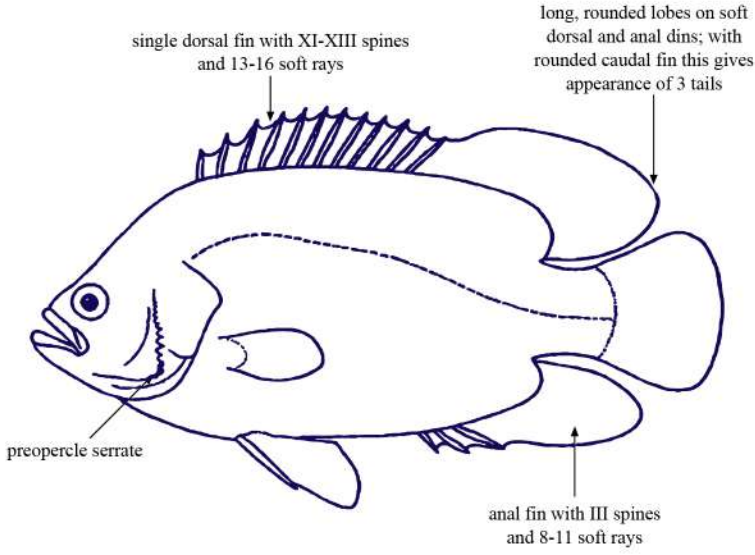
Illustrative Barcode:



MT375173 (COI)

FAMILY Lobotidae
Tripletails

A compressed, deep-bodied perch-like fish with the dorsal and anal fins rounded and symmetrical. Their tail seems like a single three-lobed fin. A sluggish offshore fish that often floats on its side near the surface in the company of floating objects, occasionally drifting into shallow water. The young often drift with floating sargassum and mimic mangrove leaves. Feed on benthic crustaceans and small fishes.





SL: 231 mm

Lobotes surinamensis (Bloch, 1790)

Class **Actinopterygii**
Order **Acanthuriformes**
Family **Lobotidae**



Fin Formula: D-XII, 16; P_1-16; P_2-I, 5; A-III, 12; C-18
Branchiostegal Rays: 6

Colour brown to dark brown with varying shades of yellow and ill-defined spots. Body compressed, deep-bodied perch-like fish with the dorsal and anal fins rounded and symmetrical. Head dish-shaped, interorbital space narrow, upper profile concave; eye relatively small; mouth large, slightly oblique. No teeth on roof of mouth; preopercle with strong dentitions along its margin. Caudal fin rounded.

DNA Barcode: MK560523 (COI)

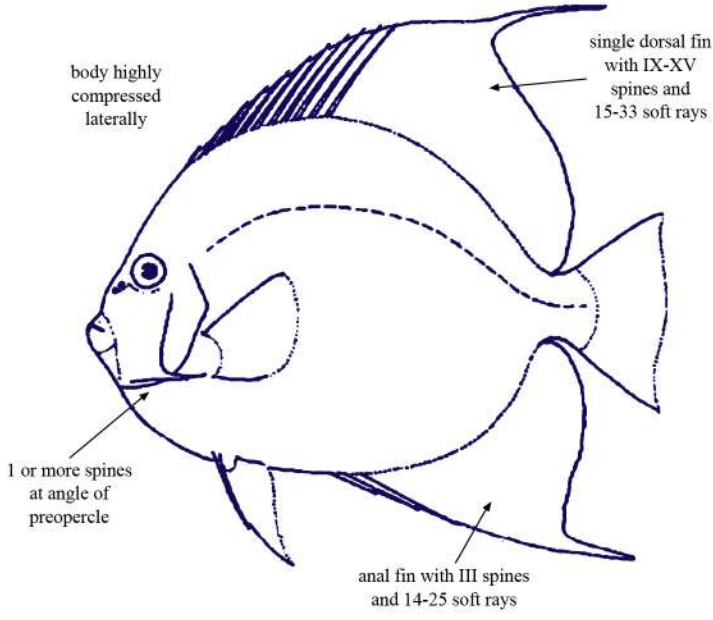
Illustrative Barcode:



MK560523 (COI)

FAMILY Pomacanthidae
Angelfishes

Angelfishes are small to medium-sized fishes with body deep, elongate-oval to orbicular, and strongly compressed. They inhabit mostly shallow-water reef areas, but a number of species live at greater depths. Very brightly coloured with complex and varied colour patterns. Juveniles are often different in colour from adults. Colour patterns are most diagnostic for species identification. They feed for the most part on invertebrates. Adults have a tendency to eat sponges, as well as other benthic invertebrates; juveniles predominantly eat algae, small invertebrates.





SL: 207 mm

Pomacanthus annularis (Bloch, 1787)

Class	**Actinopterygii**
Order	**Acanthuriformes**
Family	**Pomacanthidae**





Juvenile *Pomacanthus annularis*

Fin Formula: D-XIII, 22; P_1-19; P_2-I, 5; A-III, 21; C-17
Branchiostegal Rays: 4

Body yellowish brown with seven brilliant blue curved lines radiating from pectoral fin to soft dorsal fin; two blue horizontal lines on opercle, the superior one crossing, eye and the inferior one below it. Base of pectoral with transverse lines; blue ring above opercle margin and lateral line; caudal and pectoral fins yellow; pelvic fins grey. Body compressed; rostro dorsal profile straight to ape; preopercular spine strong.

DNA Barcode: MK340679 (COI)

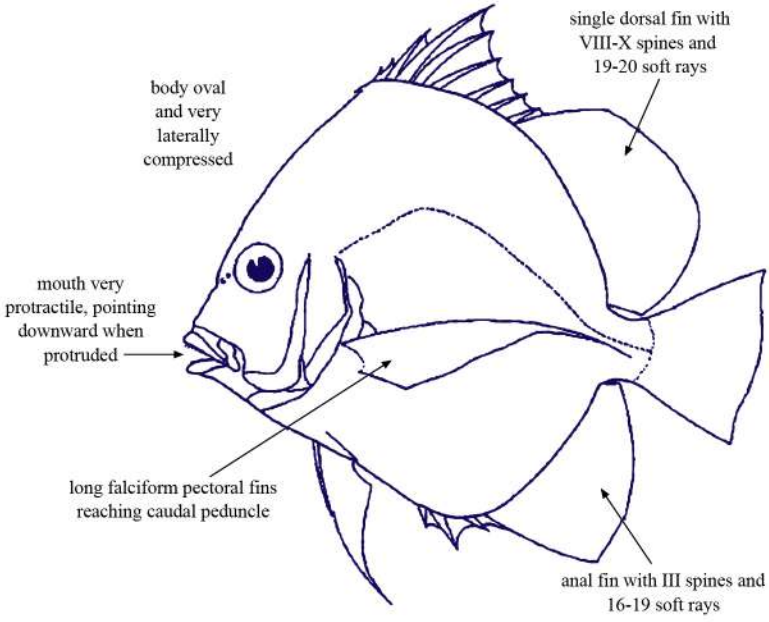
Illustrative Barcode:



MK340679 (COI)

FAMILY Drepaneidae
Sicklefishes

Body very deep and strongly compressed. Colour silvery grey above, silvery white below, with dusky spots or grey vertical bars. Inhabit a variety of habitats including inshore on sand or mud bottoms, reefs, estuaries and harbours. Feed on benthic invertebrates, mainly crustaceans and worms.





SL: 73 mm

Drepane longimana (Bloch & Schneider, 1801)

Class **Actinopterygii**
Order **Acanthuriformes**
Family **Drepaneidae**



Fin Formula: D-IX, 21; P_1-16; P_2-I, 5; A-III, 18; C-16–18
Branchiostegal Rays: 6

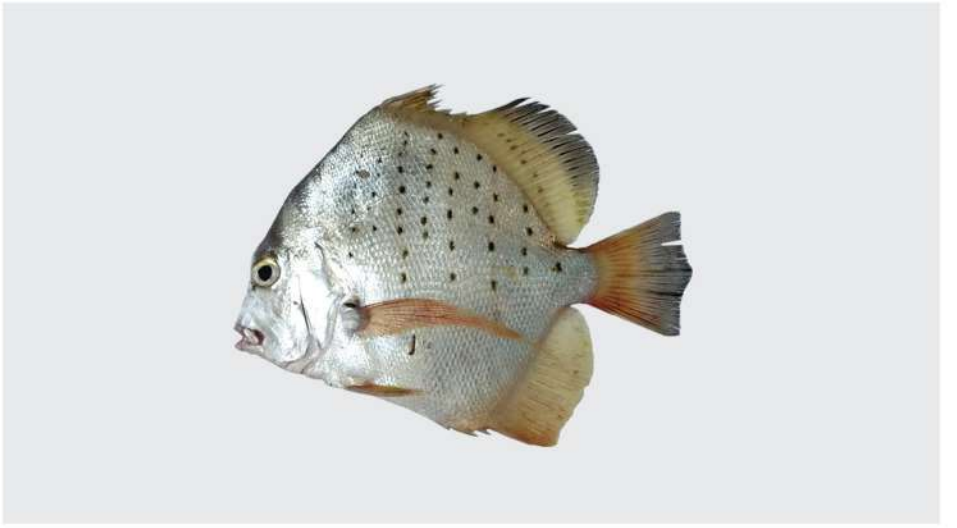
Colour of head and body silvery with 4-10 vertical dark bars usually visible on dorsal part of the body from head to caudal-fin base. Body very deep, strongly compressed. Snout profile straight or concave; mouth terminal and protrusible, forming a downward-pointing tube when protruded. Pectoral fins long, falciform, reaching caudal peduncle.

DNA Barcode: MK340610 (COI), MK340611 (COI)

Illustrative Barcode:



MK340610 (COI)



SL: 74 mm

Drepane punctata (Linnaeus, 1758)

Class **Actinopterygii**
Order **Acanthuriformes**
Family **Drepaneidae**

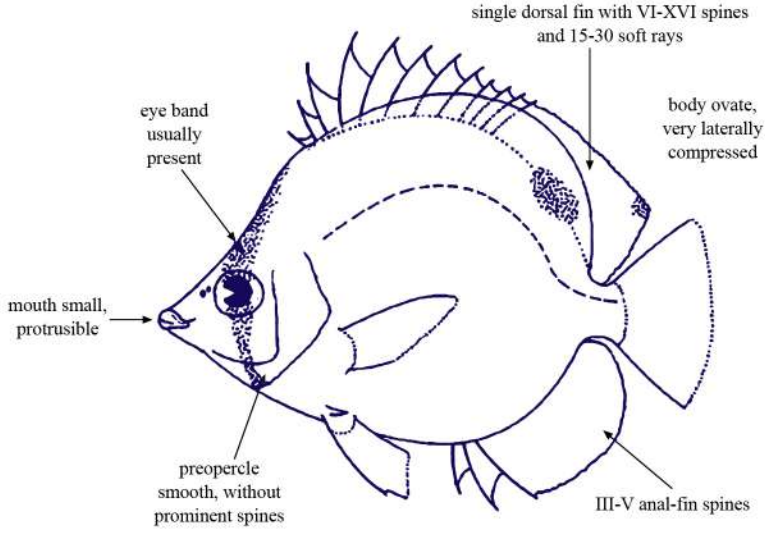


Fin Formula: D-IX, 21; P_1-16; P_2-I, 5; A-III, 18; C-16–18
Branchiostegal Rays: 6

Body colour silvery with a greenish tinge on upper half of body; 5-10 series of black spots arranged in vertical lines on dorsal part of body from below dorsal fin to caudal. Body very deep, strongly compressed. Snout concave; mouth terminal. Pectoral fins long, falciform, reaching caudal peduncle.

FAMILY Chaetodontidae
Butterflyfishes

Butterflyfishes are brightly coloured. Their presence on a reef is used as an indicator of the health of corals, Body oval-shaped (excluding fins), deep-bodied, highly compressed percoid fishes. Their swimming behaviour among coral heads resembles butterflies, hence their common name. Many species form pairs, while some are solitary others form schools. The majority of species are omnivorous, while few species feed on the tentacles of coral polyps.





SL: 97 mm

Chaetodon decussatus (Cuvier, 1829)

Class **Actinopterygii**
Order **Acanthuriformes**
Family **Chaetodontidae**



Fin Formula: D-XIII, 25; P_1-15; P_2-I, 5; A-III, 21; C-20
Branchiostegal Rays: 6

Colour of body ground mostly white, with 2 sets of diagonal blackish lines; entire posterior part of body, encompassing soft portions of dorsal and anal fin, blackish; head with a black bar from high on nape through eye; caudal fin yellow with a black bar in the middle, a clear posterior border, and a blackish submarginal band. Snout moderate to short; predorsal contour nearly straight. Lateral line incomplete. Caudal fin truncate to slightly round.

DNA Barcode: MK340600 (COI)

Illustrative Barcode:



MK340600 (COI)



Chaetodon octofasciatus (Bloch, 1787)

Class **Actinopterygii**
Order **Acanthuriformes**
Family **Chaetodontidae**



Colour creamy yellow with eight black vertical stripes, including an eye band, five central body stripes, and the other two stripes crossing dorsal and anal fins; pelvic fins yellow. Body rounded, almost circular; snout short, blunt; predorsal contour straight. Lateral line incomplete. Dorsal and anal fins strongly rounded; caudal fin truncate to slightly round.

Remarks: This species has been captured during underwater scuba diving.



Heniochus acuminatus (Linnaeus, 1758)

Class **Actinopterygii**
Order **Acanthuriformes**
Family **Chaetodontidae**

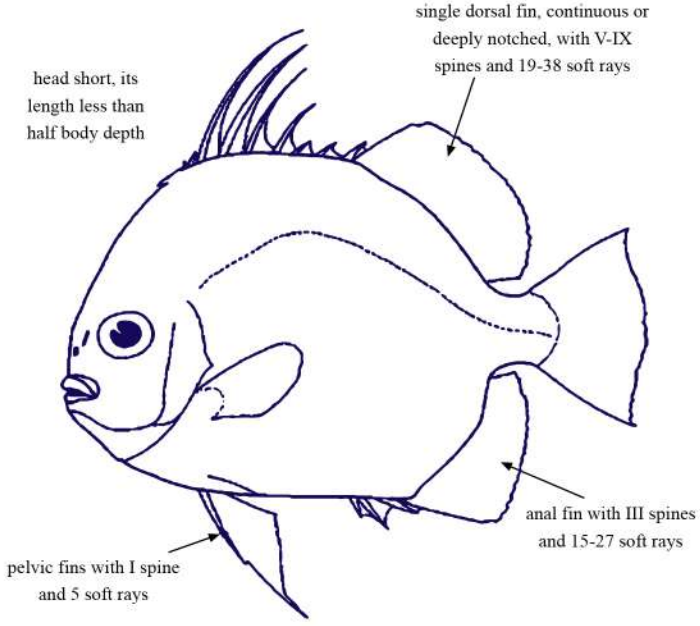


Colour white, with two broad, oblique, black bands on sides, the first continuous with black pelvic fins and the second from middle of spinous portion of dorsal fin to posterior half, but not extending anteriorly to longest soft ray of anal fin; soft dorsal and caudal fins yellow; snout and interorbital largely blackish. Body very deep; snout moderate, pointed. Lateral line complete. Fourth dorsal-fin spine greatly elongate, filamentous, often exceeding length of body. Caudal fin truncates to slightly round.

