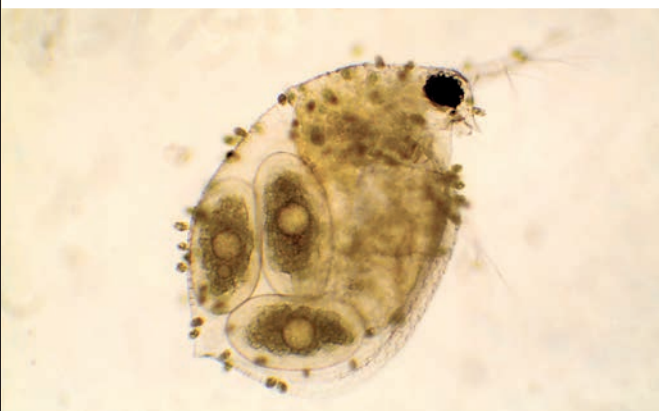




Red List of Bangladesh

Volume 6: Crustaceans



INTERNATIONAL UNION FOR CONSERVATION OF NATURE



Red List of Bangladesh

Volume 6: Crustaceans

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Volume 2: Mammals

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Volume 5: Freshwater Fishes

Volume 6: Crustaceans

Volume 7: Butterflies

PREFACE

The IUCN Red List of Threatened Species™ has been assessing the conservation status of plants, fungi and animal species on a global scale for the past 50 years. Since its conception in 1964, the Red List has evolved to become the world's most comprehensive information source on the extinction risk of species. Far more than a list of species and their status, it is a powerful tool to inform and catalyze action among scientists, activists, and politicians. It is used by government agencies, wildlife departments, conservation related non-governmental organizations (NGOs), natural resource planners, educational organizations, students, and the business community. The Red List process has become a massive enterprise involving the IUCN Global Species Program staff, partner organizations and experts in the IUCN Species Survival Commission and partner networks who compile the species information to make The IUCN Red List the indispensable product it is today.

IUCN Bangladesh had published the first Red List of Threatened Animals of Bangladesh in 2000. The list has been updated through a sub-project entitled 'Updating Species Red List of Bangladesh' under the 'Strengthening Regional Cooperation for Wildlife Protection (SRCWP)' Project of the Bangladesh Forest Department which is funded by The World Bank. The project commenced in December 2013 and ends in June 2016. A total of 1619 species has been assessed and updated from seven different animal groups (mammals, birds, reptiles, amphibians, freshwater fishes, crustaceans, and butterflies), subsequently published in seven volumes. In addition, summary volume (Vol: 01) has been translated into Bangla for reaching out its wider users. More than 300 national and international experts have contributed under the seven Red List Assessor Groups (RAGs) headed by respective Lead Assessors and Chief National Technical Expert to ensure that the updates are based on the best scientific information available.

A well-trained Red List project unit equipped with GIS support and all kinds of latest information technologies was established in IUCN Bangladesh to ensure the highest quality of assessment following the latest Red List categories and criteria guideline. For this purpose, more than 160 assessors have been trained on global standard Red List assessment guideline engaging international certified Red List trainers. A National Red List Database in the form of an online platform has been developed and made live for public dissemination on the <www.iucnredlistbd.org>. Data and information have been preserved for future use both electronically in offline database as well as hard copies for each individual species bearing unique Species Identification Number (SID). A National Red List Committee has been formed under the Ministry of Environment and Forests (MoEF) to ensure coordination among different agencies during the assessment process as well as for mainstreaming the findings into conservation policies. Series of dissemination workshops at national and regional levels were organized to share the preliminary assessment result to its wider stakeholders and ensure their participation in this highly scientific assessment process.

I would like to commend the assessors for their contributions to the assessment and for their commitment towards making this publication a reality. All the assessments have gone through a multistage review process engaging relevant experts and technical reviewers. The tireless efforts of the reviewers in making these books up to the global standard are gratefully acknowledged. Without their assistance this nationally important set of documents would not have been of the quality that it is now.

I also like to take this opportunity to express my sincere appreciation to all the members of 'Updating Species Red List of Bangladesh' project and all concerned people of publication work for publishing this manuscript. I would also express my gratitude to the Ministry of Environment and Forests (MoEF), Chief Conservator of Forests (CCF) and other Bangladesh Forest Department officials for their vigorous support and collaboration. I hope this publication will help the relevant agencies in taking appropriate conservation actions toward managing wildlife of Bangladesh.

Md. Akbar Hossain

Project Director

Strengthening Regional Cooperation for Wildlife Protection (SRCWP) Project

&

Deputy Chief Conservator of Forests

Bangladesh Forest Department

MESSAGE

The Government of Bangladesh is committed to take all measures prerequisite for a sustainable future. In effort, the Government takes myriad programmes and initiatives with the support of different consortia. Bangladesh has recently achieved unprecedented successes in the environmental sector. It was no surprise that Her Excellency Prime Minister Sheikh Hasina was awarded '2015 Champion of the Earth' by the United Nations. Updated the 'Red List of Bangladesh' bears yet another signature of the goodwill and devotion rendered by the Government of Bangladesh. The publication sets another milestone in biodiversity conservation of the country.

The overwhelming evidence on the loss of biodiversity all over the world showcases that we, as a nation, must act to conserve biodiversity. Ministry of Environment and Forests has been playing a pivotal role in biodiversity conservation of Bangladesh through Bangladesh Forest Department, and other national and international organizations. This publication is one among many upshots envisioned by Bangladesh Forest Department through the 'Strengthening Regional Cooperation for Wildlife Protection (SRCWP)' Project. I would like to thank The World Bank for providing the financial support, and appreciate the effort of IUCN Bangladesh Country Office in implementing the project.

I am sanguine that the updated 'Red List of Bangladesh' will concurrently help the Government of Bangladesh towards achieving the Aichi Biodiversity Targets, the Sustainable Development Goals (SDGs) and the Vision 2021.

Finally, I wish that the 'Red List of Bangladesh' would go a long way in protecting the biodiversity of the country.

Anwar Hossain Manju, MP

Minister

Ministry of Environment and Forests

Government of the People's Republic of Bangladesh

MESSAGE

I am very happy to know that *Red List of Bangladesh* - a set of visionary publications covering the status, extinction risks and possible conservation options for major biodiversity of Bangladesh has been thoroughly updated by the Bangladesh Forest Department with technical support from IUCN Bangladesh.

Bangladesh is bestowed with enviable natural resources. To save the bewildering inventory, Bangladesh is always strong-willed and committed to a number of Multilateral Environmental Agreements including the Convention on Biological Diversity (CBD). So as in harmony, the Government of Bangladesh has recently looked forward to engaging a globally recognized, powerful, most comprehensive conservation tool, i.e. IUCN Red List of Threatened Species™ to update and assess the current biodiversity status. This has resulted in the rigorous effort entitling 'Updating Species Red List of Bangladesh' under the 'Strengthening Regional Cooperation for Wildlife Protection (SRCWP)' Project initiative funded by The World Bank.

'Red List of Bangladesh' is a massive milestone in the conservation history of the country. I expect that these scientific publications will provide new information; will strengthen and update existing knowledge inventory. Everybody from government/non-government officials to scholars, researchers, students and enthusiasts - should make expansive usages of these books as the most updated biodiversity database available in the country.

I strongly hope that these works of multitude potentials will help the coordination and promotion of national efforts in effective policy making for ensuring appropriate and continual biodiversity management practices envisioned by the Government of Bangladesh.

Abdullah Al Islam Jakob, MP

Deputy Minister

Ministry of Environment and Forests

Government of the People's Republic of Bangladesh

MESSAGE

Biodiversity, the incredible variety of life on Earth that sustains us, is in peril. Species are becoming threatened at the most expeditious rate ever recorded. Over the past few decades it has become the issue of global concern for its rapid reduction worldwide. Bangladesh is no exception in this regard. Though the country is exceptionally endowed with a vast variety of flora and fauna, it is unfortunate that in recent decades the biodiversity of the country is under pressure due to incrementing population and over-exploitation of natural resources.

Today, many species of Bangladesh have reached a dreadful genetic loss. Unfortunately, detailed information and consummate inventories of such species often do not exist. The Government of Bangladesh is acutely conscious of this, and has in fact been preparing to face this challenge for several years now. Bangladesh has made a tremendous progress in terms of taking development initiatives towards conservation and sustainable use of the threatened species. However, Bangladesh Forest Department in collaboration with IUCN Bangladesh and with financial assistance from The World Bank, the project 'Strengthening Regional Cooperation for Wildlife Protection' under which the subproject 'Updating Species Red List of Bangladesh' has successfully updated the threat status of wildlife of the country. I would like to express my appreciation to all the experts involved in this noble initiative.

I am very proud to note that 1619 fauna species have been assessed over the two and half year period and subsequently published in seven volumes entitled the 'Red List of Bangladesh'. I strongly believe, this set of achievements is one of the pioneer encyclopedic compilations in Bangladesh that can provide its users with updated information of different species. I hope these books will have impact on the government's policy and planning towards achieving the targets set by the different national and global commitments, as well as taking measures to protect these threatened species.

Dr. Kamal Uddin Ahmed

Secretary

Ministry of Environment and Forests

Government of the People's Republic of Bangladesh

MESSAGE

Globally, biodiversity forms the foundation of the vast array of ecosystem services that critically contribute to human well being. The diversity of the Earth's natural assets are made up of many millions of distinct biological species of plants and animals on land, in water, in atmosphere - linking humans and environment into an interdependent ecosystem which makes the Earth unique and beautiful. But, it's really unfortunate that biodiversity worldwide is disappearing faster than ever and already has declined by more than a quarter in the last 35 years in terms of number of species. It is thus indispensable to gather knowledge scientifically of existing species, their habitats, threats, etc. for undertaking pragmatic protection and conservation measures.

In this context Bangladesh Forest Department together with IUCN Bangladesh has accomplished 'Updating Species Red List of Bangladesh', as a sub-project of the 'Strengthening Regional Cooperation for Wildlife Protection (SRCWP)' Project of Bangladesh Forest Department following the most comprehensive 'IUCN Red List of Threatened Species™' approach. As a revolutionary outcome of the project, the books entitling the 'Red List of Bangladesh' aim to provide updated information and data of 1619 animal species under seven groups in total throughout the country. This national asset will undoubtedly serve the researcher and academicians as a scientific information hub for further research and the policy makers to occupy the gap of subsisting laws and policies to catalyze appropriate conservation action. By knowing the threatened species from this Red List, further, we can bring out incipient projects where these are exactly demanded and with the opportune execution of this undertaking, we can create a safe ground as a measure of conservation. In this whole process the Red List will be a great avail.

In addition, the status and trends of the threatened species of Bangladesh portrayed in these books have the impetus for taking up the stronger efforts towards the legislation of wildlife trafficking and trading of the country. Being a bio-rich country, Bangladesh has to adopt adequate measures to halt further degradation of our precious biological resources. We hope that these books could be a consequential material in the congruous execution of the objectives of numerous biodiversity conventions and treaties, like CBD, RAMSAR, and CITES.

I sincerely acknowledge the Government of the People's Republic of Bangladesh to initiate such a milestone project and The World Bank for providing financial support. I am also very thankful to those scientists, researchers, academicians and professionals involved with the project from the very beginning for their unwearied endeavour which finally make this most fruitful.

Md. Yunus Ali

Chief Conservator of Forests
Bangladesh Forest Department
Government of the People's Republic of Bangladesh

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The IUCN Red List of Threatened Species™ has been worldly recognized and used as the most comprehensive source for the conservation status of plant and animal species since 1964. IUCN Bangladesh first assessed the conservation status of species from Bangladesh in 2000. Fifteen years later, IUCN Bangladesh has updated the previous Red List implementing ‘Updating Species Red List of Bangladesh’ project. The final outcome of the project, the ‘Red List of Bangladesh’, is the fruit of a concerted effort from numerous individuals and bodies - all deserve a special note of thanks.

Our sincere gratitude to Dr. Kamal Uddin Ahmed, Secretary, Ministry of Environment and Forests, Government of the People’s Republic of Bangladesh and Chair, National Committee for Updating Species Red List of Bangladesh for his endless effort along with the officials involved from the ministry in making this initiative a success.

We extend a heartfelt thanks to Mr. Md. Yunus Ali, Chief Conservator of Forests, Bangladesh Forest Department and the officials nominated to implement ‘Strengthening Regional Cooperation for Wildlife Protection (SRCWP)’ Project, especially Mr. Md. Akbar Hossain, Project Director and all other staff of the SRCWP project. Our special thanks to Mr. Ashit Ranjan Paul, Conservator of Forests, Wildlife Circle and Dr. Tapan Kumar Dey, former Conservator of Forests, Wildlife Management and Nature Conservation Division, Bangladesh Forest Department for their endless endeavor in all extent of the project. We would like to acknowledge The World Bank for financing SRCWP project. In addition, our sincere gratitude goes to Bangladesh Forest Department to entrust IUCN Bangladesh Country Office with the responsibility of ‘Updating Species Red List of Bangladesh’.

We humbly acknowledge Dr. Mohammad Ali Reza Khan, Chief National Technical Expert, Updating Species Red List of Bangladesh for his expertise, knowledge and technical support used in these publications. Besides, seven Lead Assessors for seven animal groups namely, Professor Dr. Mohammed Mostafa Feeroz for mammals, Mr. Enam Ul Haque for birds, Professor Dr. Md. Farid Ahsan for reptiles, Professor Dr. M. Monirul H. Khan for amphibians, Professor Dr. Mohammad Sahadat Ali for freshwater fishes, Professor Dr. Mostafa Ali Reza Hossain for crustaceans, and Professor Dr. Md. Monwar Hossain for butterflies deserve special thanks. Besides, all other assessors, national and international photographers, contributors and geo-spatial analysts have indebted us with their time, effort and support. We sincerely thank all technical reviewers and editors, as well.

The Red List Project Unit of IUCN Bangladesh Country Office, along with other officials, merit special thanks for their relentless effort to finish this project successfully. Special thanks to Mr. Craig Hilton Taylor and Ms. Caroline Pollock from IUCN Red List Unit, Cambridge, UK and colleagues from IUCN Asia Regional Office for their technical support and guidance.

We humbly acknowledge Vice Chancellors from University of Dhaka, University of Chittagong, Bangladesh Agricultural University, Khulna University and Shahjalal University of Science and Technology for allowing us to use their premises for dissemination workshops. We also extend our gratitude to the officials from Department of Fisheries, Bangladesh Fisheries Research Institute, Bangladesh Forest Research Institute, Bangladesh National Herbarium, national universities, colleges, research institutes and other partners. Participants of all meetings and workshops, advisors, data contributors and personnel from electronic and print media deserve our appreciation for their support.

We hope that the publications entitled 'Red List of Bangladesh' would greatly accelerate conservation, management and policy interventions for the threatened species of Bangladesh.

Ishtiaq Uddin Ahmad

Country Representative

IUCN Bangladesh Country Office

LIST OF ABBREVIATIONS

AOO	Area of Occupancy
BoB	Bay of Bengal
BRAC	Bangladesh Rural Advancement Committee
BWDB	Bangladesh Water Development Board
CARITAS	Congregations Around Richmond Involved to Assure Shelter
CBD	Convention on Biological Diversity
CBFM	Community Based Fisheries Management
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CKMWS	Char Kukri Mukri Wildlife Sanctuary
CNRS	Center for Natural Resource Studies
cm	Centimeter
CMS	Convention on the Conservation of Migratory Species of Wild Animals
CPUE	Catch per unit effort
CR	Critically Endangered
DD	Data Deficient
DoF	Department of Fisheries
ECR	Environment Conservation Rules
EEZ	Exclusive Economic Zone
EN	Endangered
EOO	Extent of Occurrence
ESCAP	Economic and Social Commission for Asia and the Pacific
EW	Extinct in the Wild
EX	Extinct
FA	Forest Act
FAP	Flood Action Plan
GBM	Ganges-Brahmaputra-Meghna
GDP	Gross domestic product
GIS	Geographical Information System
GO	Governmental Organization
GoB	Government of Bangladesh
H	High
ha	Hectare
HNP	Himchhari National Park
HYV	High yielding varieties
INGO	International Non-governmental Organization
IUCN	International Union for Conservation of Nature

kg	Kilogram
km	Kilometer
km ²	Square kilometer
L	Low
LC	Least Concern
Litt	Literature
M	Moderate
m	Metre
m ³	Cubic metre
MAF	Million acre-feet
mm	Millimetre
MoEF	Ministry of Environment and Forests
MoFA	Ministry of Foreign Affairs
MSY	Maximum Sustainable Yield
mt	Metric ton
mya	Million years ago
NA	Not Applicable
NBSAP	National Biodiversity Strategic and Action Plan
NCS	National Conservation Strategy
NC-USR	National Committee for Updating Species Red List of Bangladesh
NE	Not Evaluated
NGOs	Non-governmental Organizations
NT	Near Threatened
NWMP	National Water Management Plan
PAs	Protected Areas
Pers. Comm.	Personal Communication
PL	Post Larva
ppt	Parts Per Thousand
PROSHIKA	Proshikkhan Shikkha Karmo
RAG	Red List Assessor Group
RE	Regionally Extinct
RLA	Red List Authority
SID	Species Identification Number
S/MFBZ	Sundarban/Mangrove Forest Biogeographic Zone
SRCWP	Strengthening Regional Cooperation for Wildlife Protection Project
UNESCO	United Nations Educational, Scientific and Cultural Organization
US	United States
USD	United States Dollar
VH	Very High
VL	Very Low
VU	Vulnerable
WRI	World Resources Institute
WS	Wildlife Sanctuary
Yrs	Years

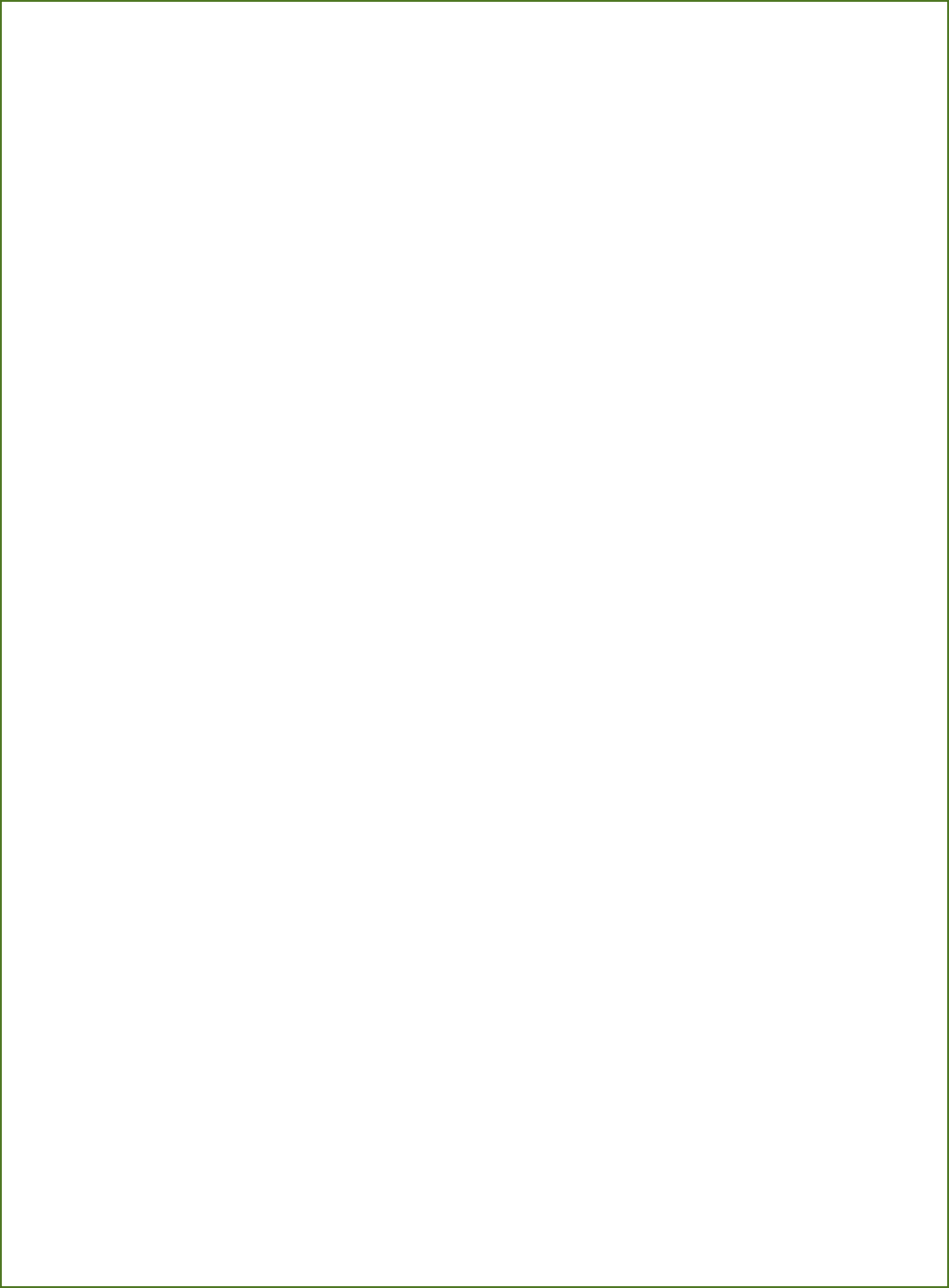
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INTRODUCTION





1. INTRODUCTION

1.1. Crustaceans

Crustaceans form a large group of Arthropods, usually treated under Subphylum - Crustacea that includes important animals such as prawn, shrimp, crab, lobster, crayfish, king crab, zooplankton, krill and barnacle. The 67,000 described species range in size from 0.1 mm to massive 3.8 m weighing as heavy as 20 kg (Zhi-Qiang 2011). Despite their diversity of form, crustaceans are united by the special larval form known as the Nauplius. The term shell means an outer covering which we call in Bangla as “Kholosh” and shellfish is aquatic organism which is covered by dead chitinous or calcareous exoskeleton that is found in two major Phyla - Mollusca and Arthropoda (Subphylum – Crustacea). Like other animals in the Phylum Arthropoda, Crustaceans have an exoskeleton, which they must moult to grow in their life stages. Most crustaceans are free-living aquatic animals some are terrestrial (e.g. woodlice). Many crustaceans are parasitic (fish lice, tongue worms, etc.) and some are sessile (barnacles).

The group has an extensive fossil record, reaching back to the Cambrian and includes living fossils such as tadpole shrimp, *Triops cancriformis*, which existed apparently unchanged since the Triassic period (Zierold *et al.* 2007).

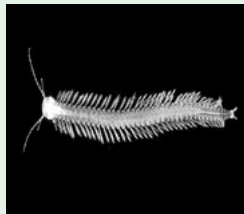
More than 10 million tons of crustaceans are produced by fishery or farming for human consumption, the majority of it being shrimp, prawns and crabs. Krill and copepods are not as extensively fished but have long been the animals with the greatest biomass in the planet earth and form a vital part of the aquatic food chain.

The exact relationships of the Crustacea to other taxa are not completely settled as of April 2012. Studies based on morphology led to the Pancrustacea hypothesis (Zrzavý and Štys 1997) in which Crustacea and Hexapoda (insects and allies) are sister groups. More recent studies using DNA sequences suggest that Crustacea is paraphyletic, with the hexapods nested within a larger Pancrustacea clade (Jerome *et al.* 2010). Although the classification of crustaceans has been quite variable, the system used by Martin and Davis largely supersedes earlier works (Björn *et al.* 2011). Six Classes and 13 Sub-Classes under the Subphylum Crustacea are presently recognized (Figure 1).

Crustacean bodies usually are made up of head, thorax and abdomen, although the segments composing these tagmata differ from Class to Class. All Crustaceans have two pairs of antennae, a pair of mandibles, a pair of compound eyes (usually on stalks) and two pair of maxillae on the head, followed by a pair of appendages on each body segment. Appendages are branched (biramous) and although this character is modified in many species, adults always have at least some biramous appendages. Crustaceans respire via gills. Like other arthropods, all have a hard but flexible exoskeleton.

Throughout the world, the shrimps, lobsters and Portunid crabs are caught extensively for human consumption. The majority of zooplanktons are cladocerans and copepods that are the major consumers of phytoplankton. Benthic crustaceans are often both scavengers and consumers of plant life found on lake

Kingdom: Animalia
 Phylum: Arthropoda
 Subphylum: Crustacea
 Class: Branchiopoda
 Sub-Class: Phyllopoda
 Sub-Class: Sarsostraca
 Class: Remipedia
 Class: Cephalocarida
 Class: Maxillopoda
 Sub-Class: Thecostraca
 Sub-Class: Tantulocarida
 Sub-Class: Branchiura
 Sub-Class: Pentastomida
 Sub-Class: Mystacocarida
 Sub-Class: Copepoda
 Class: Ostracoda
 Sub-Class: Myodocopa
 Sub-Class: Podocopa
 Class: Malacostraca
 Sub-Class: Phyllocarida
 Sub-Class: Hoplocarida
 Sub-Class: Eumalacostraca



Remipedia
Speleonectes
tanumekes



Cephalocarida
Carcinoscorpius
rotundicauda



Maxillopoda
Chthamalus
stellatus



Ostracoda
Cylindroleberididae



Branchiopoda
Moina
brachiata



Malacostraca
Perisesarma
bidens

Figure 1. Representative groups of Crustaceans under six Classes
 © Wikipedia & Crustacean Red List Group

bottoms and the seabed. Collectively, these crustaceans serve as a key food source for fishes, especially during juvenile stages. Aside from their role in food webs, the larger species of crustaceans are of considerable economic importance. They are also increasingly important in aquaculture. In fact, the value of crustaceans produced in aquaculture is already as great as that of fish.

Shrimp and prawn farming is an age-old practice in brackish, saltwater and fresh water of the coastal areas of Khulna, Satkhira, Bagherhat and Cox's Bazar Districts of Bangladesh. The main cultivated species are *Penaeus monodon* (Tiger shrimp - Bagda Chingri) and *Macrobrachium rosenbergii* (Giant freshwater prawn - Galda Chingri). Other farmed shrimps are - *Metapenaeus monoceros* (Brown shrimp - Horina), *P. indicus* (Indian white shrimp - Chaka), *P. semisulcatus* (Green tiger shrimp) and *P. merguensis* (Banana shrimp). Total aquaculture shrimp production increased from 14,773 tons in 1986 to 1,28,313 tons in 2014. Area under shrimp farming has increased from a mere 52,000 ha

in 1983 to a massive 276,495 ha in 2014. The country earned about \$ 535 million in 2013-14 through the export of 47,635 ton frozen shrimp to the overseas. The earning was \$ 568 million in 2014-15. The contribution of farmed shrimp to total shrimp production and export has been increasing over the last 15 years at a rate of about 20% per year.

Bangladesh supports a wide range of crustaceans, including shrimps, prawns, crab, lobsters, zooplanktons, etc. For updating the crustacean red list, a total of 141 crustaceans were enlisted including prawn, shrimp, crab, lobster, king crab, zooplankton, barnacles, etc.

1.2. Key Species

Giant freshwater prawn

Macrobrachium rosenbergii is known as the giant freshwater prawn (locally known as *Galda Chingri*) is a species of freshwater prawn native to the Indo-Pacific region, northern Australia and Southeast Asia. This species along with a number of other *Macrobrachium* species have long been



Macrobrachium rosenbergii

© Mostafa A R Hossain

domesticated, farmed globally and is commercially important for its value as a food source. While *M. rosenbergii* is a freshwater species, the larval stage of the animal depends on brackish water. Once the individual prawn has grown beyond the planktonic stage and becomes a juvenile, it comes to live entirely in fresh water rivers and later the catadromous species migrate to the brackish water for spawning. The prawn is a delicacy in Bangladesh, heavily caught from rivers and other freshwater bodies and farmed in about 62,000 ha area as singly in monoculture or integrated with rice and a number of finfishes. In the culture system, per unit area production is, however, very low- only 450 - 550 kg ha⁻¹ as there is very little or no management, except stoking of post larvae (PL) and occasional feeding.

Marine tiger shrimp

Penaeus monodon, commonly known as the marine tiger shrimp (Locally known as *Bagda Chingri*) is a marine crustacean that is farmed all over the globe as a valued food item. Its natural distribution is the Indo-Pacific, ranging from the eastern coast of Africa and the Arabian Peninsula, as far as Southeast Asia, the Pacific Ocean and northern Australia. However, the species is considered as an invasive species in some parts of the world including the northern waters of the Gulf of Mexico and the Atlantic Ocean off the southern US. It is the most



Penaeus monodon

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widely cultured shrimp species in the world including Asia - Bangladesh, China, India, Indonesia, Thailand and Vietnam and Latin America - Brazil, Ecuador and Mexico. In 2010, Greenpeace included *P. monodon* to its seafood red list – “a list of aquatic animals that are commonly sold in supermarkets around the world but have a very high risk of being sourced from unsustainable fisheries”. The reasons given by Greenpeace were “destruction of huge areas of mangroves in several countries, over-fishing or indiscriminate catching of wild post larvae to supply farms and significant human rights abuses”. Bangladesh is farming *P. monodon* in about 276,000 ha area using mainly three modes - traditional (production 300 kg ha⁻¹), improved extensive (600 - 700 kg ha⁻¹) and semi-intensive (4,000 – 5,000 kg ha⁻¹). In 2013-14, the country produced nearly 224,000 metric tons of shrimp from culture (57%) and capture (43%), exported 50,333 metric tons to overseas and earned 440 million \$USD.

Mud crab

The crab, *Scylla serrata* known as mud crab or mangrove crab is widely distributed in the Indo-Pacific region. It is available in brackish coastal waters and estuaries. The



Scylla serrata

© Mostafa A R Hossain

crab is highly cannibalistic in nature. When they undergo moulting, other hard-shelled ones attack the moulting crabs and devour them. The female can grow up to 3.5 kg with a shell width of up to 24 cm and give birth to a million larvae. In Bangladesh, coastal farmers have been practicing mud crab (locally known as *kakra* or *kanra*) fattening mainly in

earthen ponds and bamboo cages. The mud crab fishery has been found to be potentially profitable and feasible fisheries venture in and around the Sundarbans region. The domestic production of crab is being increased as coastal marginal poor people are greatly involved in crab fishery. Presently, a significant amount of crabs has been produced from fattening in ponds and cages. Bangladesh has been exporting mud crab – *Scylla serrata* since 1977-78 mainly to China, Thailand, Hong Kong and Singapore, which now stands about 10,000 MT annually. The farming is rapidly extending among coastal poor including women of low-caste Hindu *Jaladas* (fishers) and ethnic tribal communities. From the socio-cultural point of view, low caste Hindu community and a number of indigenous tribes – Rakhaing, Mog, Marma have been catching and consuming mud crab from the time immemorial as a tasty dish.

Lobster

Lobsters are crustacean decapod with a hard protective exoskeleton. Like most arthropods, lobsters must moult to grow. Highly prized as seafood, lobsters are commercially important and are often one of the most profitable commodities in coastal areas they occur. Lobsters are found in all oceans and



Panulirus polyphagus

© Md. Enamul Hoq

thrive on rocky, sandy, or muddy bottoms from the shoreline to beyond the edge of the continental shelf. They generally live singly in crevices or in burrows under rocks. They are omnivores and typically eat live prey like fish, molluscs, other crustaceans, worms and some plant life. They scavenge if necessary

and are known to resort to cannibalism in captivity. In Bangladesh, six species of lobsters are documented scalloped spiny lobster - *Panulirus homarus*, ornate spiny lobster - *P. ornatus*, mud spiny lobster - *P. polyphagus* and painted spiny lobster - *P. versicolor* under Palinuridae and two - flathead lobster - *Thenus orientalis* and scaled slipper lobster - *Scyllarus depressus* under Scyllaridae.

Horseshoe crab

Horseshoe crabs are marine arthropods of the Family Limulidae under Order Xiphosura, generally live in and around shallow ocean waters on soft sandy and muddy bottoms. As they first appeared in the planet about 450 million years ago (mya), horseshoe crabs are considered as living fossils. Though the horseshoe crabs



Carcinoscorpius rotundicauda

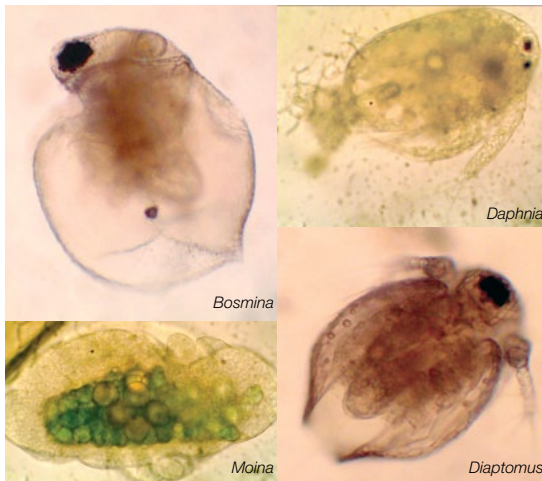
© Md. Enamul Hoq

resemble crustaceans but belong to a separate subphylum, Chelicerata, Limulidae is the only recent family of the Xiphosura and contain all four living species of horseshoe crabs. The mangrove horseshoe crab *Carcinoscorpius rotundicauda* are found in Southeast Asia - Bangladesh, India, Indonesia, Malaysia, Philippines, Singapore and Thailand. In Bangladesh, the species is distributed in the eastern and western coast of Bangladesh. Horseshoe crabs normally swim upside down, inclined at about 30° to the horizontal and moving at about 10-15 cm/s. Horseshoe crabs have two primary compound eyes and seven secondary simple eyes. Two of the secondary eyes are on the underside. The mangrove horseshoe crab is benthopelagic, spending most of its life close to or at the bottom of a body of their brackish, swampy water habitat. They are more often found on the ocean floor

searching for worms and molluscs, which are their main food. They may also feed on crustaceans and even small fish. Lacking jaws, it grinds up the food with bristles on its legs and places it in its mouth using its chelicerae.

Zooplankton

Zooplankton are heterotrophic usually microscopic but some are larger and visible with the naked eye. Although zooplanktons are primarily transported by ambient water currents, many have locomotion, used to



© Md. Moniruzzaman

avoid predators (as in diel vertical migration) or to increase prey encounter rate. Important zooplankton groups include foraminiferans, radiolarians, dinoflagellates, jellyfish, copepods, ostracods, isopods, amphipods, mysids, krill, arrow worms, pteropods etc. Zooplankton feed on bacterioplankton, phytoplankton, other zooplankton, detritus and nektonic organisms. Accordingly, zooplanktons are primarily found in surface waters where food resources (phytoplankton or other zooplankton) are abundant. Through their consumption and processing of phytoplankton and other food sources, zooplankton play a major role in aquatic food webs, as a resource for consumers on higher trophic levels and eaten by most of the fish particular as first and larval feed. From the group of crustacean zooplankton, about 20 important zooplanktons available in Bangladesh water are listed for biodiversity assessment in the present Red List.

Barnacle

A barnacle is a type of arthropod under the infra class Cirripedia of the subphylum Crustacea and accordingly barnacles are closely related to crabs and lobsters. Though they are frequently confused for a mollusk because of its hard outer shell. Barnacles are exclusively marine and thrive in shallow and tidal waters in the intertidal zone.

They are sessile and suspension feeders. To date, around 1,220 barnacles have been described globally. Barnacles are of economic consequence, as they often attach themselves to synthetic structures. Particularly in the case of ships, they are classified as fouling organisms. Barnacles are also commonly seen on crabs, whales, rocks and on the shells of sea turtles. Though some are parasitic, most barnacle species are harmless, because they are filter feeders and do not interfere with an animal's normal diet and do not harm that animal that they live on in any way. Many species of barnacle are so harmless that in fact, an animal that is covered in them, may not even notice. In Bangladesh territory, several species of barnacles are available,



(top) *Tetraclita squamosa*, (Bottom) *Chthamalus challengerii* © M. Ali Azadi

however, due to the paucity of useful data and information, only four have been included in the current Red List.

Mantis shrimp

Mantis shrimp also known as stomatopod, is a type of marine crustacean under the order Stomatopoda. There are more than 450 species of mantis shrimp so far have been described worldwide. Varieties range from shades of brown to vivid colours and are among the most important predators in many shallow, tropical and sub-tropical marine habitats. Despite being common, they are poorly understood as many species spend most of their life tucked away in burrows and holes.



Oratosquilla perpersa

© Md. Enamul Hoq

Mantis shrimps have the powerful claws that they use to attack and kill prey by spearing, stunning, or dismemberment. The aggressive and typically solitary sea creatures spend most of their time hiding in rock formations or burrowing intricate passageways in the sea bed. They rarely exit their homes except to feed and relocate and can be diurnal, nocturnal, or crepuscular, depending on the species. The mantis shrimp has one of the most elaborate visual systems ever discovered. Compared to the three types of colour receptive cones that humans possess in their eyes, the eyes of a mantis shrimp carry 16 types of colour receptive cones. In the current Red List two mantis shrimps from Bangladesh are included.

Fiddler crab

A fiddler crab, also known as a calling crab, may be any of nearly 100 species of semi-terrestrial marine crabs which make up the genus *Uca* under the family Ocypodidae. Found in mangroves, in salt marshes and on sandy or muddy beaches of the Indo-



(left) *Uca rosea* © Muntasir Akash,
(right) *Uca annulipes* © IUCN/ Mohammed Noman

Pacific, West Africa, the Western Atlantic and the Eastern Pacific, fiddler crabs are easily recognized by their distinctively asymmetric claws. Fiddler crabs are observed along sea beaches and brackish inter-tidal mud flats, lagoons and swamps. The crabs are most well known for their sexually dimorphic claws; the males' major claw is much larger than the minor claw while the females' claws are both the same size. Like all crabs, fiddler crabs shed their shells as they grow. If they have lost legs or claws during their present growth cycle, a new one will be present when they moult. If the large fiddle claw is lost, males will develop one on the opposite side after their next moult. In the beaches of the Bangladesh coast in the south, a number of colourful and diversified fiddler crabs have been reported.

Red clawed crab

Red claw crabs are naturally found in mangrove swamps in Asia including Bangladesh. In general, they have flattened shell with protruding eye stalks and two equal



(top) *Episesarma versicolor*, (bottom) *Perisesarma bidens*
© IUCN/ Mohammed Noman

sized claws. Red claw crabs can survive in freshwater, however, they mainly thrive in mangroves of brackish water. The crabs are omnivores and feed on small shrimp, fish fry, brine shrimp, bloodworms and vegetation and nearly anything else they can get their claws on due to their opportunistic behavior. With a foraging habit, the crab uses fine hairs on their legs and claws to taste the sand and spend a large amount of time scavenging the substrate for food. They like to make small tight fitting caves under rocks and logs and quickly scurry to safety when threatened. They also spend a few days in their burrows during moulting. The Red claw crab is a good climber. In Bangladesh, several species of these crabs are documented.

Hermit crab

Hermit crabs are decapod crustaceans. Most of the 1100 species possess an asymmetrical abdomen which is concealed in an empty gastropod shell carried around by a hermit crab. Most species have long, spirally curved abdomens, which are soft, unlike the hard, calcified abdomens seen in related crustaceans. The vulnerable abdomen is protected from predators by a salvaged empty seashell carried by the hermit crab, into which its whole body can retract. Most frequently, hermit crabs use the shells of sea snails. The tip of the hermit crab's abdomen is adapted to clasp strongly onto the columella of the snail shell. Most species are aquatic and live in varying depths of salt water, from shallow reefs and shorelines to deep sea bottoms. Most hermit crabs are nocturnal. As the hermit



Coenobita variabilis

© Aal Maruf Russell

crab grows in size, it must find a larger shell. They vary widely in color, from red to brown to purple, with stripes, dots and other patterns. Hermit crabs are omnivores and scavengers. They eat worms, plankton and organic debris.

Box crab

Calappa is a genus of crabs known commonly as box crabs. The name box crab comes from their distinctly bulky carapace. Their rounded, dome-shaped carapace is usually broader than it is long with wing-like side extensions that conceal the four pairs of walking legs. The broad, flat claws are held like shields, protecting the crab's front surface and completing the box-like appearance. The claws' shielding posture gives rise to another common name for this group, "shame-faced crabs". They spend much of their time buried in the sand with only their sensory structures and respiratory opening at the surface. When foraging for food they walk freely over the bottom on sharply-pointed walking legs. Box crabs are efficient burrowers and dig into the sand rapidly. The armored body seems well designed for defense



Cilbanarius longitarsus

© Mostafa A R Hossain



Atergatis integerrimus

© Mohammad Ali Reza Khan

as well as digging. Some of the most common prey includes auger snails that also live in sandy-bottomed areas. Box crabs, like most crustaceans, are probably most active at night but can sometimes be seen during the day.

Nymph snapping shrimp

Alpheidae is a family of Caridean snapping shrimp characterized by having asymmetrical claws, the larger of which is typically capable of producing a loud snapping sound. The family is diverse and worldwide in distribution, consisting of about 1100 species. The two most prominent genera are *Alpheus* and *Synalpheus*. Most snapping shrimp dig burrows and are common inhabitants of coral reefs, submerged seagrass flats and oyster reefs. This family has a great number of genera



Alpheus euphrosyne

© Balaram Mahalder

and species but only few of these are of commercial importance and even then their value is quite negligible. When in colonies, the snapping shrimp can interfere with sonar and underwater communication. The shrimp are a major source of noise in the ocean. The snapping shrimp grows to 3–5 cm long. It is distinctive for its remarkably disproportionate large claw, larger than half the shrimp's body. The claw can be on either arm of the body and unlike most shrimp claws do not have typical pincers at the end. Rather, it has a pistol-like feature made of two parts. A joint allows the "hammer" part to move backward into a right-angled position. The snapping is used for hunting (hence the alternative name pistol shrimp), as well as for communication. The nymph snapping shrimp, *Alpheus euphrosyne* is reported from the water near the Dublar Char, St. Martin's and other offshore islands in Bangladesh.

1.3. Key Habitats Utilized by the Crustacean in Bangladesh

Crustaceans have long been playing a major role in the diet and nutrition of Bangladeshi people and a key contributor in country's export earnings. There are 64 prawns and shrimp, nearly 50 crabs, 6 lobsters, a number of mantis shrimps, king crabs, hermit crabs and an array of crustacean zooplanktons reported in Bangladesh. Despite the fact that the sector faced a number of bottlenecks on its way to becoming an area to reckon, the commercial, closed water culture of marine tiger shrimp and giant freshwater prawn has been intensified and total production has increased exponentially over the years. Though culture of shrimp and prawn is a big issue in Bangladesh and has long been discussed and researched on, the species and habitat of crustacean biodiversity received very little or no attention over the years. Habitat used by the crustaceans in Bangladesh is composed of highly diverse and unique aquatic systems that includes - floodplains, large and small rivers, *beels*, *haors* and *baors* manmade and natural ponds, ditches, borrowpits, lakes and enclosures, coastal waterbodies and the vast Bay of Bengal.

The Floodplain

Floodplains are relatively low lying land area, bordering rivers and seasonally over-flooded by overspill from the main river channel. There are two distinct flooding patterns, one resulting in flow direction from the floodplains to the rivers (from flush flood due to local rainfall) and the other from the rivers to the floodplains (rivers overspill due to the heavy rainfall in the upstream). The ecodynamics of floodplain are influenced by the river water incursion and retreat and the timing and intensity of monsoon. There are great differences in the area flooded from year to year and this greatly influences the population dynamics of many fish and shellfish species.