Remarks: This species has been recorded during underwater scuba diving.

FAMILY Ephippidae
Spadefishes

Body deep and strongly compressed. Head short, its length shorter than half of body depth. Occur in various shallow water habitats including estuaries, harbors, and coral reefs. Feed on benthic invertebrates and fishes.





SL: 132 mm

Ephippus orbis (Bloch, 1787)

Class **Actinopterygii**
Order **Acanthuriformes**
Family **Ephippidae**



Fin Formula: D- IX, 19; P_1-18; P_2- I, 5; A- II+I, 15; C-20
Branchiostegal Rays: 6

Body silvery with 4 to 5 vertical bands on body from dorsal fins almost to belly. Soft dorsal have margins, anal, pelvic and caudal fins dusky black. Body strongly compressed, rounded in shape. Mouth small not protractile. Pectoral fins short and rounded. Scales smooth; operculum covered with scales almost to its ventral edge.



SL: 156 mm

Platax teira (Forsskål, 1775)

Class **Actinopterygii**
Order **Acanthuriformes**
Family **Ephippidae**



Fin Formula: D-V, 35; P_1-18; P_2-I, 5; A-III, 26; C-20–22
Branchiostegal Rays: 6

Colour of body yellowish silver with 3 vertical black bands; pelvic fin yellow; a black blotch laterally on belly. Body orbicular, strongly compressed. Snout short, contour of frontal almost vertical in large adults. Five pores on each side of the lower jaw. Tricuspid teeth on jaws; middle cusp slightly larger than lateral cusps; a few teeth on vomer but palatines toothless.

DNA Barcode: MK340675 (COI), MK340676 (COI)

Illustrative Barcode:



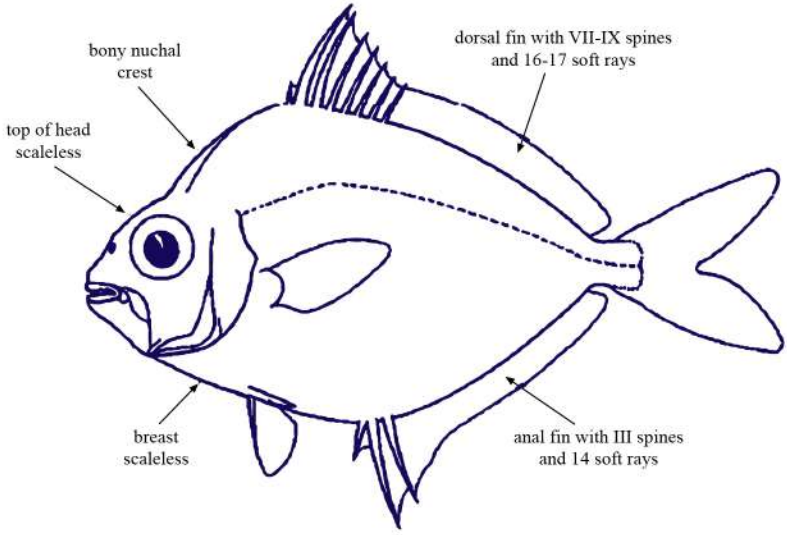
MK340675 (COI)

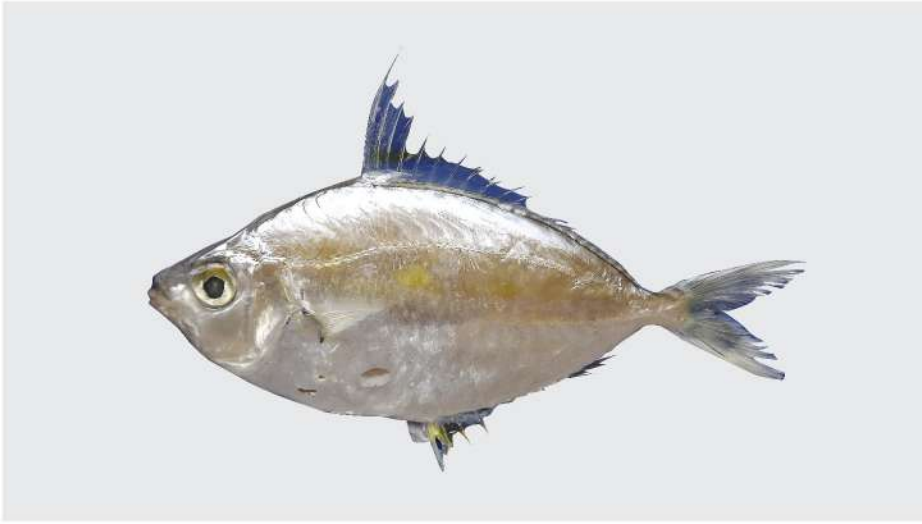


Underwater view of *Platax teira*

FAMILY Leiognathidae
Slipmouths

Small to medium-sized marine and brackish fish. Body slimy and deep, ovate, strongly compressed, except a few species. Occurring in tropical to temperate marine and estuarine areas. Bottom-living fishes in shallow coastal waters, with several species entering brackish waters, especially river estuaries, a few ranging up into freshwater. Deeper dwelling species have been reported to move away from the bottom to midwater at night. All species so far examined possess a light producing organ containing symbiotic luminescent bacteria; the transparent patch of skin associated with the organ is usually more elaborately developed in males. They feed on phytoplanktons and copepods, with large fish feeding predominantly on benthic invertebrates.





SL: 102 mm

Equulites leuciscus (Günther, 1860)

Class **Actinopterygii**
Order **Acanthuriformes**
Family **Leiognathidae**



Fin Formula: D-VIII, 16; P_1-17; P_2-I, 5; A-III, 14; C-22
Branchiostegal Rays: 3

Colour of body brownish silver dorsally, brilliant silvery-white ventrally; irregular oblique dark lines dorsolaterally on body. Yellow spot midle on body. Anal, dorsal and caudal fins yellow margine. Body oblong, somewhat elongate, compressed; dorsal and ventral profiles similarly convex. Mouth protruding downwards, with small slender teeth on both jaws. Cheek naked; breast completely scaled laterally with narrow naked area ventrally. Second dorsal fin spine distinctly elongated, filamentous.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK560527 (COI)

Illustrative Barcode:



MK560527 (COI)



SL: 66 mm

Karalla daura (Cuvier, 1829)

Class **Actinopterygii**
Order **Acanthuriformes**
Family **Leiognathidae**





Fin Formula: D-VIII, 16; P_1-20; P_2-I, 5; A-III, 14; C-24
Branchiostegal Rays: 4

Colour of body bluish or greenish silver dorsally, brilliant silvery-white ventrally; a broad yellow or golden band usually over lateral line; no dark marking on nape; distal half of spinous portion of dorsal fin jetblack: anal fin yellow or orange. Body deep, rhomboid, compressed. Mouth protruding downwards, with small slender teeth on both jaws; ventral profile of lower jaw slightly concave or almost straight; lower margin of eye located below level of mouth gape. Cheek and breast completely naked.

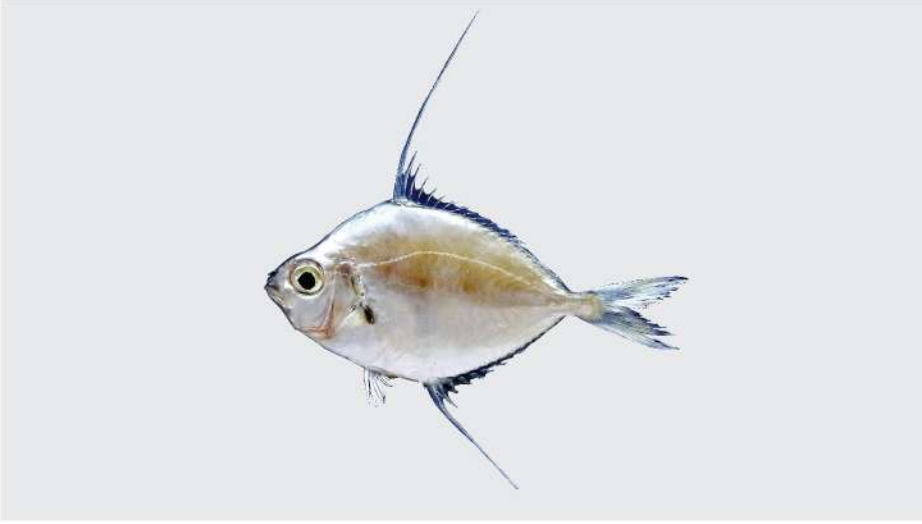
Remarks: New distributional record from Bangladesh.

DNA Barcode: MK340630 (COI), MK340631 (COI), MK340632 (COI), MK335857 (16S), MK335858 (16S), MK335859 (16S)

Illustrative Barcode:



MK340630 (COI)



SL: 91 mm

Aurigcquula longispina (Valenciennes, 1835)

Class **Actinopterygii**
Order **Acanthuriformes**
Family **Leiognathidae**



Fin Formula: D-VIII, 17; P_1-19; P_2-I, 5; A-III, 14; C-20
Branchiostegal Rays: 4

Colour of body blue-grayish silver dorsally, brilliant silvery-white ventrally; dorsolateral body with 5 or 6 dark vertical bands in juveniles; usually yellow blotches laterally on the body. Body extremely deep, compressed. Mouth protruding downwards, with small slender teeth on both jaws; profile of lower jaw slightly concave; supraorbital ridge smooth or weakly serrated. Second dorsal and anal fin spines distinctly elongated, filamentous; retrorse spines of dorsal and anal fin pterygiophores strong and exposed. Cheek, breast, and belly completely naked.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK340633 (COI), MK560522 (COI), MK335860 (16S)

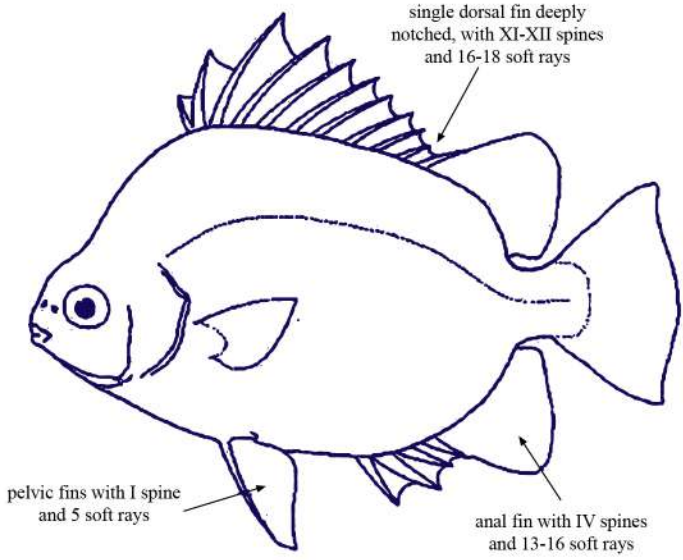
Illustrative Barcode:



MK340633 (COI)

FAMILY Scatophagidae
Scats

Scats have a highly compressed and deep body. A schooling species, they are abundant in coastal lagoons and estuaries. Adults are also found on fringing reefs. Scats feed primarily on algae.

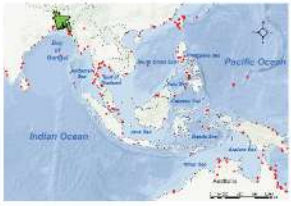




SL: 114 mm

Scatophagus argus (Linnaeus, 1766)

Class	**Actinopterygii**
Order	**Acanthuriformes**
Family	**Scatophagidae**



Fin Formula: D-XI, 18; P_1-16; P_2-I, 5; A-IV, 15
Branchiostegal Rays: 6

Body colour dusky brown above and silvery below; numerous large round brown spots on body except for breast and belly, these spots may extend onto the soft dorsal fin; all fins slightly dusky. Body quadrangular and strongly compressed; forehead steep. Mouth small with brush like teeth. A procumbent spine present before dorsal spine; dorsal fin notched; caudal truncate. Scales ctenoid.

DNA Barcode: MN703126 (COI)

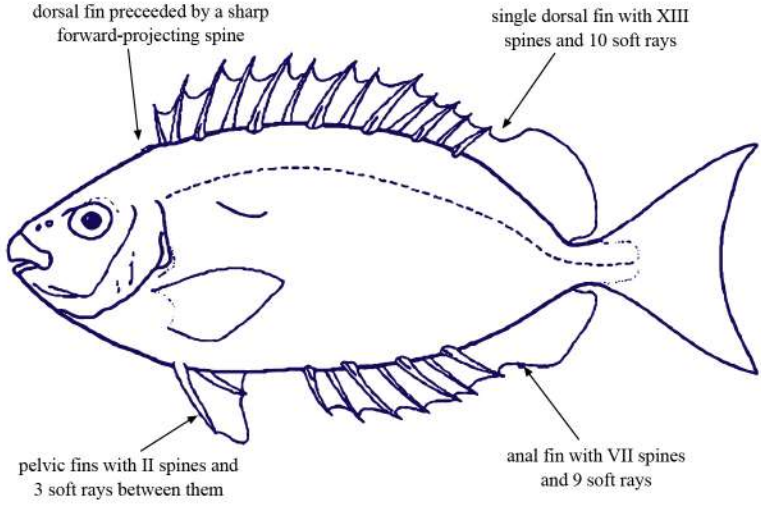
Illustrative Barcode:



MN703126 (COI)

FAMILY Siganidae
Rabbitfishes

Rabbitfishes are oval, strongly compressed. Mouth small, terminal. Dwelling on bottom in shallow coastal waters. Some species found in coral reefs, mangroves and seagrass beds. Primarily herbivorous.





SL: 111 mm

Siganus canaliculatus (Park, 1797)

Class	**Actinopterygii**
Order	**Acanthuriformes**
Family	**Siganidae**



Fin Formula: D-I+XIII, 10; P_1-16; P_2-II, 3; A-VII, 9; C-18–20
Branchiostegal Rays: 5

Body colour silvery gray above and silvery below; nape and upper surface of head olive green; head and body with pearly white round or oval spots, some are elongate; a black patch below origin of lateral line; soft dorsal and anal fins are slightly dusky. Body elongate; spines slender and pungent; caudal fin emarginate in juveniles, becoming forked with increasing size; midline of thorax between pelvic ridges scaleless.

DNA Barcode: MK340713 (COI), MK340714 (COI), MK340715 (COI)

Illustrative Barcode:



MK340713 (COI)



SL: 111 mm

Siganus javus (Linnaeus, 1766)

Class	**Actinopterygii**
Order	**Acanthuriformes**
Family	**Siganidae**



Fin Formula: D-I+XIII, 10, P_1-18; P_2-II, 3; A-VII, 9; C-16
Branchiostegal Rays: 5

Colour dark bronze on dorsal half, becoming paler ventrally; many blue spots on head and dorsal half of body; silvery blue undulating lines on ventral half of body. Body relatively deep. Soft parts of dorsal and anal fins moderately high, longest anal fin ray sub-equal to longest anal-fin spine. Caudal fin slightly concave.

DNA Barcode: MK340716 (COI)

Illustrative Barcode:



MK340716 (COI)



SL: 185 mm

Siganus vermiculatus (Valenciennes, 1835)

Class **Actinopterygii**
Order **Acanthuriformes**
Family **Siganidae**



Fin Formula: D-I+XIII, 10; P_1-16; P_2-II, 3; A-VII, 9; C-18
Branchiostegal Rays: 4

Body bluish white with irregular vermiculate dark spotted with brown bands spreading onto base of caudal except ventrally spotted with brown; head with narrow brown bands; caudal fin with small brown spots; a row of brown spots above base of soft dorsal and anal fins; dorsal and anal fins dusky; iris golden yellow. Body deep and ovate; dorsal profile of snout steep; spines are stout; caudal fin emarginate; cheeks with strong scales, midline of thorax scaly except pelvic ridges.

DNA Barcode: MK340717 (COI)

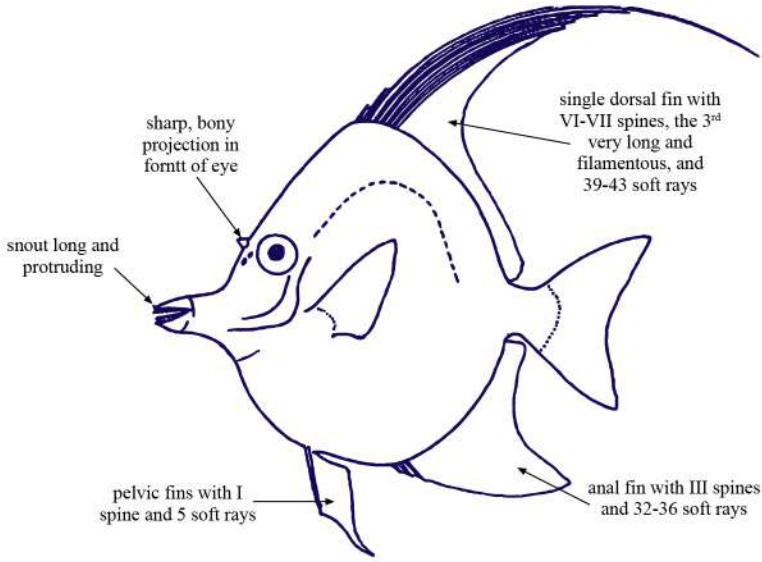
Illustrative Barcode:



MK340717 (COI)

FAMILY Zanclidae
Moorish Idol

Moorish Idol is a small sized marine fish. Body strongly deep and compressed. This species is the only member of the family, lives on coral reefs or rocky substrata from the shallows to depths. It is omnivorous but feeds more on animal life than algae; sponges dominate the animal diet, but bryozoans, small molluscs, small crustaceans, hydroids, and tunicates have also been found in the stomach contents. Sometimes seen in pairs, occasionally in aggregations.





SL: 142 mm

Zanclus cornutus (Linnaeus, 1758)

Class **Actinopterygii**
Order **Acanthuriformes**
Family **Zanclidae**



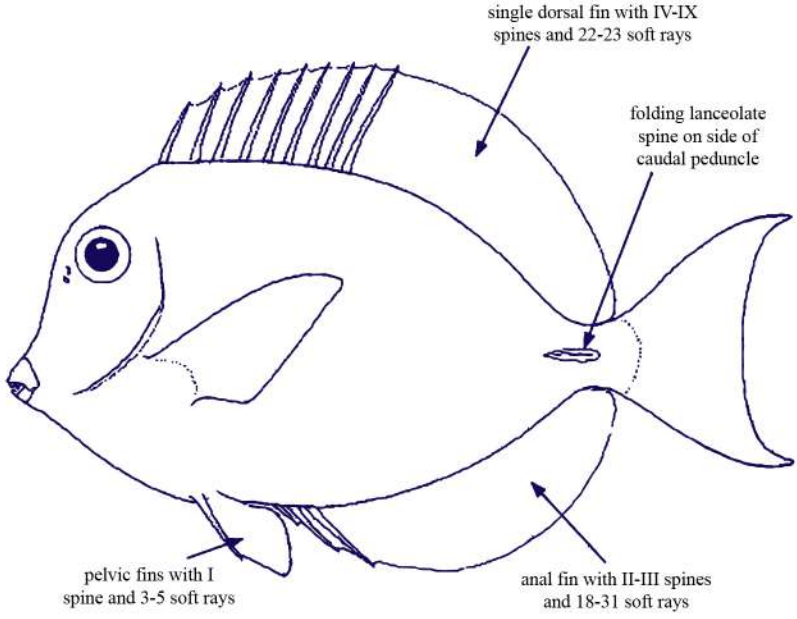
Fin Formula: D-VII,42; P_1-18; P_2-I,5; A-III,35; C-20
Branchiostegal Rays: 5

Body colour white, yellowish posteriorly; two broad vertical black bars, the anterior from nape through eye to chest and pelvic fin, the posterior from dorsal fin to anal fin; black-edged orange saddlelike marking dorsally on snout; caudal fin black with sub-marginal white line. Body disc like. Third dorsal fin spine greatly elongate and filamentous. Caudal fin emarginate. Small ctenoid scales on head and body.

Remarks: New distributional record from Bangladesh.

FAMILY Acanthuridae
Surgeonfishes

Surgeonfishes and unicorn fishes are most often found on or near coral reefs or rocky areas. Their common names derive from the sharp scalpel-like blades located at the base of their tails. These blades may be used for attack or defense. High-bodied, compressed fishes with a single folding lancet-like spine. Usually found at depths of the seas, vicinity of coral reefs or rocky bottom. They are primarily herbivores which browse on macro algae or zooplankton. Most species exhibit schooling behaviour.





SL: 245 mm

Acanthurus xanthopterus Valenciennes, 1835

Class	**Actinopterygii**
Order	**Acanthuriformes**
Family	**Acanthuridae**



Fin Formula: D-IX, 26; P_1-17; P_2-I, 5; A-III, 25; C-20
Branchiostegal Rays: 5

Body colour purplish or blue grey with irregular dark grey lines; a dull yellow area behind and in front of eye and a lesser extension posterior to lower part of eye; outer 1/3 of pectoral fin yellow, extreme distal part hyaline; dorsal and anal fins yellowish grey basally, dull yellow distally; caudal fin base whitish; caudal fin purplish or bluish-grey, fin lunate and spine small. Body deep or more elongate. Teeth fixed, denticulate on all of margin, with expanded incurved tips. Caudal fin deeply emarginate to lunate. Caudal peduncle with 1 folding spine.

DNA Barcode: MK340579 (COI)

Illustrative Barcode:



MK340579 (COI)



SL: 149 mm

Acanthurus mata Cuvier, 1829

Class **Actinopterygii**
Order **Acanthuriformes**
Family **Acanthuridae**



Fin Formula: D-IX, 25; P_1-19; P_2-I, 5; A-III, 24; C-16–20
Branchiostegal Rays: 5

Colour of body gray to brown with lengthwise blue lines on head and body; a small blackish spot at upper end of gill opening, preceded by a yellow band that continues in front of eye as a double band. Body deep. Teeth fixed, denticulate on all of margin, with expanded incurved tips. Caudal fin deeply emarginate. Caudal peduncle with one folding spine.

DNA Barcode: MK560531 (COI)

Illustrative Barcode:



MK560531 (COI)



SL: 281 mm

Naso unicornis Forsskål 1775

Class	**Actinopterygii**
Order	**Acanthuriformes**
Family	**Acanthuridae**



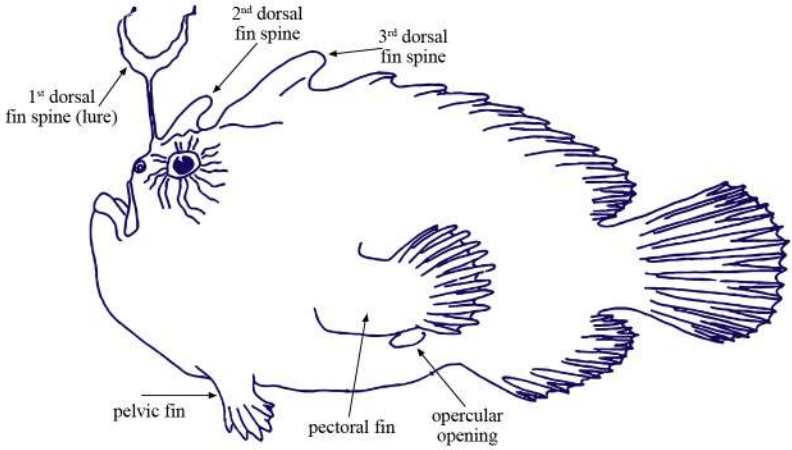
Fin Formula: D-VI, 31; P_1-17; P_2-I, 2; A-II, 26
Branchiostegal Rays: 5

Colour of body olive-coloured with blue pedunculate plates and keels. Lips are bluish and dorsal and anal fins with blue margin. Body is oval, deep and compressed. A hornlike rostral projection directly anterior to eye, but not reaching anterior to mouth, snout is pointed, mouth terminal with powerful compressed teeth. Dorsal profile of snout to horn straight forming an angle to horizontal axis of body. Large caudal spines forwardly curved. Slightly emarginated caudal fin with long filaments originated from each lobe.

Remarks: New distributional record from Bangladesh.

FAMILY Antennariidae
Frogfishes

Frogfishes are short, globose, slightly compressed with large mouths and, often, prickly skins. The members of the group known as anglerfishes, are usually provided with a "fishing pole" tipped with a fleshy "bait" located on the snout and derived from the first dorsal fin spine. This lure is used to entice prey fish. Frogfish take on many different color forms throughout their lifecycle; often patterned to blend with their surroundings. They spend the greater part of their lives squatting on the bottom in shallow water. Frogfish move very slowly but ironically; frogfish have the fastest strike speed of any other animal on earth.





SL: 89 mm

Antennarius hispidus (Bloch & Schneider, 1801)

Class **Actinopterygii**
Order **Lophiiformes**
Family **Antennariidae**

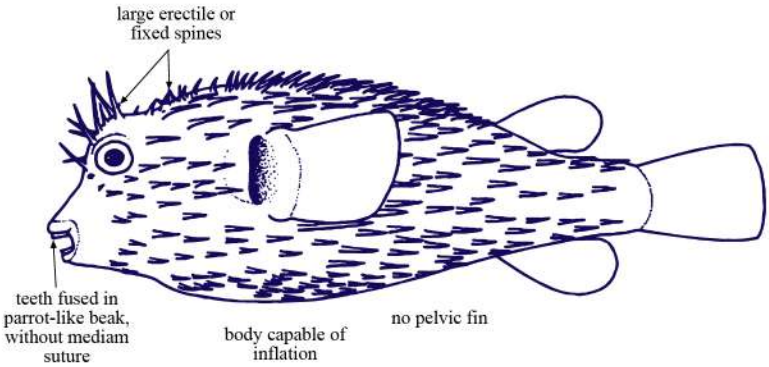


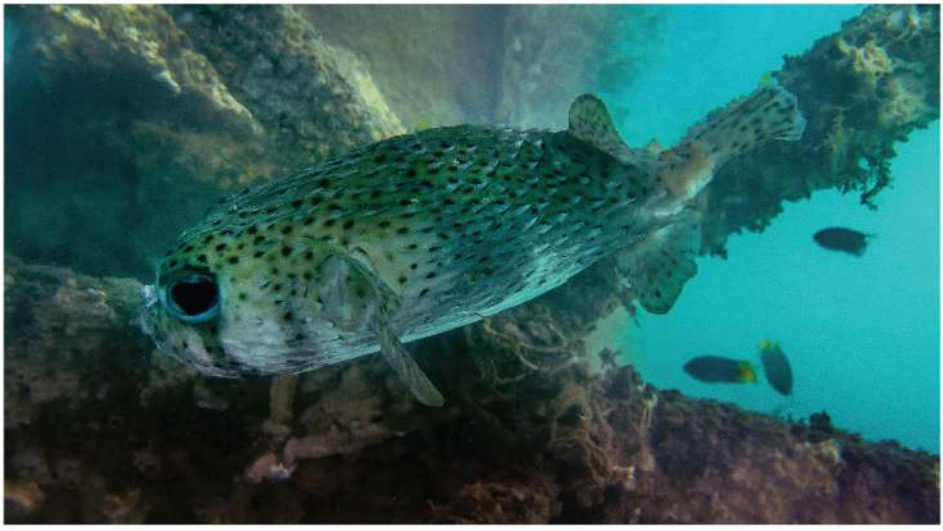
Fin Formula: D-III, 13; P_1-10; P_2-5; A-7
Branchiostegal Rays: 6

Ground colour of head and body light-tan with narrow blackish brown streaks. All fins with blackish brown spots. Body short, deep, slightly compressed. Eyes small, lateral. Mouth oblique with small cardiform teeth on jaws and palate. First dorsal spine about the same length as the 2nd dorsal spine, with a large tuft of filaments. Illicium longer than next dorsal fin ray with small rounded to elongate esca. Pelvic rays unbranched. Skin very rough, covered with small spines.

FAMILY Diodontidae
Porcupinefishes

Porcupinefishs are small to medium sized fish. Body covered with strong spines and have large bases under the skin. Jaws modified to form a beak of two heavy, powerful teeth. No pelvic fin. Background colour light brown and dark brown to black spots present on body. They live benthic zone around coral or rocky reefs. Usually feeds on hard shelled benthic invertebrates.





Diodon hystrix Linnaeus, 1758

Class **Actinopterygii**
Order **Tetraodontiformes**
Family **Diodontidae**

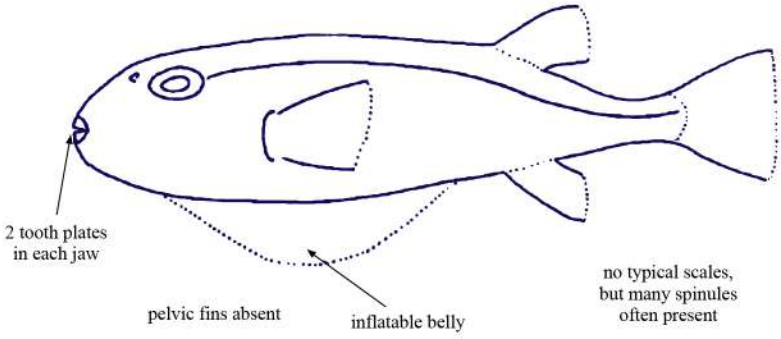


Body brownish dorsally with small black spots; fins yellowish with dark spots. Body flabby; eyes large; head and body with long pointed spines; no downward pointed spine below eye; no barbels on the chin. Pectoral fins broad. Caudal fin rounded.