The seasonally flooded area is highly productive for growth of crustacean, fish and other aquatic animals. During the dry season, as pasture land, the floodplain receives nutrients in the form of animal dropping

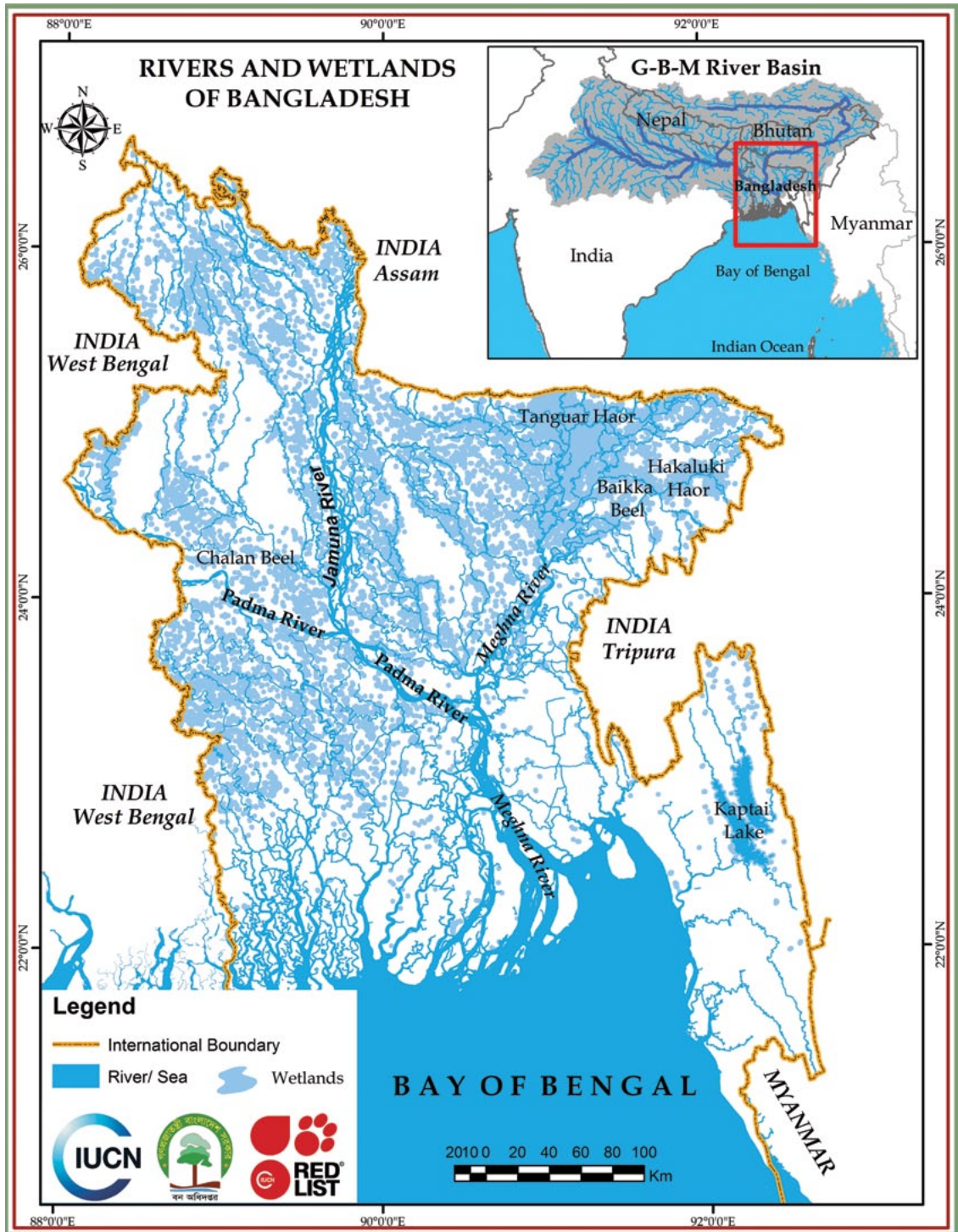


Figure 2. Rivers and Wetlands of Bangladesh

and rotting vegetation. As the monsoon approaches the accumulated nutrients rapidly enters into the solution combined with river-borne silt, led to an upsurge of productivity resulting in rapid growth of plants and other forms of aquatic biota. This productivity phase offers an ideal condition for feeding and breeding of many riverine fishes and other aquatic animals which migrate to floodplain with the rising waters. Floodplains inundated during monsoons are nutrient rich and play a significant role as nurseries for larvae and juvenile of many crustaceans including prawns, crabs and many micro crustaceans (zooplankton). The floodplains are very rich in both floral and faunal diversity and harbour a large number of crustaceans, finfish, molluscs, amphibians, reptiles and a large number of aquatic vegetation. A huge number of crustacean species migrate from rivers and *beels* to floodplains for breeding and grazing and are harvested by the rural professional and amateur fishers. Since 1970, the annual flooding of approximately 2-3 million ha of floodplain has been either

controlled or prevented altogether by means of sluice gates or pumps positioned along earth embankments or levees (ESCAP 1998). This reduction in area is believed to be one of the major reasons for declining floodplain crustaceans and fishes in Bangladesh (FAP 17 1994). Over-exploitation of inland fish and crustacean stocks has also been reported (Graaf *et al.* 2001).

The Rivers

Bangladesh is a riverine country. It has numerous rivers and their tributaries (Figure 2). The Ganges, the Brahmaputra and the Meghna rivers are the mightiest. These three rivers along with their innumerable tributaries form one of the richest habitats of aquatic organisms in the Indian Subcontinent. In addition to these three rivers, other major ones are the Karnaphully, Matamuhuri, Halda and Sangu rivers in the southern Chittagong sub-region. The major rivers are the Surma, Kushiara, Kangsha and Someshwari in the north-east region and the Tista, Korotoa, Atrai, Bangalee and Mahananda in the north-



Figure 3. a. Fishers going to fish the finfish, shrimps, prawns and crabs in the lower stretch of the Mighty Meghna

© Md. Nahiduzzaman



Figure 3 b. Once mighty hillstream, the transboundary Soemshwari now dying

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west. The total length of the network of the rivers in Bangladesh covers more than 24,000 km with a catchment area of 1,031,563 ha. Annual flooding of the rivers inundates about 70% of the total land surface. The total annual discharge passing through the rivers system into the Bay of Bengal reaches up to 1,174 billion m³ (Banglapedia 2004). During rainy season, the rivers carry high amount of silt which makes the water turbid. In winter, the water level decreases and heavier silts settle down thereby making the water clear. The depth of the coastal rivers usually ranges from 2 m to 5.5 m and reaches up to 36.5 m near the Bay of Bengal. Salinity of about 1 ppt extends nearly 56 km upstream in these rivers. The rivers of Bangladesh have a great importance in respect to fisheries and other hydrological and navigation benefits. Rivers are the migratory routes of shellfishes and finfishes with adjacent floodplains and vice-versa and are heavily fished all over Bangladesh (Figure 3.a.b.). Many of the riverine crustaceans particularly giant freshwater prawn - galda, *Macrobrachium rosenbergii* migrate upstream (floodplain) in order to spawn in nutrient rich coastal water, where they feed on plankton. At the end of monsoon, the adult and young shellfishes escape to the rivers and most likely to the adjacent deeper *beels* to avoid harsh condition of the floodplain during dry season.

The Beels

The *beel* is a Bengali term used for relatively large surface, static waterbody that accumulates surface run-off water through an internal drainage channel (Banglapedia 2004). This type of shallow, seasonal waterbody is common in low-lying floodplain areas throughout Bangladesh. The total area of *beels* in Bangladesh was estimated to be 114,161 ha, occupying 27.0% of the inland freshwater (Ahmed *et al.* 2007). The number of *beels* in the north-eastern part of the country recorded was 6,034 having an area of 69,870 ha (Bernaesek *et al.* 1992). The most famous *beel* in the country known as the Chalan *beel* is located in the north-west. This is of course a 'dying' *beel* being silted up and most part of it transformed into cultivable land and used for human settlements. The other major *beels* in this region are Hilna, Kosba, Uthrail, Manda, Sobna and *Beel* Mansur. In central region, Arial *beel* and Balai *beel* now lost their importance as natural fish habitat. Other important *beels* in this region are Chanda, Boro, Mollar and Tungipara *beels*. There are many *beels* in the south and south west and the notable are Chapaigachi, Garalia, Panjiapatra, Chenchuri and Dakatia *beels*.

Beels are generally rich in crustacean resources in Bangladesh and provide

considerable production of the country. *Beel* fishery of Bangladesh is being deteriorating day by day due to over fishing, uncontrolled use of chemical fertilizer and insecticide, destruction of natural breeding and feeding grounds, harvesting of wild brood fishes and for many other causes (Azher *et al.* 2007).

Chalan Beel

Chalan *beel* is the largest and most important watershed in the North Central Bangladesh. It comprises of a series of depressions interconnected by numerous channels to form more or less one continuous sheet of water during monsoon covering an area of about 375 km². The watershed serves about five million people predominantly through fisheries and agriculture. Though far from its past glory, Chalan *beel* is still an abode of large variety of ichthyofauna with a huge importance in local economy and people's livelihood. During dry season, water area decreases down to 52-78 km² and looks like a cluster of small *beels*. Besides being a giant junction of a number of water ways, the *beel* also served a springboard where many rivers flowed to meet finally with the river Padma and the Brahmaputra (Iqbal 2006).

Most of the rivers and *beels* inside Chalan *beel* are at the risk of partial or total degradation due to manifold reasons like agricultural encroachment, siltation along

with other anthropogenic activities (Figure 4). Human interferences including development interventions such as construction of roads, dams and embankments and human settlement adversely affected the ecosystem and habitat of shellfish population in *beel* by obstructing the migratory routes. Therefore, breeding of migratory species has been interrupted which affected recruitment of fish in the *beel*. Over-exploitation and drying up of the waterbodies are perhaps responsible for overall low abundance of many aquatic species including a number of important shellfishes.

The Haors

The *haors* are back swamps or bowl-shaped depressions between the natural levees of rivers, or in some cases, much larger areas incorporating a succession of these depressions (Figure 5). The Bengali word *haor* basically derived from the word *sagor* (literally meaning sea) and dialectically *sagor - saior - haor* has been evolved (Khan *et al.* 1990). In terms of morphology and hydrology, a *haor* can be subdivided into three major areas, the piedmont area around the hill foot, the floodplains and the deeply flooded area (Hossain and Nishat 1989). The *haors* vary in size from as little as a few hectares to thousands of hectares. The *haors* flood to a depth of as much as 6 m during the rainy season and in many cases two or more neighboring *haors* unite to form a much larger water body. Greater part of the north east region of Bangladesh is characterized by the presence of numerous large, deeply flooded depressions, known as *haors*, between the rivers. There are altogether 411 *haors* (47 major and large sized) comprising an area of about 8,000 km² dispersed in the north-eastern Greater Districts of Sylhet and Mymensingh. The *haor* basin is bounded by the several Indian states - hills of Meghalaya on the north, hills of Tripura and Mizoram on the south and the highlands of Manipur on the east. The two big rivers in the region – Surma and Kushiya in association with several smaller hill-streams - Manu, Khowai, Jadhukata, Piyangang, Mogra and Mahadao form the dense network and supply the massive water to the *haors*. The rivers are primarily responsible for providing inputs - rainwater and sediment load to the *haors*. The



Figure 4. A dry river inside Chalan *beel* during winter season
© Md. Nahiduzzaman



Figure 5. A partial view of Mithamoin Haor during monsoon season

© Mostafa A R Hossain

haors remain flooded for about 7 to 8 months. During the rainy season, the *haors* look just like vast inland sea and the villages within appear as islands.

In greater Sylhet, the most prominent *haors* are Shaneer, Hail, Hakaluki, Dekhar, Maker, Chayer, Tanguar and Kawa Dighi. In consideration of the environmental importance and heritage, the government has decided to save the Tanguar *haor* (9,500 ha) by symbolizing it as an internationally critical environment area under the Environmental Protection Law of 1995 and registered as a wetland of international importance (Ramsar site, site no. 1031, declared in 10.07.2000) under Ramsar Convention. The *haors* are considered to be the most productive wetland resources of Bangladesh. The basin supports a large variety of aquatic biodiversity including a number of crustaceans and works as natural reservoir. In past, most of the *haor* basin was covered with swamp forests and reed lands had a characteristic feature of flooded forests made the entire *haor* a suitable habitat for many prawn, crabs and zooplanktons. The *haors* also act as important breeding and spawning ground of many shellfishes.

The Baors

In the southwest region of Bangladesh, there are a number of meandering rivers that changed their courses, part of the old course got silted up and cut-off from the main course. As a result, horse-shoe shaped oxbow lakes known as *baor* was created. A *baor* apparently looks like a lake but unlike lakes, it remains connected with original river through channels during monsoon. This way, the *baors* annually receive fresh supply of riverine water carrying fry, fingerlings and adult fishes and other aquatic animals. *Baors* are very important wetlands of Bangladesh and support a wide range of aquatic flora and fauna.

There are more than 87 *baors* in Bangladesh covering an area of 5,488 ha (DoF 2008). Most of the larger *baors* are in southwestern Jessore region. The *baors* range in size from about 25 ha to a maximum of 500 ha (Bhuiyan and Choudhury 1997). The important *baors* of the country are Arial, Bahadurpur Baluhar, Bookbhara, Harina, Habullah, Rustampur, Ichhamati, Jaleshwar, Jogini Bhagini, Joydia, Kannadah, Kathgara, Khedapara, Marjat, Pathanpara, Rampur, Sagarkhali, Sirisdia and

Sonadia. The *baors* are an abode of small and large indigenous crustacean species. Many prawn, shrimp and crab species breed and thrive in the *baors* throughout the year. The waterbodies are shelters and breeding grounds for a gamut of aquatic invertebrates. All the *baors* are now under a heavy fishing pressure. The construction of dams and other flood control structures have reduced the natural recruitment and contributed to stock depletion. The total catch area in the *baors* is about 5,488 ha and the annual production is about 2,460 mt (DoF 2008).

The Ponds and Ditches

There are more than 1.3 million ponds having a water surface of 0.3 million ha in the country (DoF 2008). Though in the past, ponds were constructed for washing, bathing and irrigation purposes, recently, ponds are being constructed absolutely for fish culture. There are two types of ponds– the perennial ponds - contain water round the year and the seasonal ponds - contain water at a certain times or seasons (mainly in monsoon). Semi intensive and intensive pond aquaculture, in recent years are proved to be detrimental for shellfish biodiversity as the culture technologies

advise farmers to remove all small indigenous shellfishes and fishes from the ponds before releasing the fry of target fish. Farmers often use piscicide, insecticide and weedicide to clean their ponds. This practice has been going on in Bangladesh since the carp polyculture being introduced in late 1970s. As a result, though harvests from fish culture are rapidly increasing, the catches of small indigenous shellfishes and fishes are declining at an alarming rate.

The Kaptai Lake

There are only three true natural lakes in the country. Rainkhyongkine Lake and Bogakine Lake are located in the Chittagong Hill Tracts and a Lake named *Ashuhila beel* at the northern end of the Madhupur Tract. The largest man-made lake in South Asia is Kaptai lake of 68,800 ha (surface area – 58,300 ha) (Figure 6). The H-shaped Kaptai lake, the only major reservoir in Bangladesh was created from the construction of dam across the river Karnaphully near Kaptai town in 1961. It has drowned almost the whole of the middle-Karnaphully valley and the lower reaches of the Chengji, Kasalong and Rinkhyong rivers. Shoreline and the basin of Kaptai Lake are



Figure 6. Partial view of Kaptai Lake

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Figure 7. Partial view of the Sundarban Mangrove Forest. The mangrove root and floor where many coastal shrimps and crabs thrive on
© IUCN Crustacean Red List Expedition Team

very irregular. The volume of the lake is 524,700 m³ with a mean depth of 9 m. Though the lake was created primarily to generate hydroelectric power, it substantially contributes to the national economy through freshwater fish production, navigation, flood control and agriculture. The lake is confined within the hill districts of Rangamati and embraces sub-districts of Rangamati Sadar, Kaptai, Nannerchar, Langadu, Baghaichhari, Barkal, Juraichhari and Belaichhari.

In 2012-13, fish and shellfish production in Kaptai lake was 9,017 mt with an average of 131kg ha⁻¹. As the local poor people remove the protective vegetation around the lake, the rocks are exposed to the monsoon rains and thus erode easily. This results in regular landslides and the loose rocks is washed down the slopes and carried by rivers into the lake. By early 1990s, in its 30-year of existence, it had already lost 25% of its volume due to siltation.

Mangrove Forest

The Bangladesh coast supports 441,455 ha of mangroves, including the world's largest single tract of natural mangroves, i.e. the Sundarbans (Hasan *et al.* 2013) (Figure 7). Mangroves play an essential role in maintaining a healthy coastal environment by providing protection for a myriad of juvenile aquatic species, functioning as a habitat for a variety of terrestrial fauna, improving coastal protection and acting as a processor of nutrients that sustains many complex food chains (Kovacs 1999).

Fishing, shrimping and crabbing in the mangrove forest and adjacent area are important sources of income and livelihoods in the islands of the Ganges basin. The structure of the mangrove trees enables them to withstand wave impacts and help to dissipate wave action from severe storms (Hossain 2013).

The protective benefits of mangrove forest against tropical cyclone and wave action are important and well-recognized (Barbier *et al.* 2008). The importance of mangroves as nursery grounds for the larval and juvenile stages of fin fishes, shrimps, crabs and cockles has been highlighted by many researchers around the world (Lee 2004).

Bay of Bengal and Coastal Water bodies

The Bay of Bengal (BoB) is the north-eastern extension of the Indian Ocean which lies north of 6°N latitude and west of about 95°E longitude, the Andaman Sea and Andaman Islands excluded (IHO 1953). Being an extension, BoB shares many oceanic characteristics of the Indian Ocean including cyclones and southwest monsoon and has active connections to the Andaman Sea, Malacca Strait, Palk Strait, etc.

Bay of Bengal receives one of the greatest freshwater discharges of all large river systems, 1.6 trillion cubic meters per year (Madhupratap *et al.* 2003), making it one of the freshest seas in the world, salinity ranging from almost 'zero' near the coast to below 30 ppt compared with 35 ppt and above for the world average which means - fresher and lighter water sitting on top of saltier and heavier water makes it harder for the nutrient rich deeper water to turn over and reach the surface in a process called 'upwelling', which is necessary for enhancing primary biological productivity at sea and the BoB, being located in the tropics, means it is low in productivity but rich in biodiversity. At the end of the final settlement of maritime border disputes with neighboring states Myanmar and India in 2012 and 2014 respectively, Bangladesh has received entitlement to 1,18,813 km² in the BoB comprising her territorial sea and Exclusive Economic Zone (EEZ) (MoFA, 2014). Taking into account major river inlets and estuaries, which are together very much a part of the marine ecosystem, the total marine waters of Bangladesh stands at 1,21,110 km² of which coastal waters and the shallow shelf sea constitute about 20% and 35% respectively, the rest (45%) lying in deeper waters (Chowdhury 2014).

Over the last 10-15 years, live giant mud crab (*Scylla serrata*) has been exported to East Asian countries. Less than 20% exported live crab come from fattening by the marginal farmers of Satkhira, Bagherhat and Cox's Bazar coasts and rest comes from the offshore island mangrove forests in the Bay of Bengal. The offshore islands in the Bay of Bengal are enriched with a number of globally significant ghost crabs, hermit crabs, king crabs, shrimp, lobsters and other important crustaceans (Figure 8).



Figure 8.a. View of an offshore island, The Sonar Char with red crab herd. **b.** the mangrove trees in the Sonar Char. **c.** inset – a crab in the forest floor
 © IUCN Crustacean Red List Expedition Team

1.4. Red Listing of Crustaceans in Bangladesh

IUCN Bangladesh started “Updating Species Red List of Bangladesh” by revisiting and reviewing first Red List published in 2000. In the first Red List, crustaceans were not included. Therefore, for the crustaceans this is not an update but the first ever initiative to evaluate and determine their ecological status, population size and trend, national abundance,

home range, habitat condition, threats and ongoing conservation initiatives. In this first initiative, the macro-crustaceans– shrimps, prawns, crabs, lobsters and a few micro crustacean zooplanktons inhabiting Bangladesh territory – freshwater and brackish waters are included. Under the initiative, there were three exploration surveys in several geo locations of Bangladesh (Figure 9). In these surveys the exploration team visited south-west coast of

several segments of the Sundarban Mangrove Forest. The selected locations included fish markets and landing centers in Khulna city, Munshiganj, Shyamnagar, Paikgachha and intertidal zones inside Sundarban, coastal river – the Halda, famous as the only remaining water body for carp breeding ground, hill stream - the famous river Sangu and several waterfalls of the hill district Bandarban and intertidal zone and small waterfalls of Cox’s Bazar and the offshore mangrove islands – Char Fashion, Char Kachhopia, Char Kukri Mukri, Dhal Char, Sonar Char under Bhola and Patuakhali greater districts. The explorer team also visited major landing centers and fish/ shellfish markets of the survey districts.

During the 1st exploration, a “horsehair worm”, locally called Sutanoli Shap (local name meaning a creature resembling the thin and long body of a popularly known snake, the

Common Vine Snake *Ahaetulla nasuta*) was caught from a freshwater fountain - Shailla Propat at Bandarban on 12th November 2014. The team identified it as a species of *Chordodes*, under the Phylum Nematomorpha that is recorded for the first time from Bangladesh geographical area.

During the 2nd exploration, a number of blue-stripped hermit crab, *Clibanarius longitarsus* (Family- Diogenidae; Order - Decapoda) was observed in the rooted web of mangrove and mangrove forest floor in Kalagachhia, Sundarban, Satkhira Forest Range on 18 April 2015. The team identified it as one of the Crustacean Decapod under the Phylum Arthropoda for the first time recorded from Bangladesh geographical area. Based on the findings, two papers were published in Bangladesh Journal of Zoology (Naser *et al.* 2015; Hossain *et al.* 2015).

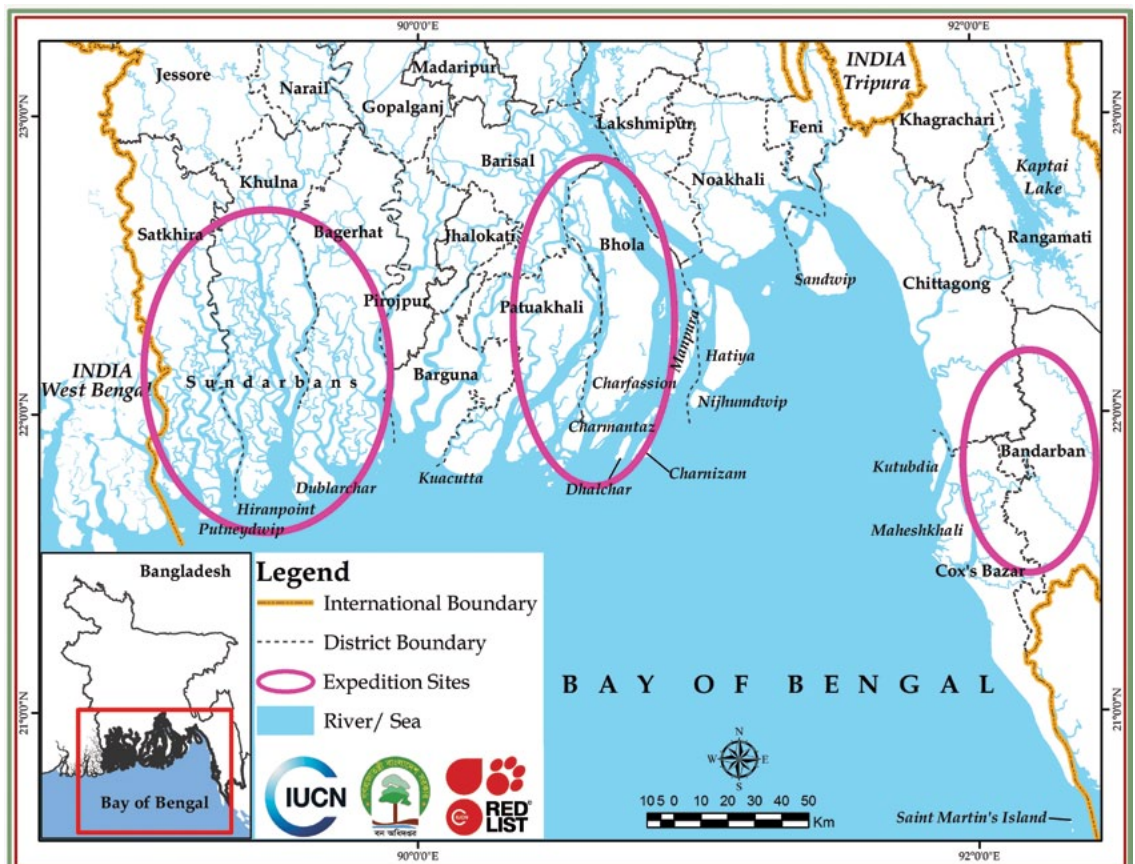


Figure 9. Geo-locations expedited by the Crustacean Red List Team

In addition, more than 60 crustaceans – prawns, shrimps, crabs, lobsters – many are extremely rare have been observed during the three expeditions.