Remarks: This species has been recorded during underwater scuba diving.

FAMILY Tetraodontidae
Puffers

Puffers are small to moderate-sized fish, with a heavy blunt body capable of rapid inflation by intake of water (or air). Occur in tropical and temperate seas, most frequently in shallow inshore waters, sometimes entering brackish and fresh waters, but a few species are pelagic. The viscera, skin, and blood of most species are poisonous; in some species even the flesh is poisonous.





SL: 125 mm

Arothron immaculatus (Bloch & Schneider, 1801)

Class **Actinopterygii**
Order **Tetraodontiformes**
Family **Tetraodontidae**



Fin formula: D_1-9; D_2-Absent; P_1-17; P_2-Absent; A-9

Colour of body greenish brown, paler ventrally. Dorsal and anal fins yellowish; pectoral fins pale with yellow rays; anal fin yellowish, around black; caudal fin yellow, marginated with black. Body globular, tapered, with swollen abdomen. Body round in cross-section. Head small, below eye concave, snout pointed. Head and body covered with small spinules (slender prickles) except for snout and posterior part of tail. Lateral line complete and curved. Scale absent. Dorsal fin situated nearer to tail and starts from the slightly above the base of anal fin and reaches upto the end of anal fin, having no spines. Pectoral fin large, spread with rounded tip and placed dorsolaterally. Pectoral fin base present in a groove. Pelvic fin absent. Anal fin small. Caudal fin rounded.



SL: 84 mm

Chelonodontops patoca (Hamilton, 1822)

Class	**Actinopterygii**
Order	**Tetraodontiformes**
Family	**Tetraodontidae**



Fin formula: D-10; P_1-16; P_2-Absent; A-8; C-8

Colour greenish-gray to brown on the back with large round to ovate white spots, a broad yellow band running from chin to lower caudal fin base. A patch of spinules on back from behind interorbital nearly to dorsal fin and another on throat and abdomen. Nasal organ in the form of a depression with slightly raised margin expanded before and behind into a pair of elongate flaps.

DNA Barcode: MK560528 (COI)

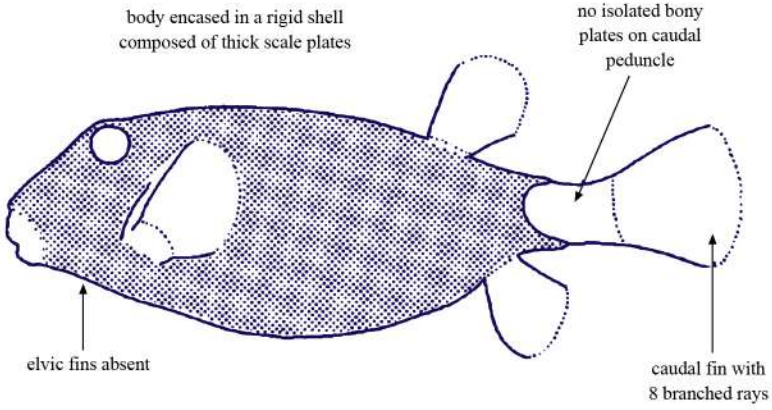
Illustrative Barcode:



MK560528 (COI)

FAMILY Ostraciidae
Boxfishes

Boxfishes are small to medium-sized fish, with wide body nearly completely enclosed in a carapace or cuirass formed of enlarged, thickened scale plates, usually hexagonal in shape and firmly sutured to one another. Occur in rocky and coral reefs and over sand, weed or sponge covered bottoms to depths. Secreting substance which is highly toxic when distressed by others.

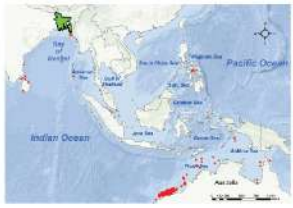




SL: 49 mm

Tetrosomus gibbosus (Linnaeus, 1758)

Class	**Actinopterygii**
Order	**Tetraodontiformes**
Family	**Ostraciidae**



Fin formula: D-9; P_1-10; P_2-Absent; A-9; C-8

Colour of light brown to yellowish gray. Body triangular in cross section. Three sharp spines on longitudinal median ridge on back; 4 or 5 smaller spines on ventrolateral ridge. A small spine on ridge above eye.

DNA Barcode: MK340731 (COI)

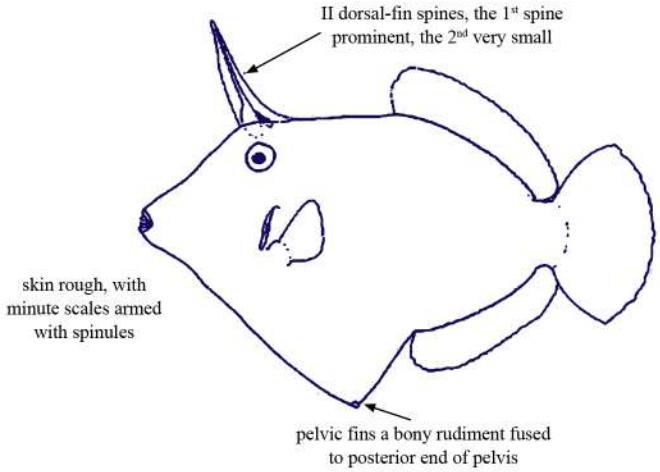
Illustrative Barcode:



MK340731 (COI)

FAMILY Monacanthidae
Filefishes, leatherjackets

Filefishes are small to medium-sized fish, usually with deep, highly compressed bodies; body shape varies from oblong to almost circular. Mouth small. Found in shallow coral and rocky reefs, seagrass beds, and sandy-muddy bottoms in depths. Feed on coral polyps, epiphytes attached to seagrass, or other marine invertebrates.

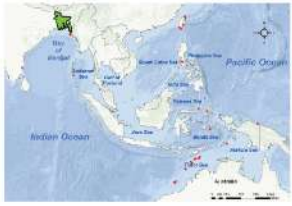




SL: 331 mm

Aluterus scriptus (Osbeck, 1765)

Class **Actinopterygii**
Order **Tetraodontiformes**
Family **Monacanthidae**

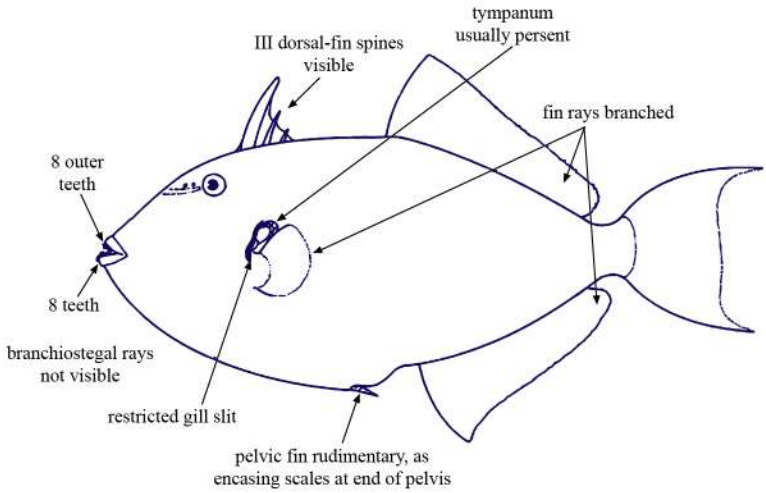


Fin formula: D-II, 47; P_1-14; P_2- Absent; A-52

Body colour olive brown to gray with irregular blue lines and spots. Body elongate and strongly compressed; snout long, the dorsal and ventral profile concave; mouth supra-terminal. Caudal fin long and rounded.

FAMILY Balistidae
Triggerfishes

The term balistiform refers to simultaneous regurgitation of the dorsal and anal fins. Triggerfish possess a large first dorsal spine that can be locked in an erect position with the use of the second dorsal spine. Triggerfish lock themselves using these spines, inside holes and crevices in the reef when threatened or resting. They have very rough skin and have strong jaws and teeth. Most species are benthic, occur in coral and rocky reefs from the coastline. They lay their eggs in a nest near the base of a reef and aggressively guard this nest. Feed on bottom invertebrates, but also zooplankton.





SL: 440 mm

Balistoides viridescens (Bloch & Schneider, 1801)

Class	**Actinopterygii**
Order	**Tetraodontiformes**
Family	**Balistidae**



Fin Formula: D_1-III; D_2-25; P_1-14; A-22; C-12
Branchiostegal Rays: Not visible

Colour of body yellowish gray to brown, the centers of scales dark brown or greenish. The fins are brown-yellowish or reddish with dark edge. Moderately compressed body. A prominent groove before eye. Six rows of small anteriorly projecting spines on caudal peduncle. Pelvic fin tused to one spine. Caudal fin is rounded in the juvenile and truncated in the adults. Scales enlarged above the pectoral fin base and just behind the gill opening.

Remarks: New distributional record from Bangladesh.

DNA Barcode: MK560530 (COI)

Illustrative Barcode:



MK560530 (COI)



SL: 219 mm

Canthidermis maculata (Bloch, 1786)

Class **Actinopterygii**
Order **Tetraodontiformes**
Family **Balistidae**



Fin Formula: D_1-III; D_2-25; P_1-I, 14; A-I, 22; C-II, 10
Branchiostegal Rays: Not visible

Colour of body blue grey to nearly black, usually covered with small white spots that may disappear with growth. Body oblong, elongate, robust, compressed; cheeks without longitudinal grooves; a distinct groove before eye and below nostril. Mouth small.1st dorsal fin has hard spine, 2nd dorsal soft, anterior rays, much longer than posterior rays; anal fins long and curved; most rays of dorsal, anal and pectoral fins branched; tail base compressed. Lateral line inconspicuous. Snout without scales. Skin very rough.

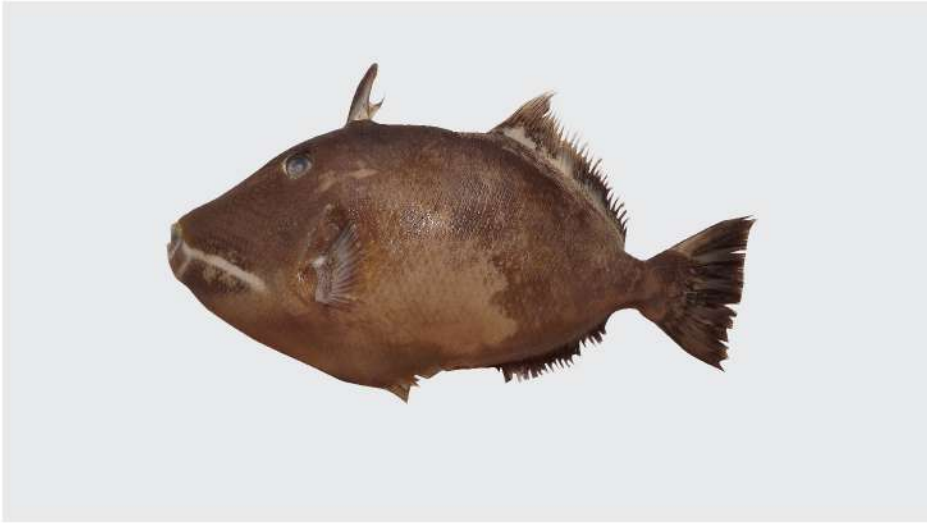
Remarks: New distributional record from Bangladesh.

DNA Barcode: MW940138 (COI)

Illustrative Barcode:



MW940138 (COI)



SL: 226 mm

Sufflamen fraenatum (Latreille, 1804)

Class **Actinopterygii**
Order **Tetraodontiformes**
Family **Balistidae**



Fin Formula: D_1-III; D_2-31; P_1-14; A-28; C-12
Branchiostegal Rays: Not visible

Colour of body gray to brown with length-wise blue lines on head and body; a small blackish spot at upper end of gill opening, preceded by a yellow band that continues in front of eye as a double band. Body deep. Teeth fixed, denticulate on all of margin, with expanded incurved tips. Caudal peduncle with one folding spine. Pelvic fin fused to one spine. Caudal fin deeply emarginate. Rounded caudal fin in juvenile truncate to slightly double emarginate in adult.

DNA Barcode: MK560529 (COI)

Illustrative Barcode:



MK560529 (COI)

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APPENDICES

Appendix-I

List of reef associated fishes reported from Saint Martin's Island, Bangladesh in the presentstudy. (Abbreviations:NE-Not evaluated, LC-Leastconcern, VU-Vulnerable, DD-Data deficient). Classification follows Van der Lan et al. (2022), except for Mulliformes which follows Froese and Pauly (2021). An asterisk (*) after scientific name, denotes the species as a new distributional record in Bangladesh. A caret (^) denotes the uncertain Order level status of the Families mentioned within (as per recent phylogenetic studies), but herein tentatively placed under Perciformes.

Serial No.	Family	Order	Scientific Name	English Common Name	Local Name / Bangla Name	GenBank Accession Number (DNA Barcode Region)	Global IUCN Status
01	Rhinidae	Rhinopristiformes	*Rhina ancylostomus*	Bowmouth guitarfish	Tita marmari		VU
02	Dasyatidae	Myliobatiformes	*Neotrygon indica*	Blue-spotted maskray	Nilldagi haushpata	MK340668(COI)	NE
03	Muraenidae	Anguilliformes	*Gymnothorax favagineus*	Laced moray, Honeycomb moray	Shap machh		LC
04	Plotosidae	Siluriformes	*Plotosus lineatus*	Striped eelcatfish	Sagor kaun	MN458369(COI), MN458370(COI)	LC
05	Synodontidae	Aulopiformes	*Saurida micropectoralis**	Shortfin lizardfish	Achila, Tiktiki machh	MK340700 (COI), MK340701(COI), MK335881(16S), MK335882(16S)	LC
06	Synodontidae	Aulopiformes	*Synodus variegatus**	Variegated lizardfish	Rongin tiktiki machh	MK340725(COI), MK335889(16S)	LC
07	Synodontidae	Aulopiformes	*Trachinocephalus trachinus*	Blunt-nose lizardfish	Bhotanak tiktiki machh	MK340735(COI), MK340736(COI)	LC
08	Holocentridae	Holocentriformes	*Myripristis hexagona*	Doubletoothsoldierfish	Duidati soinik machh	MK340664(COI), MK335869(16S)	LC
09	Holocentridae	Holocentriformes	*Sargocentron rubrum*	Redcoat	Lal soinik machh	MK340697(COI), MK340698(COI)	LC
10	Dactylopteridae	Syngnathiformes	*Dactyloptena orientalis*	Oriental flying gurnard	Urukku machh	MK340606(COI), MK340607(COI)	LC
11	Mullidae	Mulliformes	*Mulloidichthys vanicolensis**	Yellowfin goatfish	Sonali bata	MT374171(COI)	LC
12	Mullidae	Mulliformes	*Parupeneus indicus*	Indian goatfish	Tota bata	MK340674(COI), MK335873(16S)	LC
13	Mullidae	Mulliformes	*Upeneus tragula*	Freckled goatfish	Tota bata	MK340744(COI)	LC
14	Fistulariidae	Syngnathiformes	*Fistularia petimba*	Redcornet fish	Baro thute	MN458408(COI)	LC
15	Syngnathidae	Syngnathiformes	*Hippocampus kuda*	Yellow seahorse	Samudra ghora, Ghora machh		VU
16	Apogonidae	Kurtiformes	*Apogonichthyoides sialis**	Twinbar cardinalfish	Duidagi choyka machh		NE
17	Apogonidae	Kurtiformes	*Lepidamia kalosoma**	Pinstripe cardinalfish	Lal choyka machh	MK340634(COI)	NE
18	Apogonidae	Kurtiformes	*Ostorhinchus cookii**	Cook's cardinalfish	Lal Choikka machh	MK340670(COI), MK335872(16S)	DD

Serial No.	Family	Order	Scientific Name	English Common Name	Local Name / Bangla Name	GenBank Accession Number (DNA Barcode Region)	Global IUCN Status
19	Apogonidae	Kurtiformes	*Ostorhinchus quadrifasciatus*	Broadbanded cardinalfish	Choikka machh		NE
20	Apogonidae	Kurtiformes	*Taeniamia sp.*	Cardinalfish	Choikka machh		NE
21	Gobiidae	Gobiiformes	*Amblyeleotris downingi**	Downing's shrimp-goby	Baila	MK340584(COI)	LC
22	Gobiidae	Gobiiformes	*Cryptocentrus cyanotaenia**	Laced moray, Lagoon shrimpgoby	Dari baila	MK561627(16S), MK560526(COI)	LC
23	Gobiidae	Gobiiformes	*Cryptocentrus maudae**	Maude's shrimpgoby	Baila	MK293942(COI), MK293944(16S)	LC
24	Gobiidae	Gobiiformes	*Istigobius ornatus*	Ornate goby	Baila	MK335855(16S), MK335856(16S)	LC
25	Gobiidae	Gobiiformes	*Valenciennea muralis*	Mural goby	Sundori baila	MK340745(COI), MK340746(COI), MK335891(16S)	LC
26	Lactariidae	Carangiformes	*Lactarius lactarius*	False trevally	Narkeli Mach	MK340629(COI)	DD
27	Sphyraenidae	Carangiformes	*Sphyraena putnamae**	Sawtooth barracuda, Military barracuda	Darkuta	MK340720(COI), MK340721(COI), MK340722(COI), MK340723(COI), MK335884(16S), MK335885(16S), MK335886(16S), MK335887(16S)	NE
28	Menidae	Carangiformes	*Mene maculata*	Moonfish	Chan chanda	MK340663(COI)	LC
29	Carangidae	Carangiformes	*Alectis indica*	Indianthread fish	Pekhom mouri	MK340580(COI), MK340581(COI)	LC
30	Carangidae	Carangiformes	*Alepes kleinii*	Razorbelly scad	Dora mouri	MK340582 (COI), MK340583(COI)	LC
31	Carangidae	Carangiformes	*Caranx heberi**	Blacktip trevally	Kalolej Gomamaitta	MK340591(COI), MK335844(16S)	LC
32	Carangidae	Carangiformes	*Caranx sexfasciatus*	Bigeye trevally	Bora choukkha	MK340592(COI), MK340593(COI), MK340594(COI), MK340595(COI)	LC
33	Carangidae	Carangiformes	*Gnathanodon speciosus*	Golden trevally	Ghora maittya	MK340622(COI)	LC
34	Carangidae	Carangiformes	*Megalaspis cordyla*	Torpedo Scad	Kauwa, Lohamoori	MK340662(COI)	LC
35	Carangidae	Carangiformes	*Parastromateus niger*	Black pomfret	Kala chanda, Hainsh chanda, Bagguilla	MN458393(COI)	LC
36	Carangidae	Carangiformes	*Scomberoides commersonnianus*	Talang queenfish	Chapa maitta, Chaoakori	MK340708(COI), MK340709(COI)	LC
37	Carangidae	Carangiformes	*Scomberoides lysan*	Doublespotted queenfish	Chapa maitta, Chapa	MK340710(COI)	LC
38	Carangidae	Carangiformes	*Scomberoides tol*	Needlescaled queenfish	Bom maittya	MK340711(COI)	LC
39	Carangidae	Carangiformes	*Seriolina nigrofasciata*	Blackbanded trevally	Kalo dora mouri	MK340712(COI)	LC
40	Carangidae	Carangiformes	*Ulua mentalis*	Longrakered trevally	Tek chanda	MK340738(COI)	LC
41	Echeneidae	Carangiformes	*Echeneis naucrates*	Live sharksucker	Hangar chaat	MK340612(COI)	DD

Serial No.	Family	Order	Scientific Name	English Common Name	Local Name / Bangla Name	GenBank Accession Number (DNA Barcode Region)	Global IUCN Status
42	Plesiopidae	Cichliformes	*Plesiops carallicola**	Bluegill longfin	Lomba pakhna nil chitra koi		NE
43	Opistognathidae	Cichliformes	*Opistognathus rosenbergii**	Rosenberg's jawfish	Pana Baila	MW940139(COI)	NE
44	Opistognathidae	Cichliformes	*Opistognathus variabilis**	Variable jawfish	Kosha Baila	MK340669(COI)	LC
45	Pomacentridae	Cichliformes	*Abudefduf septemfasciatus*	Sevenbanded sergeant	Satdagi pathari	MK340573(COI)	LC
46	Pomacentridae	Cichliformes	*Abudefduf sordidus*	Blackspot sergeant	Kalafote pathari	MK340576(COI)	LC
47	Pomacentridae	Cichliformes	*Chromis cinerascens*	Green puller	Ghorerhanda machh	MK340603(COI), MK335848(16S)	LC
48	Pomacentridae	Cichliformes	*Neopomacentrus cyanomos*	Regal demoiselle	Raj Pettoli	MT374163(COI)	NE
49	Pomacentridae	Cichliformes	*Pomacentrus adelus**	Obscure damsel	Dhum Pettoli		NE
50	Pomacentridae	Cichliformes	*Pomacentrus similis**	Similar damsel	Upom Pettoli		NE
51	Pomacentridae	Cichliformes	*Pomacentrus proteus**	Colombo damsel	Colombo Pettoli		NE
52	Pomacentridae	Cichliformes	*Pomacentrus bangladeshius*	Bengal demoiselle	Bongo Pettoli	MK340682(COI), MK340683(COI)	NE
53	Pomacentridae	Cichliformes	*Pomacentrus tripunctatus*	Three-spot damsel	Tindagi Pettoli	MK340684(COI), MK340685(COI), MK340686(COI), MK335876(16S), MK335877(16S), MK335878(16S)	NE
54	Pomacentridae	Cichliformes	*Stegastes obreptus**	Western gregory	Western pettoli		NE
55	Pomacentridae	Cichliformes	*Stegastes apicalis**	Australian gregory	Australian pettoli	MK340724(COI), MK335888(16S)	NE
56	Belonidae	Beloniformes	*Ablennes hians*	Flat needlefish	Thuitta machh	MK340570(COI), MK340571(COI)	LC
57	Hemiramphidae	Beloniformes	*Hemiramphus far**	Black-barred halfbeak	Ek-thutey	MK561619(16S)	NE
58	Blenniidae	Blenniiformes	*Blenniella periophthalmus**	Blue-dashed rockskipper	Nildora benni		LC
59	Blenniidae	Blenniiformes	*Istiblennius dussumieri*	Streaky rockskipper	Dora benni	MK340623(COI), MK340624(COI), MK335853(16S), MK335854(16S)	LC
60	Blenniidae	Blenniiformes	*Petroscirtes breviceps*	Short-head Sabretooth blenny	Chhoto matha benni		LC
61	Priacanthidae	Perciformes^	*Priacanthus hamrur*	Moontailbullseye	Chandaleji pored		LC
62	Priacanthidae	Perciformes^	*Priacanthus tayenus**	Purplespoted bigeye	Begunidagi pored	MT379892(COI)	LC
63	Sillaginidae	Perciformes^	*Sillago mengjialensis*	Silver sillago	Tool bele, Sundra baila	MK340719(COI)	LC
64	Lutjanidae	Perciformes^	*Lutjanus erythropterus*	Crimson snapper	Choukhha	MK340640(COI), MK340641(COI)	LC
65	Lutjanidae	Perciformes^	*Lutjanus fulviflamma*	Dory snapper	Choukhha rashori	MK027401(COI)	LC

Serial No.	Family	Order	Scientific Name	English Common Name	Local Name / Bangla Name	GenBank Accession Number (DNA Barcode Region)	Global IUCN Status
66	Lutjanidae	Perciformes^	*Lutjanus fulvus**	Blacktail snapper	Kalalenja choukhha	MK340642(COI), MK335865(16S)	LC
67	Lutjanidae	Perciformes^	*Lutjanus indicus*	Striped snapper	Dari Rangachhoir	MK340661(COI)	LC
68	Lutjanidae	Perciformes^	*Lutjanus johnii*	Red snapper	Rangachhoir	MK340643(COI), MK340644(COI)	LC
69	Lutjanidae	Perciformes^	*Lutjanus lemniscatus*	Yellow streaked snapper	Lal Machh, Holdedora rangachoir	MK340645(COI), MK340646(COI), MK340647(COI)	LC
70	Lutjanidae	Perciformes^	*Lutjanus lunulatus*	Lunartail snapper	Lalkoral, Rangachoi	MK340649(COI), MK340650(COI), MK340651(COI)	LC
71	Lutjanidae	Perciformes^	*Lutjanus lutjanus*	Bigeye snapper, Rosy snapper	Boro choukhha koral, Kholaddia mach	MK340652(COI), MK340653(COI), MK340654(COI)	LC
72	Lutjanidae	Perciformes^	*Lutjanus rivulatus*	Blubberlip snapper	Mota-thot koral, Fulchoir	MK340658(COI), MK340659(COI), MK340660(COI)	LC
73	Lutjanidae	Perciformes^	*Lutjanus xanthopinnis*	Yellow fin snapper	Holud lenja kholaddia mach	MK340655(COI), MK340656(COI), MK340657(COI)	LC
74	Lutjanidae	Perciformes^	*Pinjalo pinjalo*	Pinjalo	Lal Mach	MT379894(COI)	LC
75	Caesionidae	Perciformes^	*Caesio cuning*	Redbelly yellowtail fusilier	Lalpeti holudleja kholadia	MK340588(COI), MK340589(COI), MK340590(COI)	LC
76	Haemulidae	Perciformes^	*Plectorhinchus pictus (Diagramma pictum)*	Painted sweetlips	Rongeenthuta, Odhamachh	MK340608(COI), MK340609(COI)	NE
77	Haemulidae	Perciformes^	*Plectorhinchus macrospilus**	Largespot sweetlips	Chitraodhamachh, Fotethuta	MK560521(COI), MK340677(COI) MK561628(16S), MK335874(16S)	NE
78	Haemulidae	Perciformes^	*Pomadasys andamanensis**	Andaman grunt	ChardagiNakkoral, Dagidatina	MK340687(COI), MK561623(16S)	NE
79	Haemulidae	Perciformes^	*Pomadasys furcatus*	Banded grunter	Chhoydagi Nakkoral		LC
80	Haemulidae	Perciformes^	*Pomadasys kaakan*	Javelin grunt	Nakkoral, Datina		NE
81	Haemulidae	Perciformes^	*Pomadasys maculatus*	Saddle grunt	Gutidatina	MK340692(COI), MK340693(COI)	LC
82	Lethrinidae	Perciformes^	*Lethrinus crocineus*	Yellowtail emperor	Baro choyka, Holud leja choyka	MK340636(COI), MK340637(COI), MK340638(COI), MK340639(COI)	LC
83	Lethrinidae	Perciformes^	*Lethrinus lentjan*	Pink ear emperor	Lal kansa choyka, Ota		NE
84	Nemipteridae	Perciformes^	*Scolopsis vosmeri*	Whitecheek monocle bream	Tulki, Tulhe	MK340705(COI), MK340706(COI), MK340707(COI)	LC
85	Epinephelidae	Perciformes	*Cephalopholis boenak*	Brown-bandedrockcod	Chitra bole	MK340596(COI)	LC

Serial No.	Family	Order	Scientific Name	English Common Name	Local Name / Bangla Name	GenBank Accession Number (DNA Barcode Region)	Global IUCN Status
86	Epinephelidae	Perciformes	*Cephalopholis formosa*	Bluelined grouper	Neeldagi bole, Chitrabole	MK340597(COI), MK340598(COI), MK340599(COI)	LC
87	Epinephelidae	Perciformes	*Cromileptes altivelis*	Humpback grouper	Khaibai		DD
88	Epinephelidae	Perciformes	*Epinephelus coioides*	Orange-spotted grouper	Bole machh	MN458376(COI)	LC
89	Epinephelidae	Perciformes	*Epinephelus erythrurus*	Cloudy grouper	Megh bole	MK340613(COI), MK340614(COI), MK340615(COI), MK340616(COI)	LC
90	Epinephelidae	Perciformes	*Epinephelus fuscoguttatus**	Brown-marbled grouper	Marbel bole	MK340617(COI), MK335851(16S)	VU
91	Epinephelidae	Perciformes	*Epinephelus latifasciatus*	Striped grouper	Dagibole		LC
92	Epinephelidae	Perciformes	*Epinephelus quoyanus*	Longtin grouper	Fut bole	MT379896(COI)	LC
93	Epinephelidae	Perciformes	*Plectropomus pessuliferus**	Roving coral grouper	Lal bole	MK340678(COI), MK335875(16S)	VU
94	Labridae	Perciformes	*Bodianus neilli*	Bay of Bengal hogfish	Sundori machh, Bongoposundori	MK340586(COI), MK340587(COI)	LC
95	Labridae	Perciformes	*Cheilinus chlorourus*	Floral wrasse	Kala sundori	MK335845(16S)	LC
96	Labridae	Perciformes	*Halichoeres hortulanus*	Checkerboard wrasse	Daba sundori machh		LC
97	Labridae	Perciformes	*Halichoeres nigrescens*	Bubblefin wresse	Sundori machh, Bimbopakhna sundori		LC
98	Labridae	Perciformes	*Halichoeres timorensis*	Timor wrasse	Timur sundori	MN458366(COI), MN458367(COI), MN458368(COI)	LC
99	Labridae	Perciformes	*Labroides dimidiatus*	Bluestreak cleaner wrasse	Nildagi sundori machh		LC
100	Labridae	Perciformes	*Thalassoma lunare*	Moon wrasse	Nihola	MK340733(COI), MK340734(COI)	LC
101	Scaridae	Perciformes	*Chlororusr hakoura**	Raggedfin parrotfish	Kal tota machh	MK560524(COI), MK561629(16S)	LC
102	Scaridae	Perciformes	*Scarus zufar*	Dhofar parrotfish	Sabuj tota machh	MK340702(COI), MK335883(16S)	LC
103	Scaridae	Perciformes	*Scarus ghobban**	Blue-barred Parrotfish	Nildagi tota machh	MK340703(COI)	LC
104	Trichonotidae	Perciformes	*Trichonotus setiger*	Sanddiver	Bali duburi		NE
105	Pinguipedidae	Perciformes	*Parapercis clathrata*	Latticed sandperch	Chitra baila		NE
106	Scorpaenidae	Perciformes	*Pterois russelii*	Plaintail turkeyfish	Rongila, Kura Mach	MK024422(COI)	LC
107	Scorpaenidae	Perciformes	*Pterois miles*	Devil firefish	Rongila, Kura Mach		LC
108	Scorpaenidae	Perciformes	*Scorpaenopsis possi*	Golden scorpionfish	Ketabol machh	MT374166(COI), MT374167(COI), MT374168(COI), MT374169(COI)	LC