1.5. Crustacean Hotspots

In Bangladesh, crustaceans are available in the floodplains, large and small rivers, *beels*, haors and baors, manmade and natural ponds, ditches, borrow pits, lakes and enclosures, coastal waterbodies and in the vast Bay of Bengal. There are several hotspots where the diversity and numbers are really high. A few of these hotspots are described here.

1.5.1. Hill Streams

The Sangu River

The River Sangu (also known by the name Sangpo or Shankha) sources from North Arakan Hills of Myanmar. It follows a northerly circuitous course in the hill tracts and then enters Bangladesh near Remarki, Thanchi Upazila, Bandarban, from the east. It flows north through Thanchi, Rowangchhari and Bandarban Sadar Upazilas of Bandarban District and then flows west through Satkania and Banskhali Upazilas in Chittagong District and flows into the Bay of Bengal near Chittagong. The length of the river is 270 km and 173 km is within Bangladesh territory. The river, though, is a shallow river but it turns violent during monsoon season and develops rapid currents. The river, to date, is rich in biodiversity and several rare fish and shellfish are found in this river.

The Halda River

Halda River is a river in south-eastern hill districts of Bangladesh. The river originates from Halda Chara in Ramgarh Upazila under Khagrachari District and flows through Upazilas of Fatikchhari, Hathazari, Raozan and Chittagong Chandgaon Thana before falling into the Karnaphuli River. The 98 km long river has a very turbulent tributary. The Halda reaches up 6.4 m in depth and 30 9.1 m in deepest point. The Halda River is famous for breeding Indian major carp and is the only carp breeding ground of Bangladesh, perhaps in South Asia. Along with being one of the major sources of brood and larvae of giant freshwater

prawn, a rich assemblage of shellfish and fresh water dolphins are seen in this river. A number of rare prawns of the Genera - *Macrobrachium* and *Penaeus* like - *Dauma Icha*, *Chotka Icha*, *Ghoda Icha*, *Paitta Icha*, *Lotia Icha*, *Lolia Icha*, a number of crabs - *Cimta Kakra*, *Guli corol* are found in this river.

1.5.2. Offshore Coastal Islands

St. Martin's Island

St. Martin's's Island is the southernmost island of Bangladesh under the upazilla of Teknaf, District Cox's Bazar with Teknaf's hill on one side and Myanmar on the other side. The only coral-ringed island of the country is also known as *Narikel Jinjira* (Coconut Island) or the *Saint Martin's Island*. It was once fringed with dense groves of coconut palms. The sea beach of the island is surrounded by corals and clear blue water of the sea. Panoramic beauty and the feelings of being amidst pristine marine life attract many of the visitors to stay there overnight to enjoy sensing and sighting the beauties of the island. Rocky beach formed by thousands of years old rocks some of which originated from the corals, when most are formed of shale and others materials similar to the rock formation in the nearby Akyab Hill Ranges of the mainland of Myanmar are the home of wildlife including gamut fish, shellfish, turtle, lizard and unique habitat for migratory birds. Some of the rarest shrimps, crabs, barnacles and lobsters are available in the island.

Char Kukri Mukri

Char Kukri Mukri is a Wildlife Sanctuary (CKMWS) of the Upazilla of Char Fashion under the island district Bhola which is separated by Meghna stream from the Bhola mainland. It is well-known as *Dwip Kanya* too. CKMWS was established through gazette notification of December, 19, 1981. The island falls under the Sundarban/Mangrove Forest Biogeographic Zone (S/MFBZ). The offshore island is famous for its natural beauty of mangrove forestry, wildlife and sea. Spotted Deer and Rhesus Macaque have been introduced to the island chain. The local people keep a lot of buffalo, cattle and goats. Among other species of wild animals and birds and invertebrates dominate the island. The surrounding water of the island

is rich with a number of commercial and non-commercial, rare fish, shellfish and molluscan species.

Dhal Char

Dhal Char is a neighboring island of Char Kukri Mukri, located at the south of Bhola District in Bangladesh. It is a Union under Manpura Thana of Bhola. Dhal Char is surrounded by the river Meghna. The east part of the island is decreasing day by day because of river bank erosion. The island is marked as one of the most vulnerable areas for natural disaster. The shoreline and the surrounding water of the island are enriched with a number of important and rare fish, shrimps, crabs, molluscs and other aquatic animals.

Sonar Char

Sonar char or Sonakata is located in Barguna district, 32 km from the shoreline of the Bay of Bengal to the south Amatali. The beach is way through the deep forests of unsurpassed natural beauty. The island is famous for the red crab. In a quiet morning or late afternoon until the evening, the herd composed of thousands red crab can be seen to cover the entire island floor with a never-seen beauty and pleasantness. There are plenty of shrimps, crabs, lobsters and fiddler crabs, ghost crabs, etc. in the beach and neighboring waters. In the mangrove of the island are found Rhesus Macaque, Wild Boar, Fishing Cat, Jungle fowl, monitor lizard and snakes.

1.5.3. The Mangrove

The Sundarbans

Sundarbans is the largest contiguous mangrove forest of the world comprising southern-western Bangladesh and a small part of Indian state of West Bengal. It is the largest single block of tidal halophytic mangrove forest in the world is a UNESCO World Heritage Site that covers approximately 10,000 km² most of which is in Bangladesh (68%) with the remainder in India. There are three notified Wildlife Sanctuaries inside the mangrove forest – Sundarban East WS, Sundarban West WS and Sundarban South WS. The Sundarbans is covered with mangrove forest, tidal creeks, muddy banks, tidal flats and sandy shores.

Commonly identifiable vegetation that grow in the dense mangrove forests at the Sundarbans are salt water mixed forest, mangrove scrub, brackish water mixed forest, littoral forest, wet forest and wet alluvial grass forests. Crustaceans available in the Sundarbans include crabs – (fiddler, ghost, reef, box, tree, red, horseshoe, mud, mangrove, moon, hermit etc.), prawn and shrimps (snapping, tiger, Indian white, giant freshwater, kuruma, banana, jinga, yellow, speckled, etc.) and a number of lobsters.

1.5.4. National Park

Himchhari National Park and the falls

Located just south of Cox's Bazar in Bangladesh, the Himchhari National Park (HNP) is comprised of a number of small falls, lush tropical rain forest, grasslands and trees. The water falls cascades down toward the sandy, sun-drenched beach. The flora and fauna in the area is abundant and naturalists never fail to be delighted at the extensive wildlife. Himchhari is really a hotspot for aquatic wildlife - the colorful crabs, diversified shrimps and lobsters found in the falls and the nearby sea beach has never been fully explored.

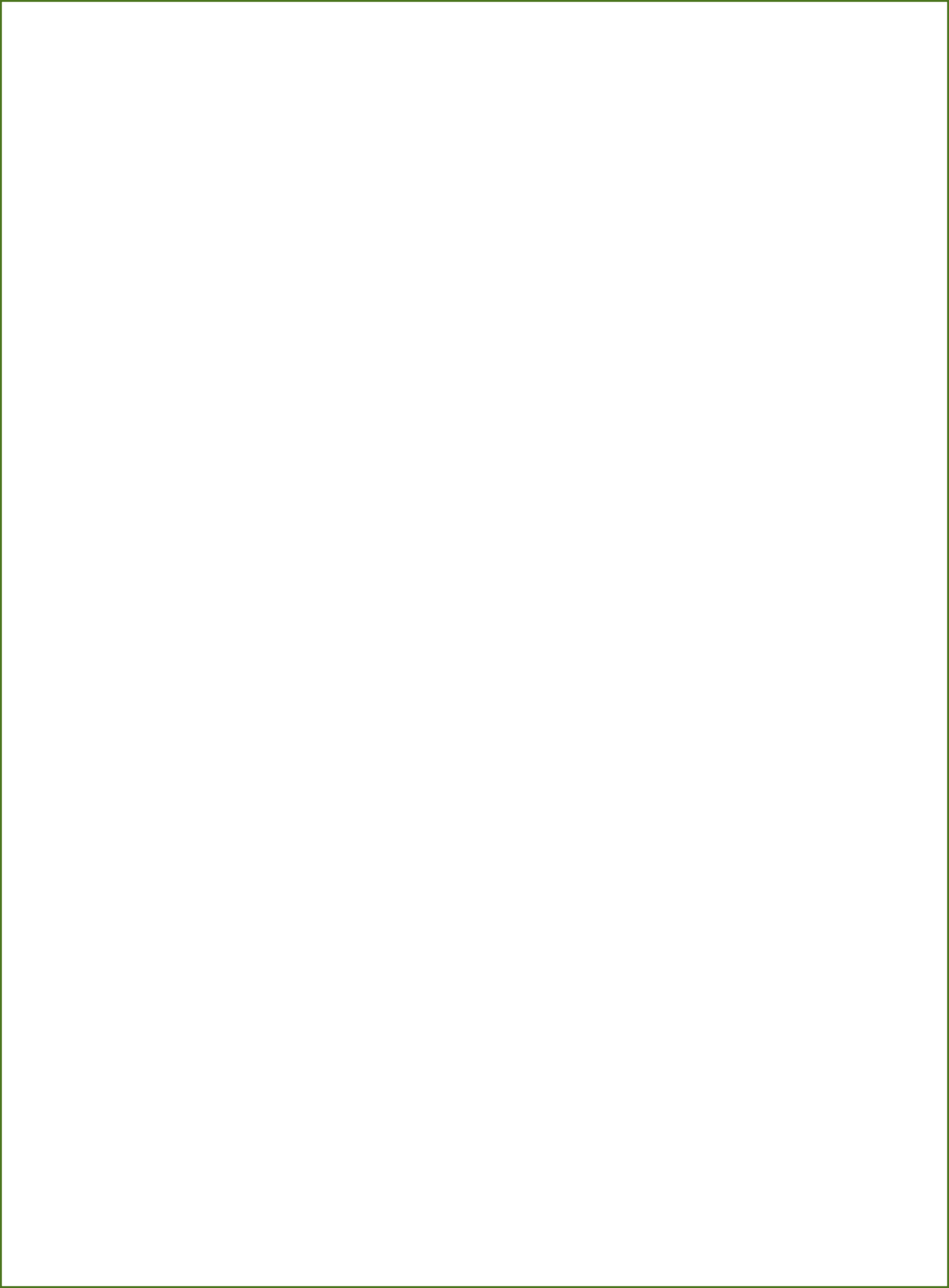


Gear used to catch crab inside Mangrove forest

© IUCN/ Mohammed Noman

UPDATING SPECIES RED LIST OF BANGLADESH: ASSESSMENT METHODOLOGY





2. UPDATING SPECIES RED LIST OF BANGLADESH: ASSESSMENT METHODOLOGY

The IUCN Red List of Threatened Species™ is widely recognized as the most comprehensive, objective global approach for evaluating the conservation status of plant and animal species and their links to livelihoods.

Particularly, its scientifically rigorous approach to determine risks of extinction has become a world standard. Looking back at 50 years since its implementation in 1964, the IUCN Red List of Threatened Species™ has been successfully established as a powerful conservation tool and has achieved its goal of providing information and analyses on the status, trends and threats to species. The assessment process of "Updating Species Red List of Bangladesh" took more than two and a half years. During the process, members of the IUCN Global Species Programme, Red List Unit based in Cambridge-UK, the IUCN Species Survival Commission, technical team members of the Red List unit of IUCN Bangladesh, Bangladesh Forest Department officials, officials from the Department of Fisheries, faculties of the universities, scientists of the research institutes, as well as conservationists, species specialists, nature lovers, and partner organizations and other governmental agencies worked closely to ensure most accurate information and analysis of the most current status, trends and threats to wildlife species in Bangladesh. For this purpose, an inter-ministerial committee named 'National Committee for Updating Species Red List of Bangladesh (NC-USR)' was formed to ensure highest level collaboration among involved organizations, and sustainability of the outcome of the assessment at the policy level. Seven Red List Assessor Groups (RAGs) at project level led by renown species specialists have been formed to coordinate

the assessment process engaging species specialists/assessors. In this course of assessment of the species strategies adapted to reduce knowledge gaps, influence national conservation, and build national capacity. A total of 1619 species status under seven groups of wildlife (Mammals, Reptiles, Amphibians, Birds, Freshwater Fishes, Crustaceans and Butterflies) have been assessed. Moreover, 160 assessors were trained on the latest Red List assessment guideline (ver 3.1) engaging certified Red List trainers from IUCN Red List Unit, Cambridge, UK. A vigorous work process was applied to finish the assessment within the given timeframe ensuring highest quality, using latest species information and sharing through wider dissemination among expert groups. An interactive website (www.iucnredlistbd.org) was also published to ensure participation of all stakeholders in the assessment process as well as collecting public opinion on the draft assessment.

Assessment was started in July, 2014 and stopped in November, 2015. While the project duration was from December, 2013 to June, 2016.

2.1. Red List Assessment: from Field to Publication

Categorization of Red List and criteria set up following latest Red List guideline, managing and storing the documents supporting the category and criteria of a species, and a map of species' distribution are the components of the Red List assessment. Before an assessment can be published on the Red List, it goes through a rigorous approval process (Figure 10), which is one of the reasons that

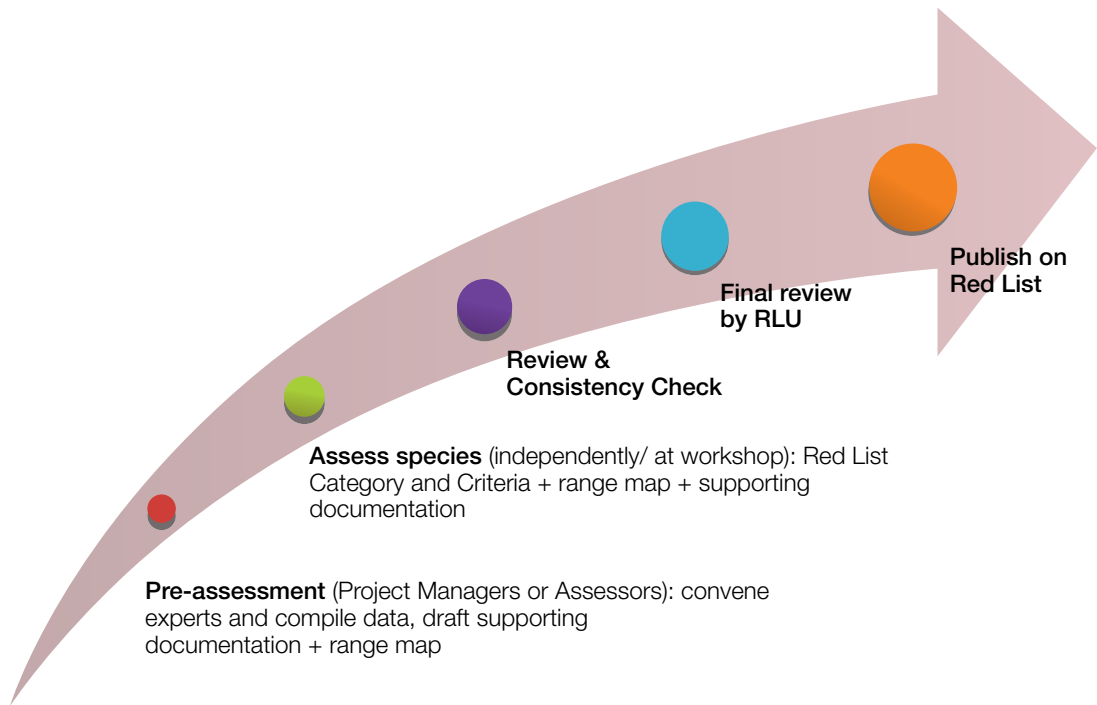


Figure 10: Red List assessment process

Red List is respected and valued for informing conservation decisions. This process differed slightly depending on the assessors expertise but the basic process involved was:

First, an individual assessor was assigned to assess one species or multiple species based on his/her expertise. The convening experts assessed and compiled the data for all the species that were assigned through the project. This information often comes from published books, articles, reports and research findings but information from the grey literatures (unpublished material) and scientists' years of experience and observations were also used. Experts then examined the data and assigned a Red List category, and criteria for the species (often working with trained project staff). They also demarcated a range map and provided supporting documentations that justify the assessment. These draft assessments were then reviewed in three steps to check and make sure that all relevant data have included in the assessment, and the assessment was done using the most appropriate available data. Lead assessors of the respective animal groups were the first reviewers to

provide comments and suggestions on the initial assessment by the assessors. The assessors then had to share their findings in a monthly review workshop participated by different wildlife specialists incorporating lead assessors comments. If there were any problems, it was returned to the assessors with an explanation of further improvement. After the further improvement, if everything was in place, the reviewers approve the assessment and let the assessor know it was ready for submission. The assessor then checked all the assessments for consistency, proofreading and formatting before submitting to the IUCN Red List Project Unit. The Red List Project Unit scanned the assessments for obvious errors and quality was checked through engaging independent technical reviewers. If there were problems, the assessment further returned to the assessor for improvement. Lead assessors worked with the technical reviewers following a multi-step review process before sending the assessments for final approval by the Chief National Technical Expert (CNTE). Lead assessors meeting was held at regular interval to monitor progress of the assessment. The project also organized field investigations

using sophisticated wildlife survey techniques and tools to collect missing data and information that required to make conclusive assessment of some important species. In addition, surveys were carried out in different museums owned by academic and research institutions of the country to know more about the historic information of different species. Besides, to enhance exposure of the draft assessment, number of dissemination events were organized in collaboration of different organizations throughout the project period in all over the country. Finally, if the assessments were accepted by CNTE, they were properly documented. All the assessment sheets including species photographs, distribution maps and others necessary documents were also recorded in a computer based database- finally published on the Red List website (www.iucnredlistbd.org) and Red List books containing seven volumes.

2.2 Red List Assessment Tools

All the assessors were trained on latest assessment guideline and its application at the local level context. Two major tools applied during the assessment process were respectively 'IUCN Red List Categories and Criteria Version 3.1 (IUCN 2012)' and 'Guidelines for Application of IUCN Red List Criteria at Regional and National Levels Version 4.0 (IUCN 2012)' prepared by IUCN Species Survival Commission (SSC). Both of these tools are available online (www.iucnredlist.org and www.iucnredlistbd.org).

A species assessment sheet designed purposefully by the IUCN Red List Unit was used for assessing an individual taxon. A sample copy of the Assessment Sheet is provided in Appendix ii.

A wide range of information were required for the assessment of species. These included, among others, species taxonomic classification and synonyms, assessment history- global and regional, global and local distribution ranges, population size and trend, Extent of Occurrence (EOO), Area of Occupancy (AOO), habitat preferences and habits, major threats and conservation measures in practice, etc.

GIS software was used to estimate AOO and EOO to assess the distribution of the taxon plotting on a 2 Km² grid map of Bangladesh. The geographic range of present assessment included all the areas within the political boundary of Bangladesh, including coastal territorial waters. It included rivers, flat lands areas, reservoirs, hilly areas, mangrove areas and the estuaries. However, the assessment process sometimes considered the distributional ranges of some species in its catchment areas beyond political boundary, particularly estimating EOO, in that case, a dot line was used on the map for that particular species.

All species have given a Species Identification Number i.e. SID for the first time in



Participants of the 5th training workshop on the Red List Assessment Process

Bangladesh, which will ensure a systematic national web-based Red List database that was synchronized with the published books. Species photographs and distribution maps were also aligned with this SID. Moreover, the assessment process also generated a large number of data sheets containing relevant and required information at various stages of the assessment.

In addition, large quantity of resource materials related to training, workshops, published and grey literatures on species were collected. All these information and materials have been electronically preserved in a purposefully designed database system in the IUCN Bangladesh Country Office to be managed in the future by the IUCN itself or the Bangladesh Forest Department. This would be used as a depository of resources and could be inspected and used by stakeholders.

Red List guideline has a number of technical terms used in different section of this document to represent assessment categories and criteria of a taxon, which are described in an Appendix iii.

2.3. Red List Assessment Guideline (version 3.1)¹

2.3.1. Taxonomic Range of the Assessment
Regional Red List assessment initiatives are always encouraged to follow the same taxonomic checklists as used by the global IUCN Red List (See www.iucnredlist.org/technical-documents/information-source-and-quality). For other taxonomic groups or any deviations from the recommended list, the differences and the taxonomic authorities followed should be specified. The categorization process should be applied only to wild populations inside their natural range and to populations resulting from benign introductions (IUCN 1998, 2001, 2012). All taxa should be assessed for which

an important part of any stage of their life cycle (breeding, wintering, migrating, etc.) takes place in the region. The regional Red List should include all globally red listed taxa present within the region, including those that are Not Applicable (NA) at the regional level, and the global category should not be displayed alongside the regional assessment. Taxa formerly considered Regionally Extinct (RE) that naturally re-colonize the region may be assessed after the first year of reproduction. Re-introduced, formerly RE taxa may be assessed as soon as at least a part of the population successfully reproduces without direct support and the offspring are shown to be viable. Assessors are encouraged to assess visiting taxa. Vagrant taxa should NOT be assessed.

Following the conditional issues of regional assessment in the case of this particular group as described earlier, taxonomic checklists of the global IUCN Red List was used after selection of all 141 crustacean species, which included documented crustaceans of the country - prawn, shrimp, crab, lobster, horseshoe crab, barnacle and zooplankton.

2.3.2. Categories

The information in this section is intended to direct and facilitate the use and interpretation of the categories, criteria and subcriteria.

The criteria applied to any taxonomic unit at or below species level. In this document, the term 'taxon' is used for convenience, and may represent species or lower taxonomic levels. The Red List Categories considered were as set out in IUCN Red List Categories and Criteria Version 3.1. There are nine categories at global scale, ranging from Least Concern (LC) for species that are not threatened, to the Extinct (EX) Category, for species that have disappeared from the earth. The IUCN Red List Categories and Criteria were designed for global taxon assessments. Hence, applying them to subsets of global data, especially at

1. This is a shorter form of general guideline summarizing most common rules appropriate for Bangladesh, adapted from 'IUCN Red List categories and criteria version 3.1 (IUCN 2012)' and 'Guidelines for application of IUCN Red List criteria at regional and national levels version 4.0 (IUCN 2012)'. It is purposely written in present form of sentences so that it can be reutilized as a guiding principle for any future Red List Assessment in Bangladesh.