Serial No.	Family	Order	Scientific Name	English Common Name	Local Name / Bangla Name	GenBank Accession Number (DNA Barcode Region)	Global IUCN Status
109	Scorpaenidae	Perciformes	*Scorpaenodes guamensis*	Guam scorpionfish	Ketabolmachh	MW940140(COI)	LC
110	Terapontidae	Centrarchiformes	*Terapon theraps*	Large scaled terapon	Barguni	MK340729(COI), MK340730(COI)	LC
111	Kyphosidae	Centrarchiformes	*Kyphosus cinerascens*	Blue sea chub	Bidamachh	MK340627(COI)	LC
112	Pempheridae	Acropomatiformes	*Pempheris malabarica*	Malabar sweeper	Dhangor machh	MT375173(COI)	NE
113	Lobotidae	Acanthuriformes	*Lobotes surinamensis*	Tripletail	Samudra koi, Koi Koral	MK560523(COI)	LC
114	Pomacanthidae	Acanthuriformes	*Pomacanthus annularis*	Blueringed angelfish	Dudhkomol, Sundari mach	MK340679(COI)	LC
115	Drepaneidae	Acanthuriformes	*Drepane longimana*	Banded sicklefish	Dari paan machh	MK340610(COI), MK340611(COI)	NE
116	Drepaneidae	Acanthuriformes	*Drepane punctata*	Spotted sicklefish	Chitra paan machh		NE
117	Chaetodontidae	Acanthuriformes	*Chaetodon decussatus*	Indian vagabond butterflyfish	Projapoti machh	MK340600(COI)	LC
118	Chaetodontidae	Acanthuriformes	*Chaetodon octofasciatus*	Eightband butterflyfish	Atdagi projapoti machh		LC
119	Chaetodontidae	Acanthuriformes	*Heniochus acuminatus*	Pennant coralfish	Kombol machh		LC
120	Ephippidae	Acanthuriformes	*Ephippus orbis*	Orbfish	Hatir kan		LC
121	Ephippidae	Acanthuriformes	*Platax teira*	Spotbelly batfish	Taira machh, Kula machh	MK340675(COI), MK340676(COI)	LC
122	Leiognathidae	Acanthuriformes	*Equulites leuciscus**	Whipfinponyfish	Lombapakhna Tekchanda	MK560527(COI)	LC
123	Leiognathidae	Acanthuriformes	*Karalla daura**	Goldstripeponyfish	Sonali Tekchanda	MK340630(COI), MK340631(COI), MK340632(COI), MK335857(16S), MK335858(16S), MK335859(16S)	NE
124	Leiognathidae	Acanthuriformes	*Aurigcquula longispinis**	Smithurst's ponyfish	Lombakata Tekchanda	MK340633(COI), MK560522(COI), MK335860(16S)	NE
125	Scatophagidae	Acanthuriformes	*Scatophagus argus*	Spotted scat, Spottedbutterfish	Bishtara, Chitra machh	MN703126(COI)	LC
126	Siganidae	Acanthuriformes	*Siganus canaliculatus*	White-spotted rabbitfish	Sadaphota bishki machh	MK340713(COI), MK340714(COI), MK340715(COI)	LC
127	Siganidae	Acanthuriformes	*Siganus javus*	Java rabbitfish	Bishki machh, Bishthi machh	MK340716(COI)	LC
128	Siganidae	Acanthuriformes	*Siganus vermiculatus*	Vermiculated spinefoot	Chitra Bishki machh	MK340717(COI)	LC
129	Zanclidae	Acanthuriformes	*Zanclus cornutus**	Moorish idol	Kula machh		LC
130	Acanthuridae	Acanthuriformes	*Acanthurus xanthopterus*	Yellowfin surgeonfish	Holudpakhna sarjon machh	MK340579(COI)	LC
131	Acanthuridae	Acanthuriformes	*Acanthurus mata*	Elongate surgeonfish	Kala bishki	MK560531(COI)	LC
132	Acanthuridae	Acanthuriformes	*Naso unicornis**	Bluespineunicornfish	Katakopali bishki		LC

Serial No.	Family	Order	Scientific Name	English Common Name	Local Name / Bangla Name	GenBank Accession Number (DNA Barcode Region)	Global IUCN Status
133	Antennariidae	Lophiiformes	*Antennarius hispidus*	Zebra frogfish	Zebra byang machh		NE
134	Diodontidae	Tetraodontiformes	*Diodon hystrix*	Spotfin porcupinefish	Sajaru potka		LC
135	Tetraodontidae	Tetraodontiformes	*Arothron immaculatus*	Immaculate puffer	Potka machh, Nitol potka		LC
136	Tetraodontidae	Tetraodontiformes	*Chelonodontops patoca*	Milkspotted puffer	Sadaphota potka machh	MK560528(COI)	LC
137	Ostraciidae	Tetraodontiformes	*Tetrosomus gibbosus*	Humpback turretfish	Baksho machh	MK340731(COI)	LC
138	Monacanthidae	Tetraodontiformes	*Aluterus scriptus*	Scribbled leatherjacket filefish	File machh		LC
139	Balistidae	Tetraodontiformes	*Balistoides viridescens**	Titan triggerfish, Dotty triggerfish	Boro shorol machh, Trigar machh	MK560530(COI)	NE
140	Balistidae	Tetraodontiformes	*Canthidermis maculata**	Rough triggerfish	Khoshkhoshey shorol machh	MW940138(COI)	LC
141	Balistidae	Tetraodontiformes	*Sufflamen fraenatum*	Masked triggerfish	Mukhosh shorol machh	MK560529(COI)	LC

Appendix-II

List of 'reef associated' fishes reported from Bangladesh marine waters other than the present study along with their IUCN Red List status [Abbreviation used: CR- Critically endangered, EN- Endangered, NT- Near threatened, VU- Vulnerable, NE- Not evaluated, LC- Least concern, DD- Data deficient.] The small letters from 'a' to 's' given in the column of References (REF) denotes the following citations: a. Hussain (1970), b. Tomascik (1997), c. Bernacsek (2001), d. Thompson and Islam (2010), e. Rahman et al. (2009), f. Khan et al. (2013), g. Akash et al. (2021), h. Alam et al. (2018), i. Habib et al. (2018), j. Saha et al. (2018), k. Fanning et al. (2019), l. Singha et al. (2019), m. Ahmed et al. (2020), n. Datta et al. (2020), o. Naznin et al. (2020), p. Saha et al. (2020), q. Ahmed et al. (2021), r. Saha et al. (2021), s. Sharifuzzaman et al. (2021).Classification follows Van der Lan et al. (2022), except for Mulliformes which follows Froese and Pauly (2021). An asterisk (*) after scientific name denotes a species with questionable or uncertain occurrence in the Bangladesh coast, pending for further confirmation based on vouchers. A caret (^) denotes the uncertain Order level status of the Families mentioned within (as per recent phylogenetic studies), but herein tentatively placed under Perciformes.

SL. NO.	Order	Family	Scientific Name	English Name	Global IUCN Status	REF
1	Orectolobiformes	Hemiscylliidae	*Chiloscyllium griseum*	Grey bambooshark	NT	a, e, i
2	Orectolobiformes	Hemiscylliidae	*Chiloscyllium hasseltii*	Hasselt's bambooshark	NE	n
3	Orectolobiformes	Hemiscylliidae	*Chiloscyllium punctatum*	Brownbanded bamboo shark	NT	e
4	Orectolobiformes	Stegostomatidae	*Stegostoma fasciatum*	Zebra shark	EN	d, e
5	Orectolobiformes	Rhincodontidae	*Rhincodon typus*	Whale Shark	EN	a, d, e
6	Carcharhiniformes	Scyliorhinidae	*Atelomycterus marmoratus*	Coral Catshark	NT	e
7	Carcharhiniformes	Carcharhinidae	*Carcharhinus sorrah*	Spot-tail shark	NT	a, e, k, l
8	Carcharhiniformes	Carcharhinidae	*Carcharhinus dussumieri*	Whitecheek shark	EN	e, k
9	Carcharhiniformes	Carcharhinidae	*Carcharhinus falciformis*	Silky shark	VU	a, e, k
10	Carcharhiniformes	Carcharhinidae	*Carcharhinus limbatus*	Blacktip shark	NT	a, e, k, l
11	Carcharhiniformes	Carcharhinidae	*Carcharhinus melanopterus*	Blacktip reef shark	NT	a, e, k, l
12	Carcharhiniformes	Carcharhinidae	*Triaenodon obesus*	Whitetip reef shark	NT	a, e
13	Myliobatiformes	Dasyatidae	*Himantura uarnak*	Honeycomb stingray	EN	a, b, d, e, i, k, l
14	Myliobatiformes	Dasyatidae	*Pastinachus sephen*	Cowtail stingray	NT	a, e
15	Myliobatiformes	Dasyatidae	*Taeniura lymma*	Ribbontail stingray	NT	a, b, d, e
16	Myliobatiformes	Dasyatidae	*Taeniurops meyeni*	Round ribbontail ray	VU	k
17	Myliobatiformes	Dasyatidae	*Urogymnus asperrimus*	Porcupine ray	VU	a, e
18	Myliobatiformes	Myliobatidae	*Aetomylaeus maculatus*	Mottled eagle ray	EN	a, e

SL. NO.	Order	Family	Scientific Name	English Name	Global IUCN Status	REF
19	Myliobatiformes	Myliobatidae	*Mobula birostris*	Giant manta	VU	b
20	Myliobatiformes	Myliobatidae	*Mobula mobular*	Spinetailmobula	NT	e, l
21	Myliobatiformes	Myliobatidae	*Rhinoptera javanica*	Flapnose ray	VU	a
22	Myliobatiformes	Myliobatidae	*Rhinoptera neglecta*	Australian cownose ray	DD	b, d
23	Anguilliformes	Muraenidae	*Echidna nebulosa*	Starry moray	LC	a, c, e
24	Anguilliformes	Muraenidae	*Gymnothorax pseudothyrsoideus*	Highfin moray	LC	a, e, k
25	Anguilliformes	Muraenidae	*Gymnothorax undulatus*	Undulated moray	LC	a, e, k
26	Anguilliformes	Ophichthidae	*Muraenichthys gymnopterus*		LC	a
27	Anguilliformes	Ophichthidae	*Pisodonophis cancrivorus*	Longfin snake-eel	NE	a, k
28	Anguilliformes	Congridae	*Conger cinereus*	Longfin African conger	LC	a, e, k
29	Aulopiformes	Synodontidae	*Saurida gracilis*	Gracile lizardfish	LC	a, e
30	Aulopiformes	Synodontidae	*Synodus indicus*	Indian lizardfish	LC	a, e, k
31	Trachichthyiformes	Monocentridae	*Monocentris japonica*	Pineconefish	LC	a
32	Holocentriformes	Holocentridae	*Myripristis botche**	Blacktip soldierfish	LC	k
33	Holocentriformes	Holocentridae	*Myripristis murdjan*	Pinecone soldierfish	LC	a, e, k, l
34	Holocentriformes	Holocentridae	*Sargocentron caudimaculatum*	Silverspot squirrelfish	LC	a, e, k
35	Batrachoidiformes	Batrachoididae	*Batrachomoeus trispinosus*	Three-spined frogfish	NE	m
36	Scombriformes	Scombridae	*Scomberomorus commerson*	Narrow-barred Spanish mackerel	LC	a, e
37	Syngnathiformes	Mullidae	*Parupeneus heptacanthus**	Goatfish	LC	c
38	Syngnathiformes	Mullidae	*Upeneus supravittatus*	Long-fin goatfish	LC	l
39	Syngnathiformes	Mullidae	*Upeneus vittatus*	Yellowstriped goatfish	LC	j
40	Syngnathiformes	Fistulariidae	*Fistularia commersonii*	Bluespottedcornetfish	NE	k, l
41	Syngnathiformes	Centriscidae	*Centriscus scutatus*	Grooved razor-fish	LC	l
42	Syngnathiformes	Syngnathidae	*Trachyrhamphus serratus*	Crested Pipefish	DD	a, e
43	Kurtiformes	Apogonidae	*Fibramia thermalis**	Half-barred cardinal	NE	a, e
44	Gobiiformes	Gobiidae	*Acentrogobius nebulosus*	Shadow goby	LC	q, s
45	Gobiiformes	Gobiidae	*Amblyeleotris steinitzi*	Steinitz' prawn-goby	LC	d, b
46	Gobiiformes	Gobiidae	*Bathygobius coalitus*	Whitespottedfrillgoby	LC	s
47	Gobiiformes	Gobiidae	*Callogobius hasseltii**	Hasselt's goby	NE	s
48	Gobiiformes	Gobiidae	*Cryptocentrus cinctus*	Yellow prawn-goby	NE	b, d

SL. NO.	Order	Family	Scientific Name	English Name	Global IUCN Status	REF
49	Gobiiformes	Gobiidae	*Exyrias puntang*	Puntang goby	LC	q
50	Gobiiformes	Gobiidae	*Favonigobius gymnauchen**	Sharp-nosed sand goby	LC	q
51	Gobiiformes	Gobiidae	*Istigobius decoratus*	Decorated goby	LC	s
52	Carangiformes	Sphyraenidae	*Sphyraena barracuda**	Great barracuda	LC	a, e, k
53	Carangiformes	Sphyraenidae	*Sphyraena forsteri**	Bigeye barracuda	NE	a, b, d, e, i, k,
54	Carangiformes	Sphyraenidae	*Sphyraena jello**	Pickhandle barracuda	NE	a, e, i, k
55	Carangiformes	Sphyraenidae	*Sphyraena obtusata*	Obtuse barracuda	NE	a, d, e, k, l
56	Carangiformes	Sphyraenidae	*Sphyraena qenie**	Blackfin barracuda	NE	b, d
57	Carangiformes	Carangidae	*Alectis ciliaris*	African pompano	LC	a, e, k, l
58	Carangiformes	Carangidae	*Alepes djedaba*	Shrimp scad	LC	a, e, k, l
59	Carangiformes	Carangidae	*Atule mate*	Yellowtail scad	LC	a, e, k
60	Carangiformes	Carangidae	*Carangoides armatus*	Longfin trevally	LC	a, e, i, k, l
61	Carangiformes	Carangidae	*Carangoides chrysophrys*	Longnose trevally	LC	a, e, k, l
62	Carangiformes	Carangidae	*Carangoides coeruleopinnatus**	Coastal trevally	LC	k
63	Carangiformes	Carangidae	*Carangoides ferdau*	Blue trevally	LC	a, e, k, l
64	Carangiformes	Carangidae	*Carangoides hedlandensis*	Bumpnose Trevally	LC	i, l
65	Carangiformes	Carangidae	*Carangoides malabaricus*	Malabar trevally	LC	a, e, d, k, l
66	Carangiformes	Carangidae	*Caranx ignobilis*	Giant trevally	LC	a, b, d, e, i
67	Carangiformes	Carangidae	*Caranx melampygus*	Bluefin trevally	LC	a, d, e, k
68	Carangiformes	Carangidae	*Decapterus kurroides*	Redtailscad	LC	a, e, i, k
69	Carangiformes	Carangidae	*Decapterus macrosoma*	Shortfin scad	LC	k
70	Carangiformes	Carangidae	*Decapterus maruadsi*	Japanese scad	LC	k, l
71	Carangiformes	Carangidae	*Elagatis bipinnulata*	Rainbow runner	LC	l, r
72	Carangiformes	Carangidae	*Naucrates ductor*	Pilotfish	LC	a, e
73	Carangiformes	Carangidae	*Scomberoides tala*	Barred queenfish	LC	a, e, k
74	Carangiformes	Carangidae	*Selar boops*	Oxeye scad	LC	c, d, e, k
75	Carangiformes	Carangidae	*Selar crumenophthalmus*	Bigeye scad	LC	a, d, e, k, l
76	Carangiformes	Carangidae	*Selaroides leptolepis*	Yellowstripescad	LC	a, e
77	Carangiformes	Carangidae	*Seriola rivoliana*	Longfin yellowtail	LC	k, l
78	Carangiformes	Carangidae	*Trachinotus baillonii*	Small spotted dart	LC	a, e

SL. NO.	Order	Family	Scientific Name	English Name	Global IUCN Status	REF
79	Carangiformes	Carangidae	*Trachinotus blochii*	Snubnose pompano	LC	a, e
80	Carangiformes	Echeneidae	*Remora remora*	Shark sucker	LC	a, e, i, k
81	Carangiformes	Rachycentridae	*Rachycentron canadum*	Cobia	LC	a, d, e, i, k, l
82	Cichliformes	Pomacentridae	*Abudefduf bengalensis*	Bengal sergeant	LC	a, b, d, e
83	Cichliformes	Pomacentridae	*Abudefduf sexfasciatus*	Scissortail sergeant	NE	b, d, e
84	Cichliformes	Pomacentridae	*Abudefduf vaigiensis*	Indo-Pacific sergeant	LC	a
85	Cichliformes	Pomacentridae	*Amphiprion ephippium*	Saddle anemonefish	LC	a, e
86	Cichliformes	Pomacentridae	*Amphiprion percula*	Orange clownfish	NE	a, e
87	Cichliformes	Pomacentridae	*Cheiloprion labiatus**	Big-lip damsel	NE	a, e
88	Cichliformes	Pomacentridae	*Chromis ternatensis*	Ternate chromis	NE	a
89	Cichliformes	Pomacentridae	*Chromis viridis*	Blue green damselfish	NE	e
90	Cichliformes	Pomacentridae	*Chrysiptera brownriggii*	Surge damselfish	NE	d , b
91	Cichliformes	Pomacentridae	*Chrysiptera unimaculata*	Onespot demoiselle	LC	d , b
92	Cichliformes	Pomacentridae	*Dischistodus perspicillatus*	White damsel	NE	a, e
93	Cichliformes	Pomacentridae	*Dischistodus prosopotaenia*	Honey-head damsel	NE	a
94	Cichliformes	Pomacentridae	*Premnas biaculeatus*	Spinecheek anemonefish	NE	a, e
95	Cichliformes	Pomacentridae	*Pristotis obtusirostris*	Gulf damselfish	NE	a, e
96	Atheriniformes	Atherinidae	*Atherinomorus lacunosus*	Wide-banded hardyhead silverside	NE	d
97	Beloniformes	Belonidae	*Strongylura leiura*	Banded needlefish	NE	a, e, i, l
98	Beloniformes	Belonidae	*Tylosurus crocodilus*	Hound needlefish	LC	a, b, d, e, l
99	Mugiliformes	Mugilidae	*Ellochelon vaigiensis*	Squaretail mullet	LC	g
100	Blenniiformes	Blenniidae	*Cirripectes castaneus**	Chestnut eyelash-blenny	LC	b, d
101	Blenniiformes	Blenniidae	*Ecsenius bicolor*	Bicolor blenny	LC	b, d
102	Blenniiformes	Blenniidae	*Omobranchus punctatus*	Muzzled Blenny	LC	g, s
103	Blenniiformes	Blenniidae	*Salarias fasciatus*	Jewelled blenny	LC	b, d
104	Perciformes^	Priacanthidae	*Heteropriacanthus cruentatus*	Glasseye	LC	k
105	Perciformes^	Lutjanidae	*Lutjanus argentimaculatus*	Mangrove red snapper	LC	a, e, k, l
106	Perciformes^	Lutjanidae	*Lutjanus bohar*	Two-spot red snapper	LC	a, e, k
107	Perciformes^	Lutjanidae	*Lutjanus ehrenbergii*	Blackspot snapper	LC	a
108	Perciformes^	Lutjanidae	*Lutjanus gibbus*	Humpback red snapper	LC	a, e

SL. NO.	Order	Family	Scientific Name	English Name	Global IUCN Status	REF
109	Perciformes^	Lutjanidae	*Lutjanus malabaricus*	Malabar blood snapper	LC	a, d, k , b
110	Perciformes^	Lutjanidae	*Lutjanus sebae*	Emperor red snapper	LC	a, e
111	Perciformes^	Lutjanidae	*Lutjanus vitta*	Brownstripe red snapper	LC	d
112	Perciformes^	Caesionidae	*Caesio xanthonota*	Yellowback fusilier	LC	b, d
113	Perciformes^	Gerreidae	*Gerres erythrourus*	Deep-bodied mojarra	LC	k, p
114	Perciformes^	Gerreidae	*Gerres oyena*	Common silver-biddy	LC	d
115	Perciformes^	Haemulidae	*Plectorhinchus cinctus*	Crescent sweetlips	NE	a, e
116	Perciformes^	Haemulidae	*Plectorhinchus vittatus*	Indian Ocean oriental sweetlips	LC	a, e
117	Perciformes^	Lethrinidae	*Gymnocranius griseus*	Grey large-eye bream	LC	a, e, k
118	Perciformes^	Lethrinidae	*Lethrinus erythracanthus**	Orange-spotted emperor	LC	b, d
119	Perciformes^	Lethrinidae	*Lethrinus nebulosus*	Spangled emperor	LC	a, e, k, l
120	Perciformes^	Lethrinidae	*Lethrinus olivaceus**	Longface emperor	LC	b, d
121	Perciformes^	Nemipteridae	*Nemipterus furcosus*	Fork-tailed threadfin bream	LC	a, e
122	Perciformes^	Nemipteridae	*Scolopsis bimaculata*	Thumbprint monocle bream	LC	a, e
123	Perciformes	Epinephelidae	*Cephalopholis miniata**	Vermillion grouper	LC	c
124	Perciformes	Epinephelidae	*Cephalopholis sonnerati**	Tomato hind	LC	a, e
125	Perciformes	Epinephelidae	*Epinephelus chlorostigma**	Brownspotted grouper	LC	k
126	Perciformes	Epinephelidae	*Epinephelus fasciatus**	Blacktip grouper	LC	c
127	Perciformes	Epinephelidae	*Epinephelus lanceolatus*	Giant grouper	DD	a, b, d, e, i, k,
128	Perciformes	Epinephelidae	*Epinephelus malabaricus*	Malabar grouper	LC	a, e, k, l
129	Perciformes	Grammistidae	*Grammistes sexlineatus*	Goldenstripedsoapfish	LC	a, e, k
130	Perciformes	Labridae	*Choerodon robustus**	Robust tuskfish	NE	e
131	Perciformes	Labridae	*Coris aygula**	Clown coris	LC	a, e
132	Perciformes	Labridae	*Coris gaimard**	African coris	LC	b, d
133	Perciformes	Labridae	*Halichoeres marginatus*	Dusky wrasse	LC	a, e
134	Perciformes	Labridae	*Hemigymnus fasciatus*	Barred thicklip	LC	a, e
135	Perciformes	Pinguipedidae	*Parapercis diplospilus*	Doublespotgrubfish	NE	p
136	Perciformes	Scaridae	*Scarus psittacus*	Common parrotfish	LC	a, e
137	Perciformes	Scorpaenidae	*Pterois miles*	Miles lion fish	LC	c, e, k, l
138	Perciformes	Scorpaenidae	*Pterois mombasae**	Frillfin turkeyfish	LC	k

SL. NO.	Order	Family	Scientific Name	English Name	Global IUCN Status	REF
139	Perciformes	Scorpaenidae	*Scorpaenodes scaber*	Pygmy scorpionfish	DD	e
140	Centrarchiformes	Kyphosidae	*Kyphosus vaigiensis*	Brassy chub	LC	b, d
141	Centrarchiformes	Cirrhitidae	*Cirrhitichthys bleekeri*	Hawkfish	NE	e
142	Acropomatiformes	Pempheridae	*Pempheris molucca*	Moluccan-sweeper	NE	a, e
143	Acanthuriformes	Pomacanthidae	*Pomacanthus imperator*	Emperor angelfish	LC	a, e
144	Acanthuriformes	Pomacanthidae	*Pomacanthus semicirculatus*	Semicircle angelfish	LC	a, e, k
145	Acanthuriformes	Chaetodontidae	*Chaetodon collare*	Redtail butterflyfish	LC	a, b, d, e
146	Acanthuriformes	Chaetodontidae	*Chaetodon melannotus*	Blackback butterflyfish	LC	a, d, e
147	Acanthuriformes	Chaetodontidae	*Heniochus singularius*	Singular Bannerfish	LC	b, d
148	Acanthuriformes	Ephippidae	*Platax orbicularis*	Orbicular batfish	LC	a, e, l
149	Acanthuriformes	Ephippidae	*Tripterodon orbis*	African spadefish	NE	k
150	Acanthuriformes	Leiognathidae	*Gazza achlamys*	Smalltoothedponyfish	LC	o
151	Acanthuriformes	Siganidae	*Siganus fuscescens*	Mottled spinefoot	LC	p
152	Acanthuriformes	Siganidae	*Siganus stellatus*	Brown-spotted spinefoot	LC	b, d
153	Acanthuriformes	Acanthuridae	*Acanthurus lineatus*	Lined surgeonfish	LC	d , b
154	Tetraodontiformes	Diodontidae	*Cyclichthys orbicularis*	Birdbeak burrfish	NE	k, l
155	Tetraodontiformes	Tetraodontidae	*Arothron reticularis*	Reticulated pufferfish	LC	a, e
156	Tetraodontiformes	Tetraodontidae	*Arothron stellatus*	Stellate puffer	LC	a, e, d
157	Tetraodontiformes	Tetraodontidae	*Lagocephalus sceleratus*	Silver-cheeked toadfish	LC	a, e
158	Tetraodontiformes	Ostraciidae	*Lactoria cornuta*	Longhorn cowfish	NE	f
159	Tetraodontiformes	Ostraciidae	*Ostracion cubicum*	Yellow boxfish	LC	a, e, i, k
160	Tetraodontiformes	Ostraciidae	*Rhynchostracion nasus*	Shortnose boxfish	NE	a, e, k
161	Tetraodontiformes	Monacanthidae	*Aluterus monoceros*	Unicorn leatherjacket filefish	LC	a, k
162	Tetraodontiformes	Balistidae	*Pseudobalistes flavimarginatus*	Yellowmargin triggerfish	NE	h

Appendix-III

List of reef associated fishes reported from Bangladesh marine waters but excluded from the list provided in Appendix II, for their (apparent) misidentification. For references see Appendix II.

SL. NO.	Family	Scientific Name	Reference	Comments
1	Apogonidae	*Apogonichthyoides maculipinnis*	k	An Western Indian Ocean species
2	Apogonidae	*Ostorhinchus endekataenia*	e	A West Pacific Species! Highly likely to be misidentification of *Ostorhinchus cookii*!
3	Apogonidae	*Ostorhinchus novemfasciatus*	e, d, k	A West Pacific Species! Highly likely to be misidentification of *Ostorhinchus cookii*!
4	Apogonidae	*Ostorhinchus septemstriatus*	a, d, e, i	A West Pacific Species! Highly likely to be misidentification of *Ostorhinchus cookii*!
5	Apogonidae	*Ostorhinchus fasciatus*	a, e, i, k, l	A West Pacific species. The Bay of Bengal species is mostly *Ostorhinchus quadrifasciatus*.
6	Callionymidae	*Diplogrammus goramensis*	a, e, k	A West Pacific species.
7	Carangidae	*Caranx hippos*	a	An Atlantic Ocean species.
8	Carangidae	*Trachurus indicus*	k	A Western Indian Ocean species.
9	Chaetodontidae	*Chaetodon vagabundus*	a, d, e	Most likely misidentification of *Chaetodon decussates*.
10	Chaetodontidae	*Parachaetodon ocellatus*	a, e, k	A West Pacific species.
11	Congridae	*Heteroconger perissodon*	p	Misidentification as per image provided in reference. Image may represent *Lamnostomaorientale*.
12	Epinephelidae	*Epinephelus hexagonatus*	b, d	Most likely misidentification of *Epinephelus quoyanus*.
13	Epinephelidae	*Epinephelus merra*	a, e	Most likely misidentification of *Epinephelus quoyanus*.
14	Epinephelidae	*Epinephelus morrhua*	a, e, k	Most likely misidentification of *Epinephelus radiatus*.
15	Epinephelidae	*Epinephelus polyphekadion*	b, d	Most likely misidentification of *Epinephelus fuscoguttatus*.
16	Epinephelidae	*Epinephelus tauvina*	k, c	Most likely misidentification of *Epinephelus coioides*.
17	Gerreidae	*Gerres oblongus*	a, e, k	Highly likely to be misidentification of *Gerres oyena*.
18	Gerreidae	*Oxyurichthys petersii*	k	A Western Indian Ocean species.
19	Hemiramphidae	*Hyporhamphus unifasciatus*	a, e	An Atlantic Ocean species.
20	Holocentridae	*Myripristis vittata*	b, d	An oceanic island species. Unusual for SMI.
21	Lutjanidae	*Lutjanus russellii*	o	The Bay of Bengal species is *Lutjanus indicus*
22	Lutjanidae	*Lutjanus sanguineus*	a, d, e	A Western Indian Ocean species.
23	Mugilidae	*Crenimugil crenilabis*	s	Misidentification as per image provided in reference. Image closely resembles *Ellochelon vaigiensis*.
24	Mullidae	*Parupeneus forsskali*	a, e, i, k	A Red Sea/North-west Indian Ocean species
25	Mullidae	*Upeneus asymmetricus*	p	A West Pacific species. Provided image likely represents a faded *Upeneus tragula*.