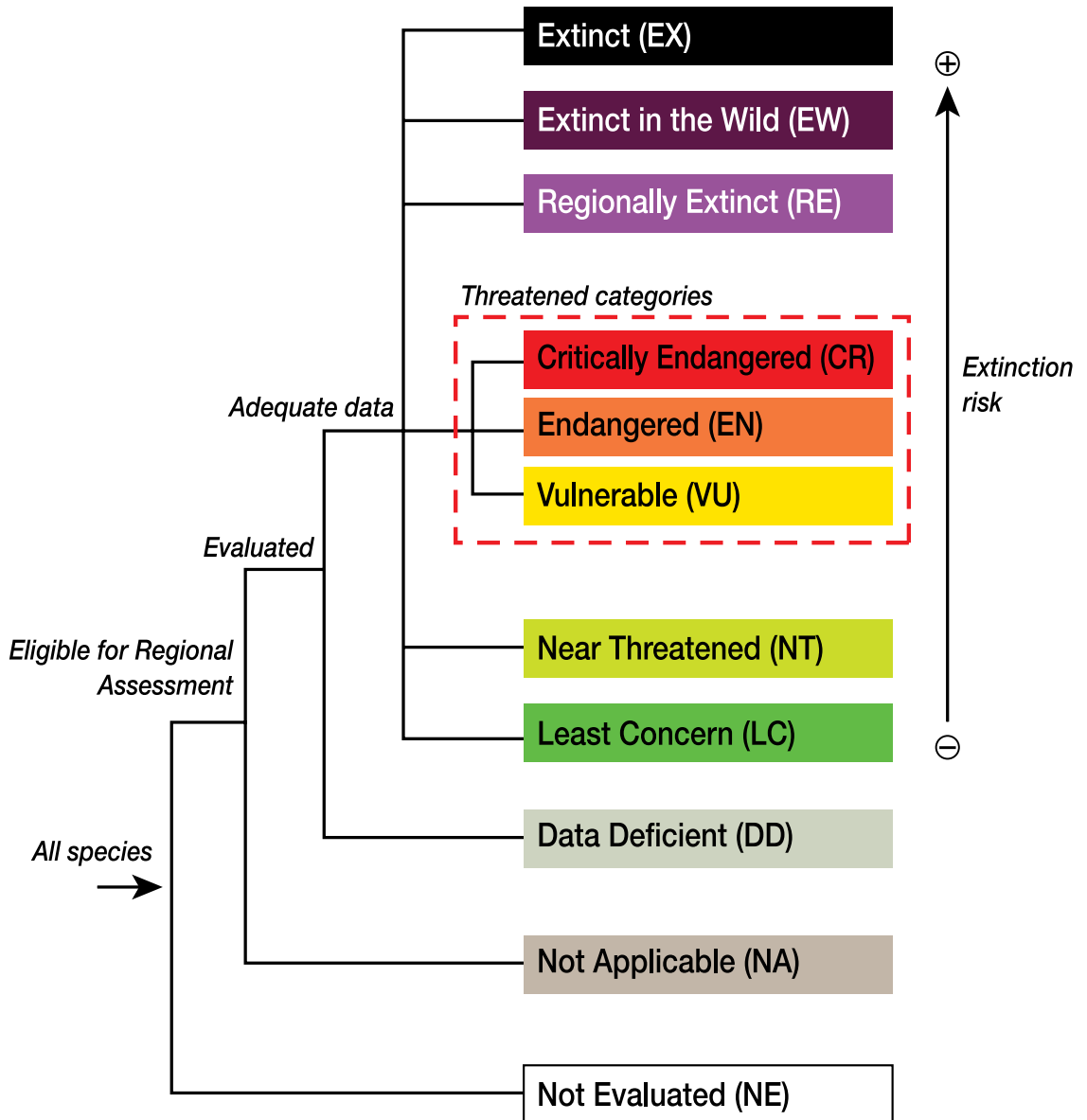


Figure 11: Red List categories (Regional/National Level) (IUCN 2012)

regional, national or local levels needs to refer to the guidelines prepared by the IUCN/SSC Regional Applications Working Group and the National Red List Working Group of the IUCN SSC Red List Committee (e.g. Gardenfors *et. al.* 2001; IUCN 2003, 2012). All the rules and definitions in the IUCN Red List Categories and Criteria: Version 3.1 (IUCN 2001, 2012) apply at regional levels, unless otherwise indicated in the above regional guideline.

When applied at national or regional levels it must be recognized that a global category may not be the same as a national or regional category for a particular taxon. For example, taxa classified as Least Concern globally might be Critically Endangered within a particular region where numbers are very small or declining, perhaps only because they are at the margins of their global range. Conversely, taxa classified as Vulnerable on the basis of their global declines in numbers or range might be Least Concern within a particular region where their population are stable. Similar results were found in the cases of current assessment, many species assessment results differed from their category assessed at the global level.

It is also important to note that taxa endemic to regions or nations will be assessed globally in any regional or national applications of the criteria, and in these cases great care must be taken to check that an assessment has not already been undertaken by a Red List Authority (RLA), and that the categorization is agreed with relevant RLA. In Bangladesh, during this assessment process, no such endemic species were assessed that needed to be considered for above steps. However, following the regional assessment guideline two more categories were applied (IUCN, 2012), Regionally Extinct (RE) for those species extinct locally but still exist elsewhere and Not Applicable (NA) for species those are not native to the region or country concerned. All taxa listed as Critically Endangered qualify for Vulnerable and Endangered, and all listed as Endangered qualify for Vulnerable. Together these categories are described as 'threatened'.

The threatened categories form a part of the overall scheme. All the taxa were placed into one of the categories listed in the Figure 11.

Explanation of the above categories is given below:

EXTINCT (EX)

A taxon is Extinct when there is no reasonable doubt that the last individual has died. A taxon is presumed Extinct when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.

EXTINCT IN THE WILD (EW)

A taxon is Extinct in the Wild when it is known only to survive in cultivation, in captivity or as a naturalized population (or populations) well outside the past range. A taxon is presumed Extinct in the Wild when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.

REGIONALLY EXTINCT (RE)

Category for a taxon when there is no reasonable doubt that the last individual potentially capable of reproduction within the region has died or has disappeared from the wild in the region, or when, if it is a former visiting taxon, the last individual has died or disappeared in the wild from the region. The setting of any time limit for listing under RE is left to the discretion of the regional Red List authority, but should not normally pre-date 1500 AD.

CRITICALLY ENDANGERED (CR)

A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered, and it is therefore considered to be facing an extremely high risk of extinction in the wild.

ENDANGERED (EN)

A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered, and it is therefore considered to be facing a very high risk of extinction in the wild.

VULNERABLE (VU)

A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable, and it is therefore considered to be facing a high risk of extinction in the wild.

NEAR THREATENED (NT)

A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.

LEAST CONCERN (LC)

A taxon is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are included in this category.

DATA DEFICIENT (DD)

A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution are lacking. Data Deficient is therefore not a category of threat. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate. It is important to make positive use of whatever data are available. In many cases great care should be exercised in choosing between DD and a threatened status. If the range of a taxon is suspected to be relatively circumscribed, and a considerable period of time has elapsed since the last record of the taxon, threatened status may well be justified.

NOT EVALUATED (NE)

A taxon is Not Evaluated when it has not yet been evaluated against the criteria.

NOT APPLICABLE (NA)

Category for a taxon deemed to be ineligible for assessment at a regional level. A taxon may be NA because it is not a wild population or not within its natural range in the region, or because it is a vagrant to the region. It may also be NA because it occurs at very low numbers in the region (i.e. when the regional Red List authority has decided to use a “filter” to exclude taxa before the assessment procedure) or the taxon may be classified at a lower taxonomic level (e.g. below the level of species or subspecies) than considered eligible by the regional Red List authority. In contrast to other Red List Categories, it is not mandatory to use NA for all taxa to which it applies; but is recommended for taxa where its use is informative.

2.3.3. Criteria for Critically Endangered, Endangered and Vulnerable

The Red List Assessment is based primarily on five broad Criteria as follows:

- **Criteria A:** Population reduction (measured in percent reduction of population) for different threatened categories. This criterion has four sub-criteria which further take into accounts four factors.
- **Criteria B:** Geographic range in the form of either B1 (Extent of Occurrences-EOO) and B2 (Area of Occupancy-AOO)
- **Criteria C:** Applicable for small population size and decline
- **Criteria D:** Applicable for very small or restricted population (used in terms of number of mature individuals)
- **Criteria E:** Relates to Qualitative Analysis

CRITICALLY ENDANGERED (CR)

A taxon is Critically Endangered when the best available evidence indicates that it meets any of the following criteria (A to E), and it is therefore considered to be facing an extremely high risk of extinction in the wild:

- A. Reduction in population size based on any of the following:
 1. An observed, estimated, inferred or

- suspected population size reduction of 90% over the last 10 years or three generations, whichever is the longer, where the causes of the reduction are clearly reversible AND understood AND ceased, based on (and specifying) any of the following:
- (a) direct observation
 - (b) an index of abundance appropriate to the taxon
 - (c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
 - (d) actual or potential levels of exploitation
 - (e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.
2. An observed, estimated, inferred or suspected population size reduction of 80% over the last 10 years or three generations, whichever is the longer, where the reduction or its causes may not have ceased OR may not be understood or may not be reversible, based on (and specifying) any of (a) to (e) under A1.
 3. A population size reduction of 80%, projected or suspected to be met within the next 10 years or three generations, whichever is the longer (up to a maximum of 100 years), based on (and specifying) any of (b) to (e) under A1.
 4. An observed, estimated, inferred, projected or suspected population size reduction of 80% over any 10 year or three generation period, whichever is longer (up to a maximum of 100 years in the future), where the time period must include both the past and the future, and where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of (a) to (e) under A1.
- B. Geographic range in the form of either B1 (extent of occurrence) OR B2 (area of occupancy) OR both:
1. Extent of occurrence estimated to be less than 100 km², and estimates indicating at least two of a-c:
 - (a) Severely fragmented or known to exist at only a single location.
 - (b) Continuing decline, observed, inferred or projected, in any of the following:
 - i) extent of occurrence
 - ii) area of occupancy
 - iii) area, extent and/or quality of habitat
 - iv) number of locations or subpopulations
 - v) number of mature individuals.
 - (c) Extreme fluctuations in any of the following:
 - i) extent of occurrence
 - ii) area of occupancy
 - iii) number of locations or subpopulations
 - iv) number of mature individuals.
 2. Area of occupancy estimated to be less than 10 km², and estimate indicating at least two of a-c:
 - (a) Severely fragmented or known to exist at only a single location.
 - (b) Continuing decline, observed, inferred or projected, in any of the following:
 - i) extent of occurrence
 - ii) area of occupancy
 - iii) area, extent and/or quality of habitat
 - iv) number of locations or subpopulations
 - v) number of mature individuals.
 - (c) Extreme fluctuations in any of the following:
 - i) extent of occurrence
 - ii) area of occupancy
 - iii) number of locations or subpopulations
 - iv) number of mature individuals.
- C. Population size estimated to number fewer than 250 mature individuals and either:
1. An estimated continuing decline of at least 25% within three years or one generation, whichever is longer, (up to a maximum of 100 years in the future) OR
 2. A continuing decline, observed, projected, or inferred, in numbers of mature individuals AND at least one of

the following (a-b):

- (a) Population structure in the form of one of the following:
 - i) no subpopulation estimated to contain more than 50 mature individuals,OR
 - ii) at least 90% of mature individuals in one subpopulation.
- (b) Extreme fluctuations in number of mature individuals.

- D. Population size estimated to number fewer than 50 mature individuals.
- E. Quantitative analysis showing the probability of extinction in the wild is at least 50% within 10 years or three generations, whichever is the longer (up to a maximum of 100 years).

ENDANGERED (EN)

A taxon is Endangered when the best available evidence indicates that it meets any of the following criteria (A to E), and it is therefore considered to be facing a very high risk of extinction in the wild:

- A. Reduction in population size based on any of the following:
 - 1. An observed, estimated, inferred or suspected population size reduction of 70% over the last 10 years or three generations, whichever is the longer, where the causes of the reduction are clearly reversible AND understood AND ceased, based on (and specifying) any of the following:
 - (a) direct observation
 - (b) an index of abundance appropriate to the taxon
 - (c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
 - (d) actual or potential levels of exploitation
 - (e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.
 - 2. An observed, estimated, inferred or suspected population size reduction of 50% over the last 10 years or three generations, whichever is the longer,

where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of (a) to (e) under A1.

- 3. A population size reduction of 50%, projected or suspected to be met within the next 10 years or three generations, whichever is the longer (up to a maximum of 100 years), based on (and specifying) any of (b) to (e) under A1.
 - 4. An observed, estimated, inferred, projected or suspected population size reduction of 50% over any 10 year or three generation period, whichever is longer (up to a maximum of 100 years in the future), where the time period must include both the past and the future, AND where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of (a) to (e) under A1.
- B. Geographic range in the form of either B1 (extent of occurrence) OR B2 (area of occupancy) OR both:
 - 1. Extent of occurrence estimated to be less than 5,000 km², and estimates indicating at least two of a-c:
 - (a) Severely fragmented or known to exist at no more than five locations.
 - (b) Continuing decline, observed, inferred or projected, in any of the following:
 - i) extent of occurrence
 - ii) area of occupancy
 - iii) area, extent and/or quality of habitat
 - iv) number of locations or subpopulations
 - v) number of mature individuals.
 - (c) Extreme fluctuations in any of the following:
 - i) extent of occurrence
 - ii) area of occupancy
 - iii) number of locations or subpopulations
 - iv) number of mature individuals.
 - 2. Area of occupancy estimated to be

less than 500 km², and estimates indicating at least two of a-c:

- (a) Severely fragmented or known to exist at no more than five locations.
 - (b) Continuing decline, observed, inferred or projected, in any of the following:
 - i) extent of occurrence
 - ii) area of occupancy
 - iii) area, extent and/or quality of habitat
 - iv) number of locations or subpopulations
 - v) number of mature individuals.
 - (c) Extreme fluctuations in any of the following:
 - i) extent of occurrence
 - ii) area of occupancy
 - iii) number of locations or subpopulations
 - iv) number of mature individuals.
- C. Population size estimated to number fewer than 2,500 mature individuals and either:
- 1. An estimated continuing decline of at least 20% within five years or two generations, whichever is longer, (up to a maximum of 100 years in the future) OR
 - 2. A continuing decline, observed, projected, or inferred, in numbers of mature individuals AND at least one of the following (a-b):
 - (a) Population structure in the form of one of the following:
 - i) no subpopulation estimated to contain more than 250 mature individuals,OR
 - ii) at least 95% of mature individuals in one subpopulation.
 - (b) Extreme fluctuations in number of mature individuals.
- D. Population size estimated to number fewer than 250 mature individuals.
- E. Quantitative analysis showing the probability of extinction in the wild is at least 20% within 20 years or five generations, whichever is the longer (up to a maximum of 100 years).

VULNERABLE (VU)

A taxon is Vulnerable when the best available evidence indicates that it meets any of the following criteria (A to E), and it is therefore considered to be facing a high risk of extinction in the wild:

- A. Reduction in population size based on any of the following:
- 1. An observed, estimated, inferred or suspected population size reduction of 50% over the last 10 years or three generations, whichever is the longer, where the causes of the reduction are clearly reversible AND understood AND ceased, based on (and specifying) any of the following:
 - (a) direct observation
 - (b) an index of abundance appropriate to the taxon
 - (c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
 - (d) actual or potential levels of exploitation
 - (e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.
 - 2. An observed, estimated, inferred or suspected population size reduction of 30% over the last 10 years or three generations, whichever is the longer, where the reduction or its causes may not have ceased or may not be understood or may not be reversible, based on (and specifying) any of (a) to (e) under A1.
 - 3. A population size reduction of 30% projected or suspected to be met within the next 10 years or three generations, whichever is the longer (up to a maximum of 100 years), based on (and specifying) any of (b) to (e) under A1.
 - 4. An observed, estimated, inferred, projected or suspected population size reduction of 30% over any 10 year or three generation period, whichever is longer (up to a maximum of 100 years in the future), where the time period must include both the

past and the future, AND where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of (a) to (e) under A1.

B. Geographic range in the form of either B1 (extent of occurrence) OR B2 (area of occupancy) OR both:

1. Extent of occurrence estimated to be less than 20,000 km², and estimates indicating at least two of a-c:

- (a) Severely fragmented or known to exist at no more than 10 locations.
- (b) Continuing decline, observed, inferred or projected, in any of the following:
 - i) extent of occurrence
 - ii) area of occupancy
 - iii) area, extent and/or quality of habitat
 - iv) number of locations or subpopulations
 - v) number of mature individuals.
- (c) Extreme fluctuations in any of the following:
 - i) extent of occurrence
 - ii) area of occupancy
 - iii) number of locations or subpopulations
 - iv) number of mature individuals.

2. Area of occupancy estimated to be less than 2,000 km², and estimates indicating at least two of a-c:

- (a) Severely fragmented or known to exist at no more than 10 locations.
- (b) Continuing decline, observed, inferred or projected, in any of the following:
 - i) extent of occurrence
 - ii) area of occupancy
 - iii) area, extent and/or quality of habitat
 - iv) number of locations or subpopulations
 - v) number of mature individuals.
- (c) Extreme fluctuations in any of the following:

- i) extent of occurrence
- ii) area of occupancy
- iii) number of locations or subpopulations
- iv) number of mature individuals.

C. Population size estimated to number fewer than 10,000 mature individuals and either:

- 1. An estimated continuing decline of at least 10% within 10 years or three generations, whichever is longer, (up to a maximum of 100 years in the future)
OR
- 2. A continuing decline, observed, projected, or inferred, in numbers of mature individuals AND at least one of the following (a-b):
 - (a) Population structure in the form of one of the following:
 - i) no subpopulation estimated to contain more than 1,000 mature individuals, OR
 - ii) all mature individuals in one subpopulation.
 - (b) Extreme fluctuations in number of mature individuals.

D. Population very small or restricted in the form of either of the following:

- 1. Population size estimated to number fewer than 1,000 mature individuals.
- 2. Population with a very restricted area of occupancy (typically less than 20 km²) or number of locations (typically five or fewer) such that it is prone to the effects of human activities or stochastic events within a very short time period in an uncertain future, and is thus capable of becoming Critically Endangered or even Extinct in a very short time period.

E. Quantitative analysis showing the probability of extinction in the wild is at least 10% within 100 years.

See Appendix iv for a summary of five criteria used to evaluate if a taxon belongs to an IUCN Red List threatened category i.e. Critically Endangered, Endangered or Vulnerable.



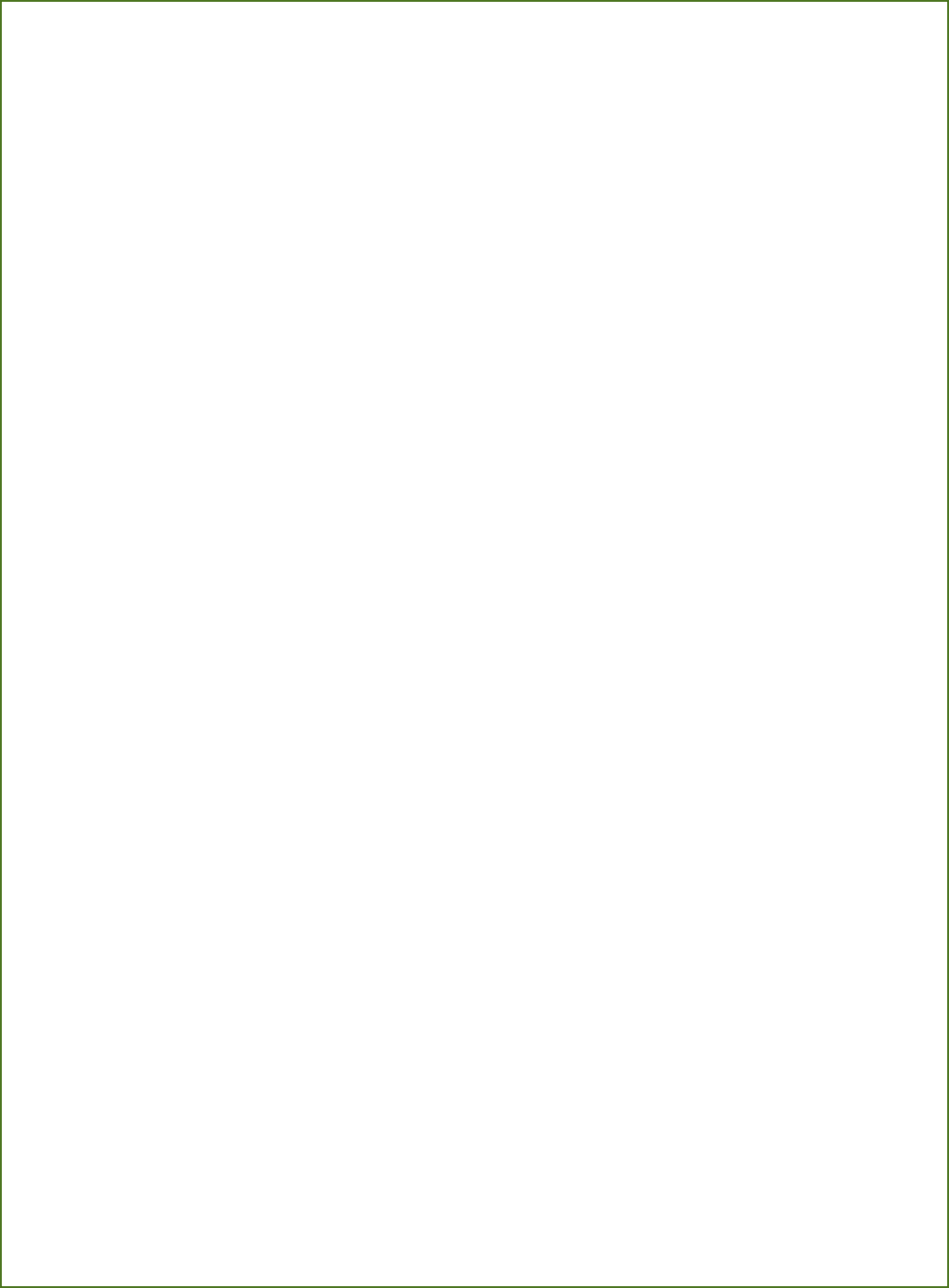
1st Meeting of the National Red List Committee



Regional dissemination workshop held in Bangladesh Agricultural University

STATUS OF CRUSTACEANS IN BANGLADESH





3. STATUS OF CRUSTACEANS IN BANGLADESH

As Bangladesh like many other nations of the world sets in motion to react to the ongoing crisis of biodiversity loss, the information on overall status of biodiversity, the rate is it being lost at, where is it being lost and what are the causes of decline is crucial to design and implement effective conservation strategies and to communicate the scope and severity of the problem. The ability to monitor and evaluate changes in the status of biodiversity is also essential for measuring the success or failure in halting biodiversity loss. For the first time, crustaceans have been included and assessed using 'IUCN Red List Categories and Criteria (Version 3.1, Second Edition of 2012)' in Bangladesh. This is first ever initiative to evaluate and determine the biodiversity status of 141 mainly macro-crustaceans – shrimps, prawns, crabs, lobsters and a few micro-crustaceans - zooplanktons inhabiting Bangladesh, their population size and trend, national abundance, home range, habitat condition, threats and ongoing conservation initiatives.

3.1. Present Status of Crustaceans in Bangladesh

Among the crustaceans listed for the assessment of the biodiversity status, 9.93% are assessed as threatened (i.e., with an elevated risk of extinction) in Bangladesh. Nonetheless, the proportion of threatened crustaceans is indecisive given the extremely high number of Data Deficient (DD) species (56%) and could be 65.96% (if all DD species are considered threatened) in Bangladesh (Table 1 & Figure 12). Threatened Crustaceans– Endangered and Vulnerable in Bangladesh are listed in Table 2.