SL. NO.	Family	Scientific Name	Reference	Comments
26	Mullidae	*Upeneus japonicus*	k, l	A North-west Pacific species.
27	Mullidae	*Upeneus suahelicus*	p	A Western Indian Ocean species. Provided image represents young of *Upeneus vittatus*.
28	Mullidae	*Upeneus taeniopterus*	i	Misidentification of *Upeneus vittatus*.
29	Muraenidae	*Gymnothorax punctatus*	e, d, i, k	Misidentification. A Western Indian Ocean species.
30	Polynemidae	*Polydactylus sexfilis*	a, e	An oceanic island species. Unlikely to occur in SMI. Probably misidentification of *Filimanus xanthonema*.
31	Pomacentridae	*Dascyllus marginatus*	a, e	A Red Sea Species!
32	Pomacentridae	*Neopomacentrus azysron*	b, d	Distribution does not cover Northern Bay of Bengal, Bangladesh.
33	Pomacentridae	*Pomacentrus caeruleus*	b, d	Distribution does not cover Northern Bay of Bengal, Bangladesh.
34	Pomacentridae	*Pomacentrus coelestis*	b, d	Distribution does not cover Northern Bay of Bengal, Bangladesh.
35	Pomacentridae	*Pomacentrus vaiuli*	b, d	Distribution does not cover Northern Bay of Bengal, Bangladesh.
36	Pomacentridae	*Stegastes fasciolatus*	b, d	Distribution does not cover Northern Bay of Bengal, Bangladesh.
37	Pomacentridae	*Stegastes lividus*	e	An Eastern Central Pacific species.
38	Scaridae	*Bolbometopon muricatum*	b, d	A West Pacific species. Misidentification of Chlorurus rhakoura.
39	Scaridae	*Chlorurus japanensis*	a	A West Pacific species
40	Scaridae	*Scarus rivulatus*	a	A West Pacific species
41	Scaridae	*Scarus taeniopterus*	p	A Western Atlantic species. Provided image shows young of *Scarus zufar*.

Appendix-IV

Data sheet used for keeping records of morphological and morphometric analysis

Morphomeristic Characteristics

Lab Code: Num. of Ind. Date of Coll.

Body Length

TL:
SL:
FL:
BW:
BD:
HL:
IOL:
PrOL:
PoOL:
ED:
SnL:
COL:

Dorsal Fin

D_1BL	D_2BL
D_1FL	D_2FL
D_1FR	D_2FR

Pectoral Fin

P_1BL	P_1FL
P_1FR	

Pelvic Fin

P_2BL	P_2FL
P_2FR	

Anal Fin

ABL	AFL
AFR	

Caudal Fin

CBL	CFL
CFR	

Mouth Position:
Jaw:
Scale:
Teeth:
Barble:
Lateral Line:
BR:
GR:

Species Name:
Order:
Family:

Body Colour:
Body Shape and Size:
Marking: Head:

Date of Morphomeristic Study: **Checked By:**

INDEX

A

Ablennes hians 117
Abudefduf septemfasciatus 105
Abudefduf sordidus 106
Acanthuridae 224
Acanthurus mata 226
Acanthurus xanthopterus 225
Alectis indica 83
Alepes kleinii 84
Aluterus scriptus 239
Amblyeleotris downingi 71
Antennariidae 228
Antennarius hispidus 229
Apogonichthyoides sialis 65
Apogonidae 64
Arothron immaculatus 233
Aurigcquula longispina 215

B

Balistidae 240
Balistoides viridescens 241
Belonidae 116
Blenniella periophthalmus 121
Blenniidae 120
Bodianus neilli 169

C

Caesio cuning 143
Caesionidae 142
Canthidermis maculate 242
Carangidae 82
Caranx heberi 85
Caranx sexfasciatus 86
Cephalopholis boenak 159
Cephalopholis formosa 160
Chaetodon decussatus 205
Chaetodon octofasciatus 206
Chaetodontidae 204
Cheilinus chlorourus 170
Chelonodontops patoca 234
Chlorurus rhakoura 177
Chromis cinerascens 107
Cromileptes altivelis 161
Cryptocentrus cyanotaenia 72
Cryptocentrus maudae 73

D

Dactyloptena orientalis 55
Dactylopteridae 54
Dasyatidae 40
Diodon hystrix 231
Diodontidae 230
Drepane longimana 201
Drepane punctata 202
Drepaneidae 200

E

Echeneidae 96
Echeneis naucrates 97
Ephippidae 208
Ephippus orbis 209
Epinephelidae 158
Epinephelus coioides 162
Epinephelus erythrurus 163
Epinephelus fuscoguttatus 164
Epinephelus latifasciatus 165
Epinephelus quoyanus 166
Equulites leuciscus 213

F

Fistularia petimba 61
Fistulariidae 60

G

Gnathanodon speciosus 87
Gobiidae 70
Gymnothorax favagineus 43

H

Haemulidae 144
Halichoeres hortulanus 171
Halichoeres nigrescens 172
Halichoeres timorensis 173
Hemiramphidae 118
Hemiramphus far 119
Heniochus acuminatus 207
Hippocampus kuda 63
Holocentridae 50

I

Istiblennius dussumieri 122
Istigobius ornatus 74

K

Kyphosidae 192
Kyphosus cinerascens 193
Karalla daura 214

L

Labridae 168
Labroides dimidiatus 174
Lactariidae 76
Lactarius lactarius 77
Leiognathidae 212
Lepidamia kalosoma 66
Lethrinidae 152
Lethrinus crocineus 153
Lethrinus lentjan 154
Lobotes surinamensis 197
Lobotidae 196
Lutjanidae 130
Lutjanus erythropterus 131
Lutjanus fulviflamma 132
Lutjanus fulvus 133
Lutjanus indicus 140
Lutjanus johnii 134
Lutjanus lemniscatus 135
Lutjanus lunulatus 136
Lutjanus lutjanus 137
Lutjanus rivulatus 139
Lutjanus xanthopinnis 138

M

Megalaspis cordyla 88
Mene maculata 81
Menidae 80
Monacanthidae 238
Mullidae 56
Mulloidichthys vanicolensis 57
Muraenidae 42
Myripristis hexagona 51

N

Naso unicornis 227
Nemipteridae 156
Neopomacentrus cyanomos 108
Neotrygon indica 41

O

Opistognathidae 100
Opistognathus rosenbergii 101
Opistognathus variabilis 102
Ostorhinchus cookii 68
Ostorhinchus quadrifasciatus 67
Ostraciidae 236

P

Parapercis clathrata 183
Parastromateus niger 89
Parupeneus indicus 58
Pempheridae 194
Pempheris malabarica 195
Petroscirtes breviceps 123
Pinguipedidae 182
Pinjalo pinjalo 141
Platax teira 210
Plectorhinchus macrospilus 146
Plectorhinchus pictus 145
Plectropomus pessuliferus 167
Plesiopidae 98
Plesiops corallicola 99
Plotosidae 44
Plotosus lineatus 45
Pomacanthidae 198
Pomacanthus annularis 199
Pomacentridae 104
Pomacentrus adelus 109
Pomacentrus proteus 111
Pomacentrus similis 110
Pomacentrus tripunctatus 113
Pomacentrus bangladeshius 112
Pomadasys andamanensis 147
Pomadasys furcatus 148
Pomadasys kaakan 149
Pomadasys maculatus 150
Priacanthidae 124
Priacanthus hamrur 125
Priacanthus tayenus 126
Pterois russelii 185
Pterois miles 186

R

Rhina ancylostoma 39
Rhinidae 38

S

Sargocentron rubrum 52
Saurida micropectoralis 47
Scaridae 176
Scarus zufar 178
Scarus ghobban 179
Scatophagidae 216
Scatophagus argus 217
Scolopsis vosmeri 157
Scomberoides commersonnianus 90
Scomberoides lysan 91
Scomberoides tol 92
Scorpaenidae 184
Scorpaenopsis sp. 187
Scorpaenodes guamensis 188
Seriolina nigrofasciata 93
Siganidae 218
Siganus canaliculatus 219
Siganus javus 220
Siganus vermiculatus 221
Sillaginidae 228
Sillago sihama 229
Sphyraena putnamae 79
Sphyraenidae 78
Stegastes obreptus 114
Stegastes apicalis 115
Sufflamen fraenatum 243
Syngnathidae 62
Synodontidae 46
Synodus variegatus 48

T

Taeniamia sp. 69
Terapon theraps 191
Terapontidae 190
Tetraodontidae 232
Tetrosomus gibbosus 237
Thalassoma lunare 175
Trachinocephalus trachinus 49
Trichonotidae 180
Trichonotus setiger 181

U

Ulua mentalis 94
Upeneus tragula 59

V

Valenciennea muralis 75

Z

Zanclidae 222
Zanclus cornutus 223

GLOSSARY

Abdomen: Belly or lower surface of a fish
Abdominal: Pertaining to belly
Adipose eyelid: Fatty transparent tissue that partially covers eye of some fishes
Adipose fin: A fleshy fin without rays or spines located between dorsal and caudal fins
Anal fin: Median, unpaired fin located on ventral side of body just behind anus
Anterior: Towards head end of fish
Antrose: Directed forward or turned anteriorly
Anus: External opening of intestine or vent
Bar: A vertical band with colour
Barbels: Fleshy elongated tentacles, generally found under chin
Basal: At or near base
Bifurcate: Divided into two parts; bifid, forked
Blind side: Light coloured underside of fish, which lacks eyes
Branched rays: A soft fin ray that is split into two or more parts distally
Branchiostegal rays: Series of long, curved and often pointed bones that support the branchiostegal (gill) membrane
Branchial: Pertaining to gills
Canine: Conical pointed tooth, usually larger than surrounding teeth
Carnivorous: Feeding on animals
Caudal fin: Fin at the rear of fish; tail fin
Caudal peduncle: Narrow part of body between rear end of anal fin base to base of caudal fin
Cheek: Area between eye and edge of preopercle bone
Compressed: Flattened from side to side
Concave: Curved inward
Continuous: Unbroken; refers to dorsal fin in which spinous part is joined to soft part, without notch
Convex: Curved outward
Ctenoid: Scale with minute teeth or spines on rear margin
Cycloid: Thin, flexible scale with smooth surface
Denticles: Small tooth like structures
Depressed: Flattened from dorso ventrally
Distal: Farthest from point of attachment
Dorsal: Pertaining to back
Dorsum: Upper surface of head or body
Filamentous: Thread like; refers to elongated fin rays
Finlet: A small fin with one or two rays often following dorsal or anal fins
Forked: Distinct upper and lower lobe, separated by deep notch
Fusiform: Spindle shaped; tapering at both ends
Gill arch: Bony structure that supports the gill filaments
Gill rakers: Bony projections along anterior edge of gill arches

Habitat: Place where a species normally lives
Incisor: A tooth flattened at tip like chisel
Inferior: The position of mouth when on the underside of head
Interdorsal: Between two dorsal fins
Interorbital: The area between eyes, on top of head
Juvenile: Young of fish
Keel: Narrow or sharp ridge-like process; often located at base of caudal fin
Lateral line scales: Scales on body that are perforated by sensory tubes, extending from head to base of caudal fin
Lateral: Towards side
Maxilla: Each half of upper jaw
Mucus: A slimy substance secreted by skin of fish
Naked: Smooth or scaleless
Nape: Back of head to dorsal fin
Nasal: Pertaining to nose or nostrils
Opercular: Pertaining to operculum
Papilla: A small fleshy projection on skin.
Pectoral fins: the anterior paired fins
Pectoral: Pertaining to breast area
Pelvic fins: Paired ventral fins located below or behind pectoral fins
Posterior: Toward rear end of fish
Postorbital: Part of head behind eye
Preoperculum: Front part of gill cover
Preorbital: Region before and below eye
Protractile: Capable of forward extension; refers to mouth
Ray: Flexible structure supporting the membrane
Scute: A large shield like scale, usually with a ridge or keel
Serrate: Bearing small saw liker spines
Snout: Part of head in front of eyes
Soft dorsal: Part of dorsal fin supported by flexible rays
Spine: A rigid structure supporting membrane of a fin
Spiracle: Respiratory opening behind eye in sharks and rays
Sting: Long spine on tail in some skates and rays
Stripe: A horizontal colour band
Submarginal: Immediately inside margin
Tail: Area behind anus of many fishes (not just caudal fin)
Terminal: Anterior end of head (pertaining to mouth)
Ventral: Pertaining to lower surface
Ventrals Ventral fins: Paired pelvic fins
Villiform: Small fine teeth
Vomer: Median bone in front of palate, often bears teeth

Reef fishes of Saint Martin's Island, Bangladesh

An identification book with DNA barcodes

ABOUT LEAD AUTHOR

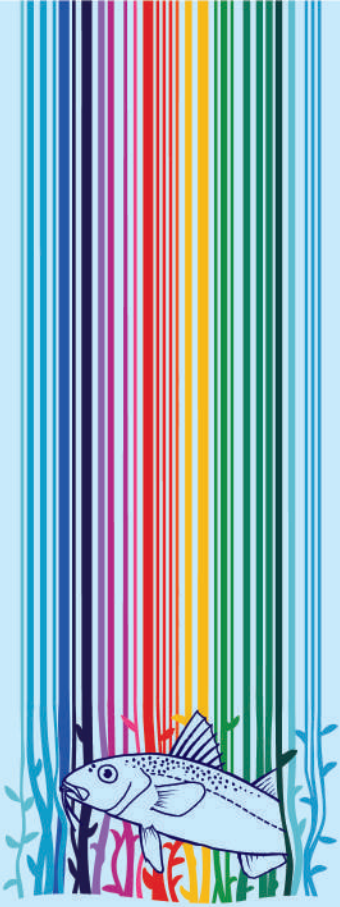


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