Table 1. Red List Status of Crustaceans in Bangladesh, 2015

IUCN Red List Categories	Number of species assessed (Percentages of total assessed)
Extinct (EX)	0 (0)
Extinct in the Wild (EW)	0 (0)
Regionally Extinct (RE)	0 (0)
Critically Endangered (CR)	0 (0)
Endangered (EN)	2 (1.42)
Vulnerable (VU)	11 (7.80)
Near Threatened (NT)	1 (0.71)
Least Concern (LC)	47 (33.33)
Data Deficient (DD)	79 (56.03)
Not Evaluated (NE)	1 (0.71)
Total number of species assessed	141 (100)

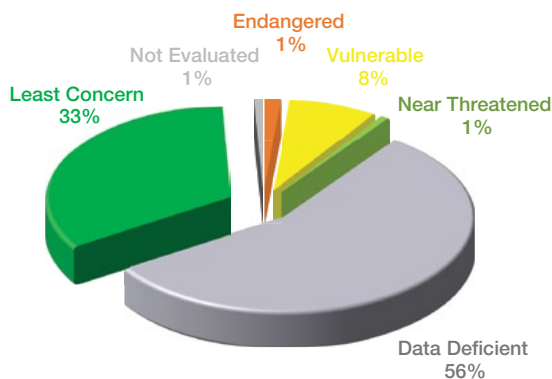


Figure 12. Status of Crustaceans according to assessment of IUCN Red List 2015 in Bangladesh

Table 2. Threatened Crustaceans in Bangladesh (arranged in taxonomic order)

Status code: EN-Endangered, VU-Vulnerable, LC-Least Concern, DD-Data Deficient, NE-Not Evaluated

Sl. No.	Class	Order	Family	Scientific Name	English Name	Local Name	Status in Bangladesh	Status Global	Species ID
1	Malacostraca	Decapoda	Portunidae	<i>Charybdis feriata</i>	Crucifix Crab, Coral Crab	Shil Kankra, Shila Kankra	VU	NE	CR0007
2	Malacostraca	Decapoda	Portunidae	<i>Charybdis natator</i>	Ridged Swimming Crab, Swimming Crab	Kankra	VU	NE	CR0009
3	Malacostraca	Decapoda	Portunidae	<i>Charybdis variegata</i>	Swimming Crab	Chitrito Shantaru Kankra	VU	NE	CR0010
4	Malacostraca	Decapoda	Portunidae	<i>Portunus sanguinolentus</i>	Three Spot Swimming Crab	Teen Fota Kankra	VU	NE	CR0012
5	Malacostraca	Decapoda	Palinuridae	<i>Panulirus homarus</i>	Scalloped Spiny Lobster	Unknown	VU	LC	CR0072
6	Malacostraca	Decapoda	Palinuridae	<i>Panulirus ornatus</i>	Ornate Spiny Lobster	Chhua Icha	VU	LC	CR0073
7	Malacostraca	Decapoda	Palinuridae	<i>Panulirus polyphagus</i>	Mud Spiny Lobster	Chhua Ichha, Kanta Lobster	VU	LC	CR0074
8	Malacostraca	Decapoda	Palinuridae	<i>Panulirus versicolor</i>	Painted Spiny Lobster	Nil Kanta Lobster, Chhua Icha	EN	LC	CR0075
9	Malacostraca	Decapoda	Matutidae	<i>Matuta lunaris</i>	Common Moon Crab	Lojaboti Kankra, Chandra Kankra	VU	NE	CR0084
10	Merostomata	Xiphosura	Limulidae	<i>Carcinoscorpius rotundicauda</i>	Mangrove Horseshoe Crab	Raj Kakra, Sagar Kakra	VU	DD	CR0088
11	Malacostraca	Stomatopoda	Squillidae	<i>Oratosquilla perpersa</i>	Common Squillid Mantis Shrimp	Unknown	EN	NE	CR0113
12	Branchiopoda	Diplostraca	Daphniidae	<i>Ceriodaphnia reticulata</i>	Water Flea	Unknown	VU	NE	CR0126
13	Maxillopoda	Calanoidea	Diaptomidae	<i>Diaptomus gracilis</i>	Calanoid Copepod	Unknown	VU	NE	CR0131



Charybdis variegata

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3.2. Status by Taxonomic Group Prawn and Shrimp

A total of 64 prawns and shrimps under 8 Families (Class –Malacostraca, Order–Decapoda) are assessed. The group is dominated by the two Families – Palaemonidae with 20 prawn species mainly of freshwater and estuarine origin and Penaeidae with 24 shrimp species of mainly marine and coastal origin. Among the 64 taxa assessed, 27 are classed as Least Concern and 37 as Data Deficient. The high percentages of Data Deficient species are resulted because of the acute paucity of useful data and information in recent or distant past on the population sizes. Based on the very limited or no records, it was impossible to clearly define the distribution of

these species, their habitat requirements or threats associated.

Therefore, the proportion of threatened prawns and shrimps is uncertain given the extremely high percentages of Data Deficient (DD) species (58%) and there are possibilities that almost all if not all the data deficient prawn and shrimp are under some degree of threat and could be assessed under different threatened categories with a possibility of some already been Extinct (Table 3 & Figure 13). Among the eight Families assessed, hundred percent of all 10 species under 4 Families - Alpheidae, Atyidae, Hippolytidae and Pandalidae are assessed as Data Deficient.

Table 3. IUCN Red List category of prawns and shrimps in Bangladesh

Status code: CR-Critically Endangered, EN-Endangered, VU-Vulnerable, LC-Least Concern, DD-Data Deficient
NE-Not Evaluated

Family	Total	CR	EN	VU	NT	LC	DD	% Threatened
Alpheidae	1	-	-	-	-	-	1	-
Atyidae	4	-	-	-	-	-	4	-
Hippolytidae	2	-	-	-	-	-	2	-
Palaemonidae	20	-	-	-	-	11	9	-
Pandalidae	3	-	-	-	-	-	3	-
Penaeidae	24	-	-	-	-	11	13	-
Sergestidae	6	-	-	-	-	2	4	-
Soleniceridae	4	-	-	-	-	3	1	-
Total	64	-	-	-	-	27	37	-



Figure 13. IUCN Red List status of prawns and shrimps in Bangladesh

Lobster

A total of six lobsters under two Families (Class – Malacostraca, Order – Decapoda) were recorded in Bangladesh water and all 6 are included in the red list assessment. Overall lobster is the group showing highest percentages of threatened species (83%). In Palinuridae, 100% of the species are assessed as threatened (one Endangered and three Vulnerable) and in Scyllaridae one

species is assessed as Near Threatened and other one as Data Deficient (Table 4 and Figure 14).

Mantis Shrimp

One mantis shrimp under the Family Squillidae (Class–Malacostraca, Order–Stomatopoda) is enlisted for the assessment of the IUCN red list category and assessed as Endangered (Table 5).

Table 4. IUCN Red List categories of lobsters in Bangladesh

Status code: CR-Critically Endangered, EN-Endangered, VU-Vulnerable, LC-Least Concern, DD-Data Deficient, NE-Not Evaluated

Family	Total	CR	EN	VU	NT	LC	DD	% Threatened
Palinuridae	4	-	1	3	-	-	-	100
Scyllaridae	2	-	-	-	1	-	1	50
Total	6	-	1	3	1	-	1	83

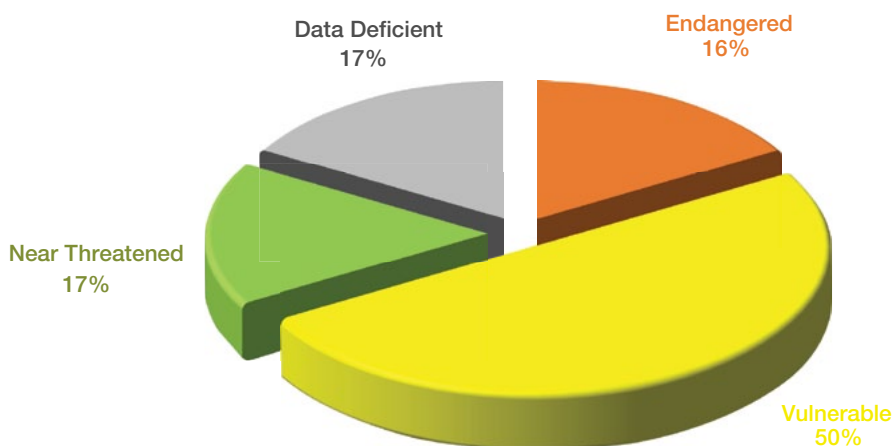


Figure 14. IUCN Red List status of prawns and shrimps in Bangladesh

Table 5. IUCN Red List categories of mantis shrimp in Bangladesh

Status code: CR-Critically Endangered, EN-Endangered, VU-Vulnerable, LC-Least Concern, DD-Data Deficient, NE-Not Evaluated

Family	Total	CR	EN	VU	NT	LC	DD	% Threatened
Squillidae	1	-	1	-	-	-	-	100
Total	1	-	1	-	-	-	-	100

Seed Shrimp

A total of 4 seed shrimps under two Families (Class – Ostracoda, Order –Podocopida) are enlisted for assessing the biodiversity status. One species under the family Cypridae - *Cyprois occidentalis* is assessed as Not Evaluated. The species is only found in Canada and North America and such a parochial, sessile animal cannot come to Bangladesh before reaching Europe and most parts of Asia vis-a-vis India where it is totally absent. The authors of two publications must have made the mistake in identifying the species. Therefore, *C. occidentalis* is classed under Not Evaluated.

All four seed shrimps under the family Cyprididae are assessed as Data Deficient due to the lack of present or past data on their population, trend and threats. (Table 6)

Clam Shrimp

One clam shrimp under the Family Cyclestheriidae (Class - Branchiopoda Order – Diplostraca) - *Cyclestheria hislopi* is enlisted for the assessment and assessed as Data Deficient due to the absence any credible data on its population size, specific locations of recording and possible threat on its biodiversity (Table 7).

Crab

A total of 38 crabs under 11 Families (Class –Malacostraca, Order–Decapoda) are recorded from Bangladesh and enlisted for the assessment for the biodiversity status. Among the 38 species assessed, 18 are classed as Data Deficient, 15 Least Concern and 5 Vulnerable. More than 47% crabs are assessed as Data Deficient because of the lack of data on the past trend on the population sizes, distribution, habitat requirements and level of threats. Therefore, the percentage of threatened crab is indecisive and could be 60% if all Data Deficient crabs are under different threatened

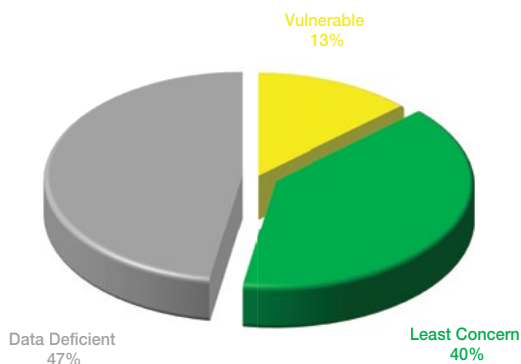


Figure 15. IUCN Red List status of crabs in Bangladesh

Table 6. IUCN Red List categories of seed shrimps in Bangladesh

Family	Total	CR	EN	VU	NT	LC	DD	NE	% Threatened
Cypridae	1	-	-	-	-	-	-	1	-
Cyprididae	4	-	-	-	-	-	4	-	-
Total	1	-	-	-	-	-	4	1	-

Table 7. IUCN Red List categories of clam shrimp in Bangladesh

Family	Total	CR	EN	VU	NT	LC	DD	% Threatened
Cyclestheriidae	1	-	-	-	-	-	1	-
Total	1	-	-	-	-	-	1	-

Status code: CR-Critically Endangered, EN-Endangered, VU-Vulnerable, LC-Least Concern, DD-Data Deficient NE-Not Evaluated

categories (Table 8 & Figure 15). Among the eleven Families assessed, 33% and 44% of the crabs respectively from the two Families – Matutidae and Portunidae are assessed as Vulnerable. These threatened crabs have immense importance from environment and commercial point of view and presently fished and dried at large scale to produce fish meal to be used in fish and poultry feed. All the crabs (100%) under 4 Families - Calappidae, Daldorfiidae, Dotilidae and Leucosiidae are judged as Data Deficient and

could be under several threat categories with a possibility of some already been Regionally Extinct.

Horseshoe Crab

One horseshoe crab under the Family Limulidae (Class –Merostomata, Order– Xiphosura), *Carcinoscorpius rotundicauda* is assessed as Vulnerable (Table 9). The abundance of the horseshoe crab known as ‘living fossil’ is environmentally very important and has been declining over the years due to

Table 8. IUCN Red List categories of crabs in Bangladesh

Family	Total	CR	EN	VU	NT	LC	DD	% Threatened
Calappidae	4	-	-	-	-	-	4	-
Daldorfiidae	1	-	-	-	-	-	1	-
Dotilidae	1	-	-	-	-	-	1	-
Gecarcinucidae	1	-	-	-	-	1	-	-
Grapsidae	4	-	-	-	-	2	2	-
Leucosiidae	1	-	-	-	-	-	1	-
Matutidae	3	-	-	1	-	-	2	33
Ocypodidae	8	-	-	-	-	2	6	-
Portunidae	9	-	-	4	-	4	1	44
Potamidae	3	-	-	-	-	3	-	-
Sesarmidae	3	-	-	-	-	3	-	-
Total	38	-	-	5	-	15	18	13

Table 9. IUCN Red List categories of horseshoe crab in Bangladesh

Family	Total	CR	EN	VU	NT	LC	DD	% Threatened
Limulidae	1	-	-	1	-	-	-	100
Total	1	-	-	1	-	-	-	100

Status code: CR-Critically Endangered, EN-Endangered, VU-Vulnerable, NT-Near Threatened, LC-Least Concern DD-Data Deficient

over harvesting as well as habitat degradation causing by loss of sandy beaches they need for spawning and development of malformed embryos due to exposure of coastal water pollutants like heavy metals and agrochemicals.

Hermit Crab

Four hermit crabs under three families (Class – Malacostraca, Order–Decapoda) are enlisted to determine their biodiversity status. Hermit crabs under two of the three Families are assessed as Data Deficient and crab under Family Diogenidae is judged Least Concern (Table 9 and Figure 16).

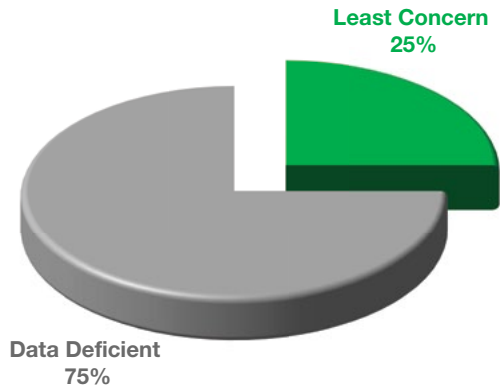


Figure 16. IUCN Red List status of Hermit crabs in Bangladesh

Table 10. IUCN Red List categories of hermit crabs in Bangladesh

Family	Total	CR	EN	VU	NT	LC	DD	% Threatened
Coenobitidae	1	-	-	-	-	-	1	-
Diogenidae	1	-	-	-	-	1	-	-
Paguridae	2	-	-	-	-	-	2	-
Total	4	-	-	-	-	1	3	-

Barnacle

Three barnacles under three Families (Class –Maxillopoda, Order–Sesillia) are enlisted for assessing their biodiversity status and one assessed as Least Concern and two as Data Deficient (Table 11).

Isopod Parasite

Two isopod parasites under two Families (Class –Malacostraca, Order – Isopoda) are assessed as Data Deficient because of the lack of the information on their distribution, population trend and threat status (Table 12).

Table 11. IUCN Red List categories of barnacles in Bangladesh

Family	Total	CR	EN	VU	NT	LC	DD	% Threatened
Balanidae	1	-	-	-	-	1	-	-
Chthamalidae	1	-	-	-	-	-	1	-
Tetraclitidae	1	-	-	-	-	-	1	-
Total	3	-	-	-	-	1	2	-

Table 12. IUCN Red List categories of isopod parasites in Bangladesh

Family	Total	CR	EN	VU	NT	LC	DD	% Threatened
Cymothoidae	1	-	-	-	-	1	1	-
Bopyridae	1	-	-	-	-	-	1	-
Total	1	-	-	-	-	1	2	-

Status code: CR-Critically Endangered, EN-Endangered, VU-Vulnerable, NT-Near Threatened, LC-Least Concern, DD-Data Deficient

Zooplankton

A total of 16 crustacean zooplanktons under two Classes, three Orders and six Families are enlisted for the assessment for their biodiversity status. Among the six Families assessed, zooplanktons under two Families - Daphniidae and Diaptomidae were found to include Vulnerable species. All the zooplanktons under three Families - Bosmoineidae, Macrothricidae and Moinidae are classed under Data Deficient due to lack of proper data on population, distribution and threat (Table 13 and Figure 17).

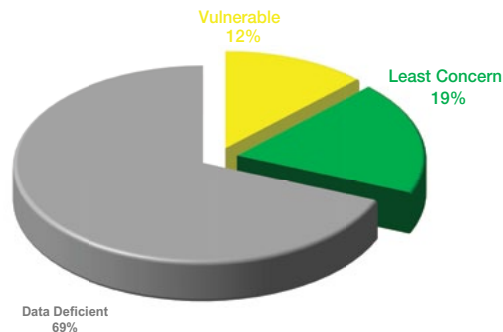


Figure 17. IUCN Red List status of crustacean zooplanktons in Bangladesh

Table 13. IUCN Red List categories of crustacean zooplanktons in Bangladesh

Status code: CR-Critically Endangered, EN-Endangered, VU-Vulnerable, NT-Near Threatened, LC-Least Concern, DD-Data Deficient

Family	Total	CR	EN	VU	NT	LC	DD	% Threatened
Class – Branchiopoda, Order - Diplostraca								
Bosmoineidae	1	-	-	-	-	-	1	-
Daphniidae	3	-	-	1	-	2	-	33
Macrothricidae	1	-	-	-	-	-	1	-
Moinidae	3	-	-	-	-	-	3	-
Class – Maxillopoda, Order– Calanoida								
Diaptomidae	2	-	-	1	-	-	1	50
Class – Maxillopoda, Order–Cyclopoida								
Cyclopidae	6	-	-	-	-	1	5	-
Total	16	-	-	2	-	3	11	12.5

3.3. Spatial Distribution of Crustaceans

3.3.1. Crustacean Richness

The offshore islands in the southern coast, coast line and beaches and coastal rivers clearly stand out as areas of high richness of crustacean species (Figure 18). Sundarban mangrove forest and rivers of the hill districts also exhibit greater crustacean diversity. Sylhet-Mymensingh haor basin is particularly rich for a number of sweet water prawns.

Islands like St. Martin's, Char Kukri Mukri, Dhal Char, Sonar Char and Sundarbans covered by natural and planted mangrove contains not only the common shrimps and crabs but also very rich with many rare crustaceans. Many crabs, shrimps, lobsters, horseshoe crab, mantis shrimp, hermit crabs are nowhere available in

the country but only in these islands. Barnacles are only recorded from Chittagong and Cox's Bazar beaches. A number of both common and rare shrimps and crabs are recorded from the two hill streams – the Halda and the Sangu and the small falls in the Himchhari National Park closed to the shoreline of the Bay of Bengal. Many zooplanktons are only recorded from the sweet water natural ponds and ponds under fish farming located in the northern parts of the country.

Nonetheless, there is a general tendency in crustaceans of Bangladesh for biodiversity to decrease from the Bay of Bengal, offshore Island, beaches and mangroves to the main land and freshwater rivers, lakes and canals.

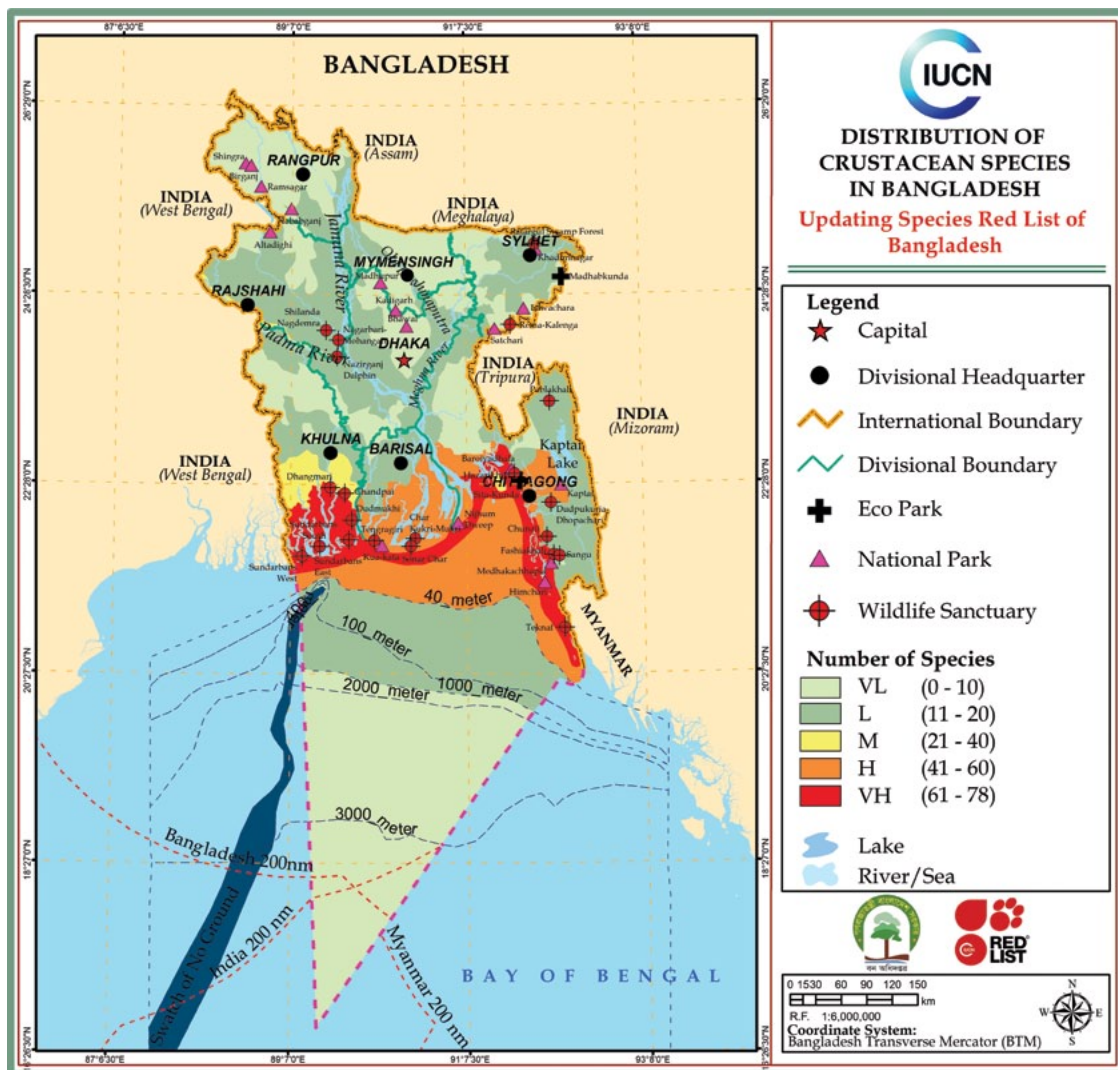


Figure 18. Map showing the distribution of all assessed Crustaceans in Bangladesh

3.3.2. Threatened Crustacean Richness

The greatest concentration of the threatened crustaceans is observed in the offshore islands – St. Martin’s, Char Kukri Mukri, Sonar Char and in the Sundarban mangrove forest (Figure 19, 20 & 21).

Though assessed as data deficient, a rare prawn, *Macrobrachium lar* is recorded only from the Sangu Valley and *Calappa bilineata* is recorded only from St. Martin’s Island. Particularly St. Martin’s Island and Char Kukri Mukri emerge as hotspots for a

number of threatened crabs and lobsters. The waters in and around the Sundarban mangrove forest and Cox’s Bazar also exhibit greater diversity for a number of threatened crustaceans.

3.4. Threats to Crustaceans in Bangladesh

With 9.93% threatened and 56% Data Deficient crustaceans in Bangladesh, a complete and holistic indication of the threats is virtually impossible. Nonetheless, sustainable management with long term conservation

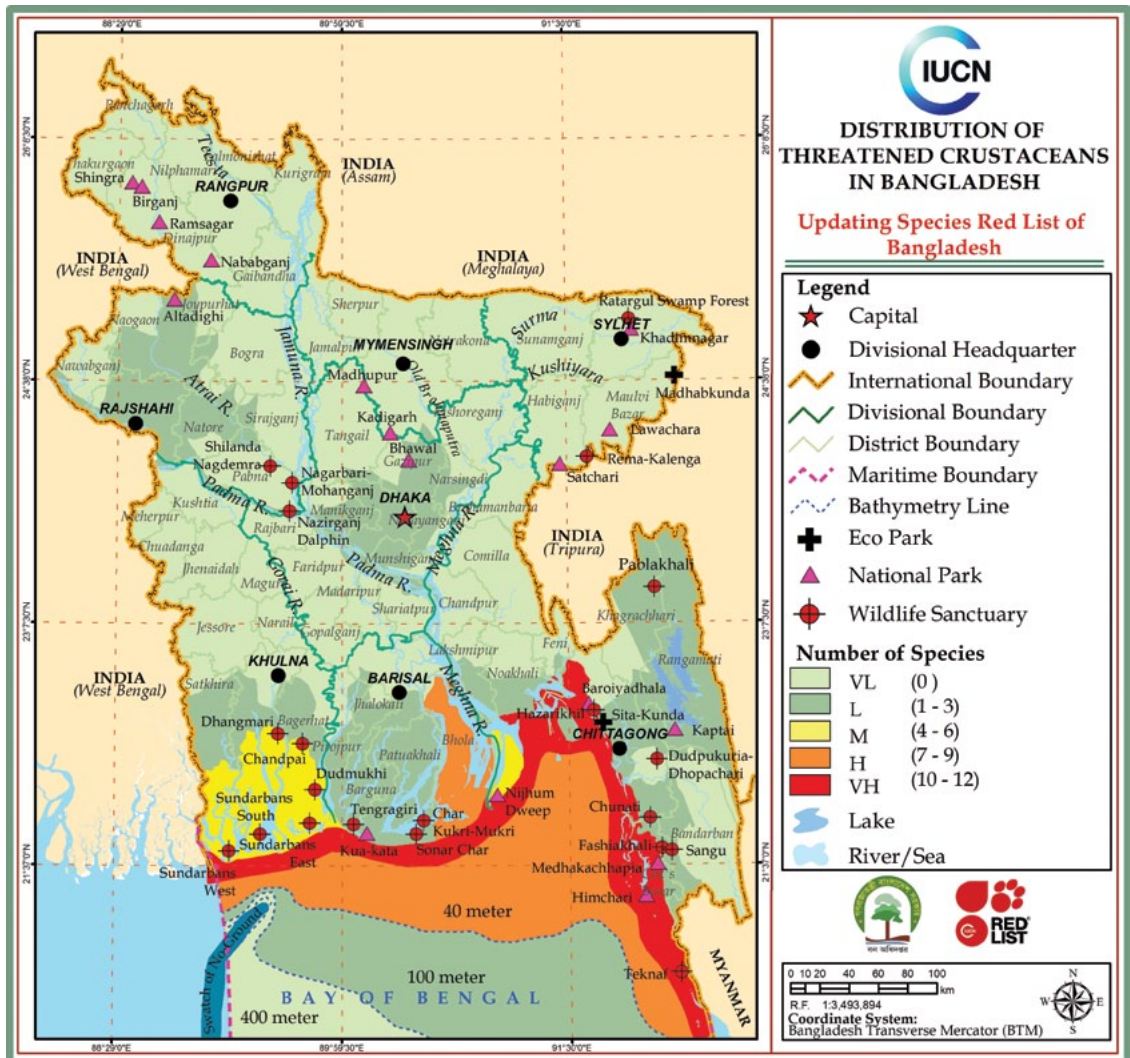


Figure 19. Map showing the distribution of threatened Crustaceans in Bangladesh

pathways for these dwindling crustaceans must be planned and executed very carefully despite the considerable gaps in data and useful information, particularly in relation to taxonomic uncertainty and lack of quantitative species-specific population trends. According to the different assessors those assessed the crustaceans, more than 25% had no threats specified. An array of threats identified by the assessors for the remaining species is presented in the Figure 22.

Bangladesh is most at risk from climate change. Poverty and large low-lying coastal regions prone to floods and cyclones are among factors making Bangladesh the

number one exposed country to climate change. Climate change impacts gradually over a wide range of livelihoods in different settings. Drought and siltation together are reducing over wintering habitat for the aquatic organisms including almost all the crustaceans resulting in less and less recruitments over the years. Reduced water flow in the Ganges rivers basin has resulted in a severe depletion of the abundance of prawns, shrimps, crabs and other crustaceans. Due to the decrease in groundwater and surface water, tremendous pressure has been exerted on wetlands to convert them to crop land, resulting in a serious decline in crustacean diversity.

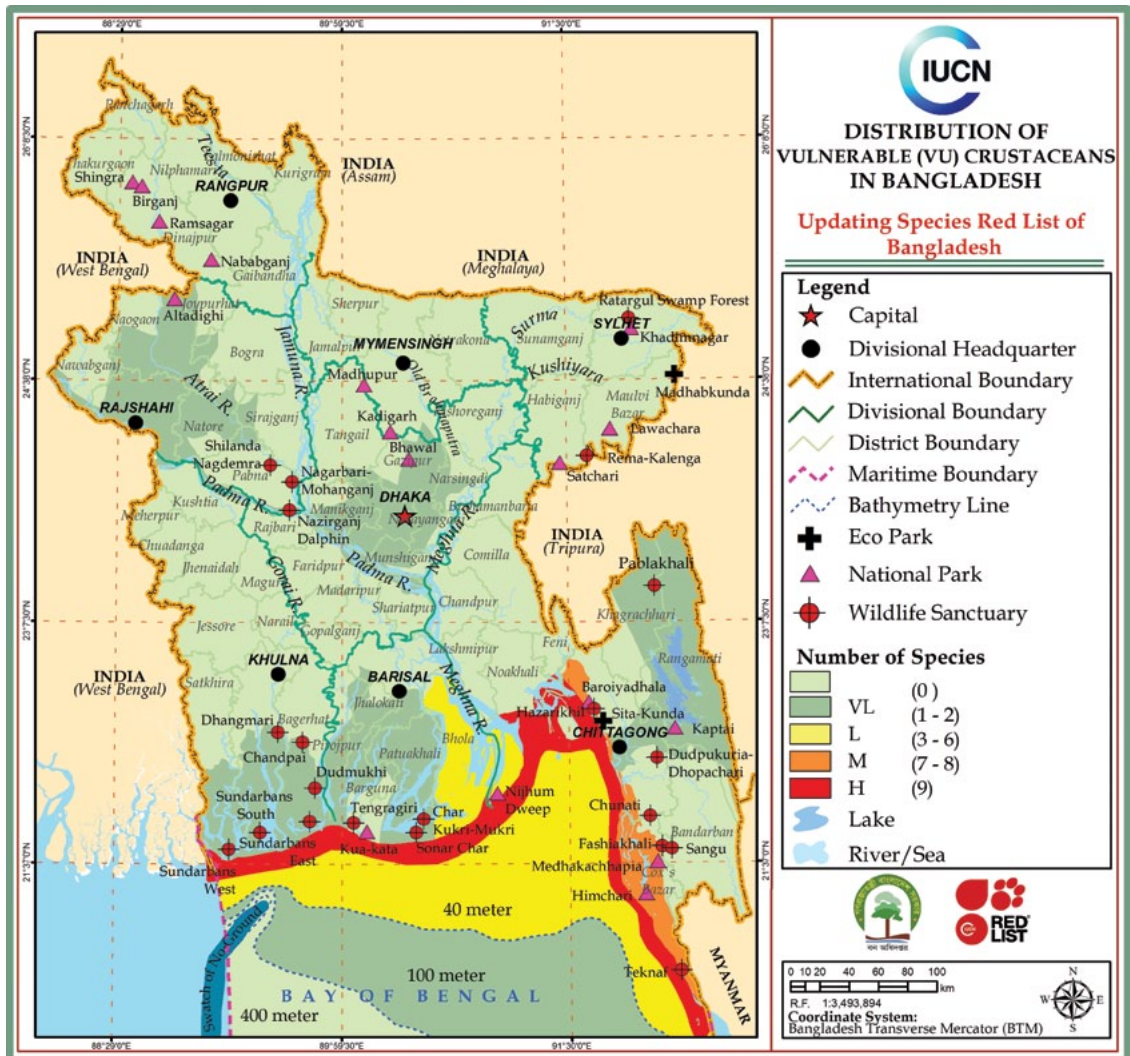


Figure 20: Map showing the distribution of Vulnerable Crustaceans in Bangladesh

Indeed, there may be nowhere in the world where effects of climate change and other natural/anthropogenic activities on aquatic biodiversity are more apparent than Bangladesh. Fishing pressure from an ever-growing population has increased dramatically and has seriously affected the abundance many fish and shellfish of Bangladesh.

The greatest threat as identified to the crustaceans of Bangladesh is habitat destruction due to pollution from agricultural, industrial and municipal effluents and wastes followed by the overexploitation and extreme fishing pressure. Together, these form the two most common and severest threats, affecting

almost all threatened and data deficient crustaceans. Pollution, in the form of sewage, run off, oil spills, nutrient loads, sedimentation, herbicides, pesticides and noise pollution, affects most of the threatened crustaceans. Rapid urban and industrial development, the major causes of pollution in the populous country like Bangladesh, have degraded critical coastal habitats, such as fish nursery and spawning areas used by hundreds of fish and shellfish along with the altering of their spawning, feeding and migration and other bio-physiological aspects.

Every year, there are thousands of tons of different pesticides (insecticides, herbicides,

piscicide, miticides, fungicides, weedicides etc.) used around the globe that enter into aquatic systems from direct application and indirectly through terrestrial runoff or wind-borne drift. Pesticide affects the aquatic ecosystem by interrupting the aquatic food chain of fish and shellfish resulting loss of natural diversity. The inundated floodplains of Bangladesh during monsoon are the seasonal habitat of the many shellfish. The residual effects of pesticides applied to these floodplains for agricultural purpose before monsoon lead to the mass mortality of many fish and shellfish. Besides mortality, there are also many other chronic effects of pesticides

on aquatic organisms including changes in their reproductive system, metabolism, growth patterns, food availability and population size and numbers (Rohar and Crumrine 2005). Lower abundance of phytoplankton and, consequently, lower abundance of zooplankton are observed as a result of pesticide use in the waterbodies. The application of a pesticide might kill all individuals and it can be substantial perturbation to the ecosystem.

The indiscriminate use of insecticides and pesticides in the crop fields by the farmers is one of the major causes of many shellfish being threatened and data deficient in

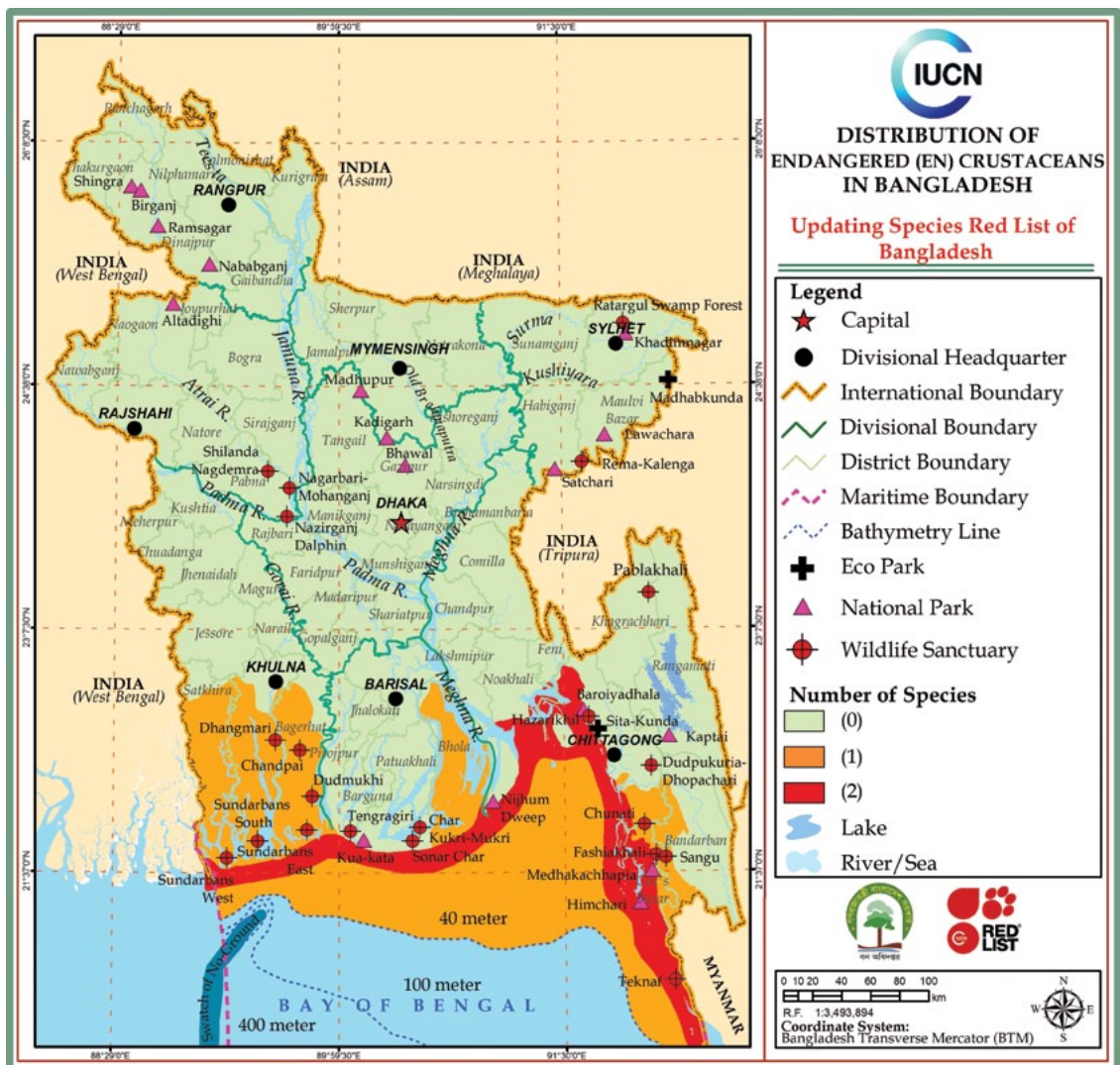


Figure 21. Map showing the distribution of Endangered Crustaceans in Bangladesh

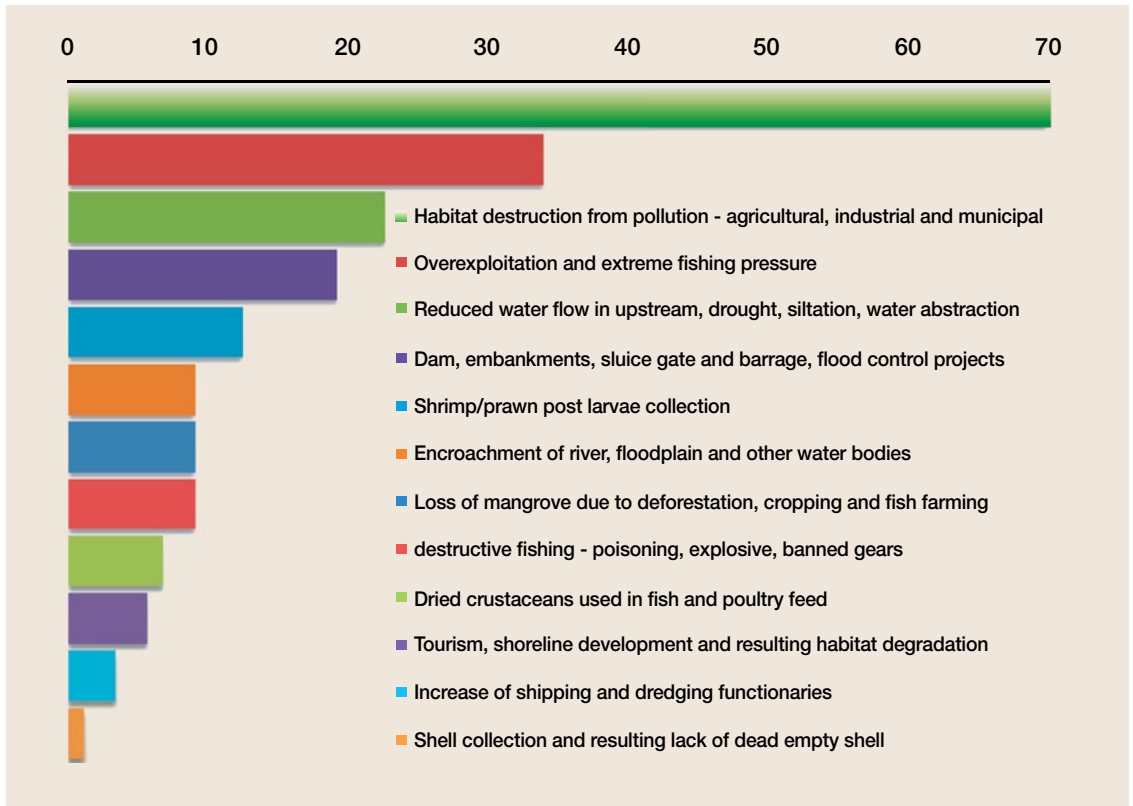


Figure 22. Major threats to the crustaceans of Bangladesh (frequencies as stated by the assessors)

Bangladesh. High yielding varieties (HYV) of rice have replaced the indigenous ones resulting in substantial increase in insecticides and pesticides use and causing total disappearance of fish and shellfish from many monsoon-fed water bodies (Mazid 2002). Prolonged misuse of pesticides and fertilizers over the years has also halted the sustainable management of fisheries (Abdullah *et al.* 1997).

In Bangladesh, in most cases, crustaceans are overexploited as non-target catch or by-catch and that substantially impacts particularly the marine and coastal crustaceans (Figure 23). Non-target catches in Bangladesh are never recorded and species-specific estimates of discard rates and fishing mortality are rarely available.

Whilst habitat loss, fishing and over harvesting are the main threats affecting crustacean biodiversity, a variety of other anthropogenic and environmental stressors like reduced water flow, drought, siltation and water abstraction

may also exacerbate threats. However, the severity of such threats mainly depends on the extent of spatial and temporal overlap with the distribution of critically important crustacean habitats and hotspots.

Though not consumed by mainstream Muslim and Hindu community, marine/coastal crabs have been exploited heavily in recent years mainly for two reasons - to be exported to eastern and far-eastern countries (1-2 species of giant mud crab – *Scylla*) and to be used as main source of protein (all other marine and coastal crabs) in fish and poultry feed. Each year, thousands of tons of crabs are harvested which severely damaging the crab diversity of the country. In addition, huge quantity of different small shrimp including mantis and other shrimp species have been dried to be used for human consumption as dried fish (*Shutki*) and fermented product marketed as *Naf ti/Nappi* (a term used by the local ethnic groups to mean many species of unwanted shrimp catch from



a. Drying of Swimming crab, *Charybdis variegata*



b. Drying of Common Squillid Mantis Shrimp, *Oratosquilla perpensa*



c. Drying of Three spot swimming crab, *Portunus sanguinolentus*



d. *Acetes* sp. are caught in bulk



e. Drying of *Acetes* sp.



f. *Naf ti* making using huge quantity of small marine shrimp

Figure 23. Indiscriminate drying of crabs and shrimps to produce meal for fish/poultry feed and dried and fermented product for human consumption in Nazir Tek, Cox's bazar
© Mostafa A R Hossain

the sea that are purchased at throw away price or just collected, fermented, preserved and marketed for long term use). Chakma and other tribes in the hill region of the country use it as their basic protein supply when they fail to hunt animals, including fishes.

In low lying coastal areas where flood risk from tidal surges is a potential threat to crop farming, the building and strengthening of polders and the creation of new defenses have created the opportunities both for paddy and shrimp farming but hugely impacted coastal ecosystems for wild fish and shellfish. Recent activities aiming to stabilize the coastline also cause considerable losses of aquatic habitat in the coast with considerable and direct impact of beach dwelling crabs.

Coastal development has continued apace in the recent years especially in Chittagong and Cox's Bazar beaches with the expansion of cities, ports, tourist resorts and associated recreational areas. Mass tourism in Cox's Bazar and Kuakata beach has increased both the size of the national and overseas tourists and number of hotels to manifolds.

Shipping lanes inside the Sundarbans affects the habitats and ecology of a number of valuable fish and shellfish through operational, bilge and ballast water discharges from cruise ships, large tankers and cargo carriers. Aquatic pollution can also occur through the accidental sinking of oil tanker and regular release of toxic chemicals used in antifouling paints and leaching of heavy metals and oil and toxic substances from discharges and can destabilize the delicate ecosystem and can cause massive threat to the crustacean biodiversity of the Sundarbans and other neighbouring offshore islands.

Natural system modifications, including the construction of polders in the coastal areas of Khulna and Bagherhat Districts, are affecting many crustaceans. These polders block the migration routes of fish and shellfish and reduce the effective areas that are used by many aquatic organisms thereby increasing the pressures on species that rely on movement

between freshwater and marine environments. Other natural system modifications, including land reclamation projects, construction of shrimp ghers replacing the mangroves and beach construction also impact many crustaceans living in the beach, shoreline and continental shelf and slope.

Impact of Exotic Species

As a country of rivers and wetlands, Bangladesh is very rich in fish and shellfish diversity. Even then, over the last six decades a total of 25 fishes have been introduced. The invasive species rapidly spread over the wetlands as biological explosives during the rainy seasons. Most of the introduced species were meant only for captive cultivation in closed pond systems but nobody succeeded to maintain the fish in captivity. During monsoon and/or flood the escapees easily found their ways to the rivers and floodplains throughout the country. This posed one of the major threats to the biodiversity of many crustaceans and other aquatic life forms in Bangladesh.



Golpata, *Nypa fruticans* in the Sundarbans

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3.5. Protection of Crustacean Habitats and Species in Bangladesh

A number of efforts have been made to improve the conservation status of fishes and shellfishes in Bangladesh. The government of Bangladesh, a number of non-government organizations (NGOs), International NGOs (INGOs) and socio-environmental organizations have taken a number of regulatory and development interventions for sustainable management of the wild fishes and shellfishes. In order to reverse the loosing trend and ensure sustainability of aquatic biodiversity in natural waters, various measures for protection, conservation and management of resources both species and habitat have been adopted time to time. Shellfishes and other aquatic and terrestrial organisms have been influenced by this management and advisory measures, all of which played an important role in providing technical advice and developing management measures.

3.5.1. *The Laws, Rules and Acts*

At the global level, the main legal instrument governing the animal biodiversity are the Convention on Biological Diversity (CBD), Convention on the Conservation of Migratory Species of Wild Animals (CMS) and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). These conventions provide a framework for species and environmental protection and aim to protect species. Bangladesh has signed the Convention on Biological Diversity (CBD) in 1992 (signature date: 05.06.1992 and ratification date: 03.05.1994). The country signed the Convention on International Trade in Endangered Species in 1973. Bangladesh is also a signatory to the Ramsar Convention and the World Heritage Convention. Among the Acts developed nationally - the Bangladesh Wildlife (Preservation) Act, 1974, the Forest Act, 1927 (amended in 1989), the Fish Act, 1950 and the Environment Protection Act, 1995 provide legal support for biodiversity conservation in the country. Various projects like the Forest Resources Management Project, the Development of Wildlife Conservation and Management Project, the National Conservation

Strategy Implementation Project, Phase-I and the National Environmental Management Action Program have been implemented for the conservation and preservation of wildlife and biodiversity. In the Wildlife Legislation under the Wildlife (Conservation and Security) Act, 2012 (30) Schedule 1, twenty-two crustaceans have been included (Table 16).

Among the measures that are in place include, the implementation of Fish Protection and Conservation Act, 1950 and related rules including New Fisheries Management Policy (licensing the fishing rights directly to the true fishers), Community Based Fisheries Management (CBFM), establishment of sanctuaries in the strategic points of the rivers and floodplains, stock enhancement in rivers and floodplains and aquatic habitat improvement through excavation of link canals between rivers and floodplains.

The Fish Act, 1950 provides regulations for: (i) restriction on capture size of some species for a specific period, (ii) restriction on catch of any species for specific time or season, (iii) closure of fishing in any water body for any stipulated time period, (iv) restriction of fishing by dewatering or any other destructive method, (v) restriction on the use of any kind of gear and mesh size of net and (vi) restriction on placing fixed engine in a water course, which may restrict fish and shellfish migration.

Implementation of fisheries regulations has proved to be very difficult in this country due to institutional weakness of implementing authorities and the socio-economic conditions of the fishers. However, the Fish Act, 1950 element – ‘closure of fishing in specific area for specific period’ as may be termed as ‘sanctuary’ is easier than applying other regulations of the Fish Act. Sanctuary has been tested and found as a powerful tool for protection and conservation of fish and shellfish in Bangladesh.

The dry season is the critical time for the inland shellfishes, when water levels in the rivers, canals, beels etc. recede drastically leaving a very few refuge for them. Particularly many

Table 14. Wildlife Act 2012 (30) Schedule 1 - Arthropods- Crustacean

Bangla Vernacular Name	Common English Name	Scientific Name
Family - Limulidae		
1 ঘোড়াকৃতি কাঁকড়া	Horse shoe Crab	<i>Limulus polyphemus</i>
Family - Carpilidae		
2 কাল ফোটা কাঁকড়া	Spotted Reef Crab	<i>Carpilius maculatus</i>
3 লাল কাঁকড়া	Red Crab	<i>Ocypode ceratophthalma</i>
Family - Palinuridae		
4 ছুয়া ইচা/ লোবস্টার	Ornate Spiny Lobster	<i>Panulirus ornatus</i>
5 ছুয়া ইচা/ লোবস্টার	Mud Spiny Lobster	<i>Panulirus polyphagus</i>
6 নীলকণ্ঠ লোবস্টার	Marine Crayfish	<i>Panulirus versicolor</i>
Family - Scyllaridae		
7 বেলচানাসা লোবস্টার	Flathead Lobster	<i>Thenus orientalis</i>
Family - Calappidae		
8 বাক্স কাঁকড়া	Common Box Crab	<i>Calappa lophos</i>
9 কাঁটা বাক্স কাঁকড়া	Spiny Box Crab	<i>Calappa pustulosa</i>
Family - Matutidae		
10 লজ্জাবতী / চন্দ্র কাঁকড়া	Moon Crab	<i>Matuta lunaris</i>
11 লজ্জাবতী / চন্দ্র কাঁকড়া	Flower Moon Crab	<i>Matuta planipes</i>
12 চান্দি কাঁকড়া	Common Moon Crab	<i>Matuta victor</i>
Family - Daldorfidae		
13 শীলা কাঁকড়া	Horid Elbous Crab	<i>Daldorfia horrida</i>
Family - Portunidae		
14 শীলা কাঁকড়া	Coral Crab	<i>Charybdis feriatus</i>
15 সাঁতারু কাঁকড়া	Swimming Crab	<i>Charybdis hellerii</i>
16 সাঁতারু কাঁকড়া	Swimming Crab	<i>Charybdis natator</i>
17 সাঁতারু কাঁকড়া	Swimming Crab	<i>Charybdis variegata</i>
18 সাঁতারু কাঁকড়া	Blue Swimming Crab	<i>Portunus pelagicus</i>
19 তিন ফোটা কাঁকড়া	Three-spot Swimming Crab	<i>Portunus sunaguinalentus</i>
20 বড় কাঁকড়া /জাত কাঁকড়া	Mud Crab/Mangrove Crab	<i>Scylla olivacea</i>
21 বড় কাঁকড়া /হাবা কাঁকড়া	Giant Mud Crab	<i>Scylla serrata</i>
22 সাঁতারু কাঁকড়া	Crenate Swimming Crab	<i>Thalamita crenata</i>



Figure 24. A typical sanctuary constructed with bamboo poles and water hyacinth. The habitats are created at the bottom with bushy tree branches (inset photo) where prawns, shrimps, crabs and aquatic insects take shelters, feed, breed and thrive on.

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prawns, shrimps, crabs and zooplankton are exposed to greater predation and increased susceptibility to fishing pressure as the water level drops due to water extraction for irrigation and evaporation due to persistent heat of the dry season. Loss of surface water in the dry season results in the reduction in the shellfish broodstock. The shellfishes become increasingly vulnerable to intensive fishing and thereby the stock particularly the broodstock depletes to such a level that cannot sustain the shellfish fishery and gradually shellfish diversity and production decline. Therefore, the major issue for biodiversity conservation is to provide sufficient dry season refuges to maintain the population at sustainable level.

Among all measures, the sanctuaries established in the rivers and floodplain (Figure 24) and temporal and seasonal fishing ban though targeted primarily to conserve fish have been apparently found most effective for conservation of shellfish biodiversity as

well, when other measures are difficult to implement in the present administrative and social contexts. With this notion, Bangladesh government has established sanctuaries under different development projects following a number of management approaches since 1960 and more intensively in last decade. The NGOs like Bangladesh Rural Advancement Committee (BRAC), Congregations Around Richmond Involved to Assure Shelter (CARITAS), Center for Natural Resource Studies (CNRS), Proshikkhan Shikkha Karmo (PROSHIKA) and WorldFish Centre (Community based Fisheries Management - CBFM project) have also been involved in aquatic stock development by establishing traditional sanctuaries in beels and rivers of Bangladesh. In addition, a number of silted up beels, baors, dead rivers and link canals have been re-excavated by the government under the food for work programs over the years. By 2000 a total of about 8,300 ha water area of borrow pit, baors, dead rivers, canals and

beels had been excavated (DoF 2005). In the late 1990s the government approved a series of sectoral policies including National Fisheries Policy (1998), National Environment Policy (1995) and National Land Use Policy (2001) with a new emphasis on maintaining and protecting the moribund natural waterbodies. Under the National Fisheries Policy, government has formulated strategies for capture fisheries and emphasized on fisher community participation in fisheries management, along with sanctuaries as a key management tool (DoF 2005).

3.5.2. The Sanctuaries

The massive siltation has threatened the existence of most of the inland waterbodies – rivers, floodplains, beels, haors and baors. Many waterbodies once the blessings for Bangladesh providing fishing, communication and irrigation facilities are now drying up at an alarming rate. Most of the waterbodies are becoming empty of lives. The causes of reduced abundance of shellfish and fish are over-fishing, reduced flooding, siltation, agricultural and industrial pollution etc. These activities have severely affected the indigenous aquatic diversity of the country. The complete drying up in many parts of the river and other waterbodies is a common scenario during lean season, which is detrimental to the populations of prawns, shrimps, crabs, crustacean zooplanktons and other shellfishes. Where perennial waterbodies have been transformed to seasonal waters due to several manmade and natural factors, establishing a sanctuary (refuges where aquatic animals are protected during the dry season) can help to restore the both their habitat and diversity. The establishment of sanctuaries in the deeper parts of the waterbodies where species reside during dry season and grow and attain maturity for spawning in the next monsoon– is particularly very important. At the onset of early monsoon rains, these animals disperse on the rivers and adjacent floodplains for breeding and feeding.

Following the provision of the Fish Act 1950, Govt. declared closed season for fishing of certain species or for aquatic species in specified water bodies under normal fisheries management programme and under different

development schemes/projects of Department of Fisheries (DoF). Under the Development and Management Scheme of DoF, 23 sanctuaries were established in different floodplains during 1960-1965. Upon having good results of the established sanctuaries, 25 more sanctuaries were established under the same scheme of DoF during 1965-70. Afterwards 10 more sanctuaries were established in 1987 under the Integrated Fisheries Development Project of DoF (Figure 24).

Most of the sanctuaries now focus on the need of involvement of fisher community and local govt. in the management system, long tenure of lease period and also strong monitoring and supervision. Besides, to safeguard of the fishers' interest, the Govt. policy now is to establish sanctuary in part of the floodplain and the remaining part is open for fishing by the local fishers. Based on this idea, under different development projects, government has established a number of sanctuaries involving the fisher communities with support of NGOs. In a government declared sanctuary, catching/killing of any aquatic organisms including all kind of fish and shellfish is prohibited by law and order of competent authority for all the times to come or for a specified period mainly with objective of protecting/conserving the aquatic species.

A total of 463 permanent sanctuaries covering an area of 1,745 ha have been established in 98,405 ha water bodies by 2007 (Table 15). A number of the sanctuaries have been closed after the projects ended. Management has deteriorated in many sanctuaries due to the conflict of interests among the stakeholders, lack of funding and lack of coordination among the organizations.

The sanctuary in Bangladesh is proved to be an important and efficient tool for management in protection and conservation of fishes, shellfishes and other aquatic organisms (Ali *et al.* 2009). Many prawns, shrimps, crabs, aquatic insects, snails, mussels elsewhere declining and disappearing have been observed to be resurrected in the sanctuaries. Since mid-1980s, concept of the participation of local

Table 15. Sanctuaries established in Bangladesh by 2007

Project/ Programme	Area of water body ha	Area of Sanctuary ha	Number of Sanctuary
Fourth Fisheries Project	12,233	1,022	63
Community Based Fisheries Project (CBFM-2)	9,602	93	182
Management of Aquatic Ecosystems through Community Husbandry Project (MACH)	785	76	65
New Fisheries Management Policy	1,698	77	21
Fisheries/ Fish Culture Development in Beel and Chharas Project	1,294	18	29
Aqua Development Project (Faridpur)	454	11	14
Patuakhali Barguna Aquaculture Extension Project (PBAEP)	307	26	19
Fish Habitat Restoration Project	3,890	73	45
Fisheries Development in Jabai Beel project	75	4	4
Sustainable Environment Management Programme (SEMP-17)	50	17	12
Community Based Wetland Management Project (CBWM- 4)	17	4	7
Kaptai Lake	68,000	324	2
Total	98,405	1,745	463

Modified from Ali *et al.* (2009)

fisher community in setting up and managing sanctuaries has been the government policy. However, a major problem in managing sanctuaries in public water bodies is the policy conflict between the government ministries. Although the national fisheries policy envisages establishing sanctuaries, there is no clear guideline for establishment and management of sanctuaries. To make the sanctuaries more effective, the following stages should be followed - mitigation of all the conflicts among the stakeholders involved, formulation of clear guidelines of sanctuary management, selecting the strategic place and size of the sanctuary, proper awareness building among the stakeholders, ensuring proper community organization and full participation and continuous monitoring and impact assessment.

3.5.3. Shellfish Breeding and Domestication

As more shellfish species of Bangladesh

become threatened, there is tremendous need to preserve the disappearing genetic material as well as to conserve the existing gene pools. The ideal strategy for conservation of threatened and endangered shellfish is through restoration of the native habitat of the species (*in situ* approach). Unfortunately, most habitat damages are irrevocable and where remediation is possible it is costly and requires a great deal of time, as the restoration process is slow. One alternative is to maintain *ex situ* conservation (outside the natural environment) as live populations (Pullin *et al.* 1991).

Domestication of wild shellfishes in most cases benefits both the farmer and the environment. Investments in domestication have to pay off; therefore, researches should take into account the biodiversity and production scenario and overall socioeconomic and environmental outcome

at a broader scale. In Bangladesh, to date only 2 shellfishes - giant freshwater prawn and marine tiger shrimp have been domesticated and their breeding and rearing protocols have been developed (Table 16). In addition, giant mud crab has recently been semi-domesticated and without developing protocol for breeding and mass seed production, wild caught small crabs have widely been fattened in homestead coastal ponds and in cages. Though there is high possibility of working with reduced gene pool, it is optimistically believed that the biodiversity of the domesticated shellfish is well-preserved.

While all these measures paved the way of progressing towards crustacean conservation in Bangladesh, further efforts are must to ensure that all kind of crustacean habitats – in freshwater, brackish waters and marine waters have adequate management and deliver the protection required.

3.6. Red List Versus Priority for Conservation Action

Most of the threats to crustacean biodiversity are anthropogenic – the result of human activities and human actions alone can save many crustaceans from becoming extinct. Though assessing biodiversity status (the risk of extinction) and defining conservation priorities are interrelated but distinct processes. The main purpose of the IUCN Red List assessment is to produce a checklist of

taxa that have undergone an extinction risk assessment using the IUCN Red List Categories and Criteria.

Prioritizing conservation action, however, takes into account many different factors such as ecological, economical, taxonomic, historical, or socio-cultural preferences for some species over others. It is also based on the assessment of the possibility of success of conservation actions, availability of funds or manpower, cost-effectiveness and legal frameworks for the conservation of threatened species. In general, five major groups of conservation actions are considered - Research action, Communication and education, Policy-based actions, Ecosystem or Site specific actions and Species-specific actions.

In the context of crustacean biodiversity risk assessments in a populous country like Bangladesh which has 54 transboundary rivers and long border with India and Myanmar, it is important to consider not only conditions within its own territory but also the status of the taxon from a regional perspective and the proportion of the global population that occurs within the country. The decision on how these factors, are analyzed for establishing conservation priorities is a matter for the all concerned – government, GOs, NGOs, social and community based organizations, policy makers and donors to determine, taking into account the assessment status of the crustacean species of concern.

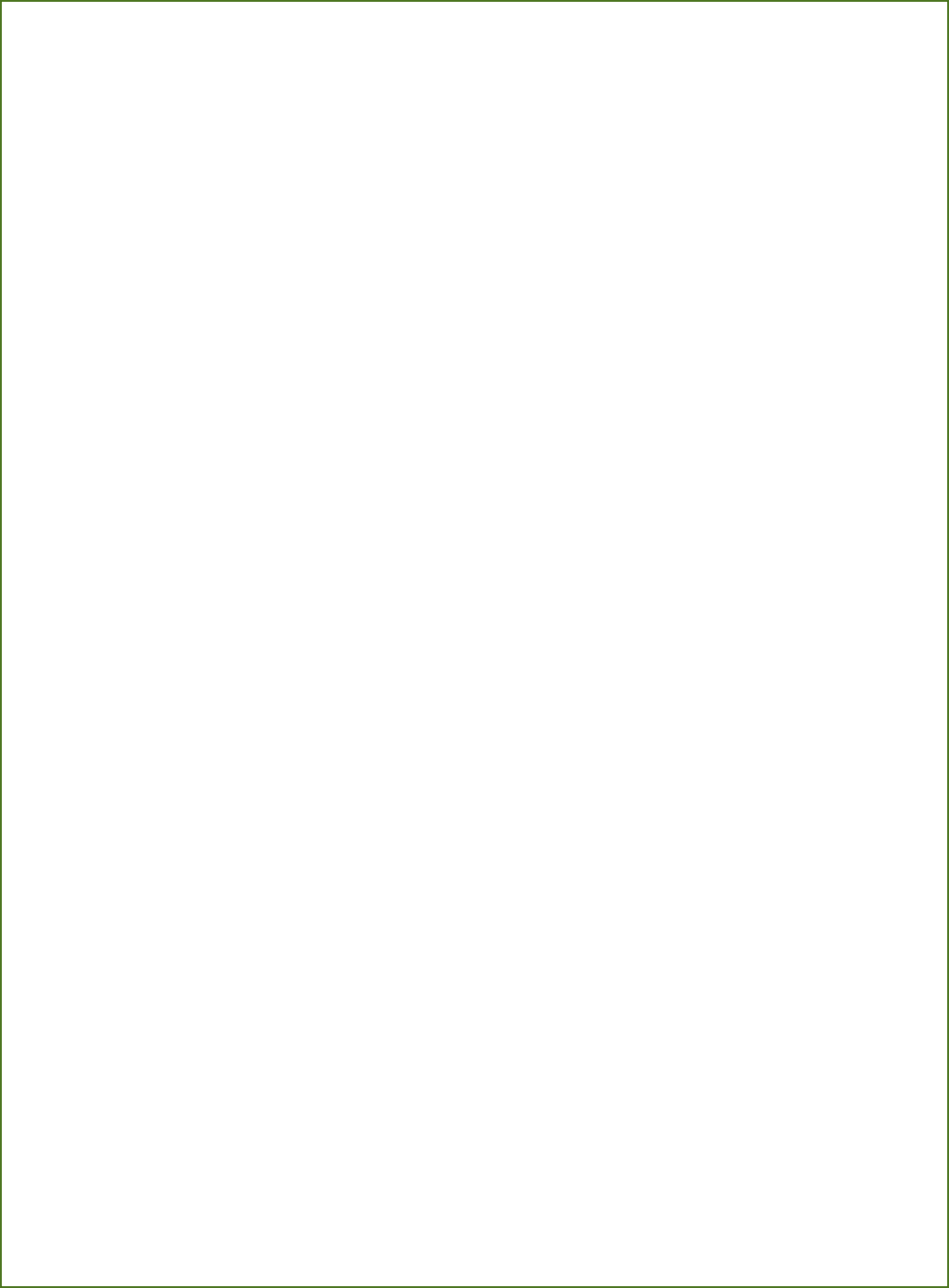
Table16. The domesticated shellfishes of Bangladesh

Common name	Scientific name	Domestication/ farming status
Giant Freshwater prawn	<i>Macrobrachium rosenbergii</i>	Mass seed production and rearing protocol developed and fine-tuned, Coast-wide commercial farming with sporadic culture in the main land of the country
Marine Tiger Shrimp	<i>Penaeus monodon</i>	Mass seed production and rearing protocol developed and fine-tuned, Coast-wide commercial farming
Giant Mud Crab	<i>Scylla serrata</i>	Only fattening techniques in small semi-saline ponds and floating cages set in the coastal rivers developed



CONCLUSION AND RECOMMENDATIONS





4. CONCLUSION AND RECOMMENDATIONS

The lives of Bangladeshis centre around and depend upon fish, shellfish and water. The country is a transitional zone of flora and fauna, because of its geographical settings and climatic characteristics. It is natural that the water resources of the existing extent and magnitude should harbour and support populations of a large variety of aquatic invertebrate and vertebrate taxa. Bangladesh's water bodies are known to be the habitat of numerous prawns, shrimps, crabs, lobsters and zooplanktons. The number of crustacean species, however, is declining at an alarming rate with some species, in recent years, having become threatened due to a number of reasons. Many species are already in crisis and despite mere conservation initiatives it may already be too late to save them from extinction. Sadly, most Bangladeshis are oblivious to the diversity of crustacean species that inhabit the innumerable waterbodies – how sad it is to think that a significant proportion of these splendid, vibrantly colored shellfish with diversified sizes and shapes could be lost forever – their names unknown, their beauty and value never fully appreciated.

This section provides an overview of the main types of actions that can be applied to the conservation of the crustaceans of Bangladesh, with a focus on those at greatest risk of extinction. It is mostly based on information on conservation measures required or in place for the crustaceans, collected through the Red List assessment process.

4.1. General Recommendations

Presently, 9.93% of crustaceans are considered threatened in Bangladesh. In addition, the extremely high number of Data

Deficient (DD) species (56%) could eventually increase the percentage of threatened species to massively high - 65.96% (if all DD species are considered threatened) in Bangladesh. The threatened and Data Deficient species are crabs, horseshoe crab, lobster, mantis shrimp, zooplanktons and a number of shrimps and prawns – many are either heavily exploited or under intense pressure from habitat destruction and a number of anthropogenic and natural activities.

The most severe threat to Bangladesh's crustaceans is the over-exploitation of target and non-target species coupled with habitat loss, pollution and a few other manmade activities. Hence, improving the conservation status of crustaceans and preventing future declines in Bangladesh must entail enhanced efforts and dedication from all stakeholders both in Bangladesh and in the region. Below, a series of recommendations are proposed to strengthen the long-term survival of shellfishes of Bangladesh –

- Use the national and global red list of crustaceans to inform revisions and implementation of relevant national and regional rules, acts and legislations to improve the status of threatened species and to improve the knowledge of Data Deficient ones.
- Continue and if necessary, plan and execute regional crustacean conservation initiatives and management of commercially shared stocks of exploited species, particularly in the transboundary rivers, the Sundarbans and in Bay of Bengal.
- Take urgent measures to reduce target and non-target catches of species assessed

as threatened, to enact measures to ensure sustainable management of species threatened by exploitation particularly for giant mud crab and post larvae of giant freshwater prawn and marine tiger shrimp and to set and enforce science-based measures and long-term management plans (spatial and seasonal ban and setting up of permanent sanctuary at strategic locations linked with the provision of incentives for fishers in the ban period) for all commercial species, especially those fisheries that target or affect species assessed as threatened based on exploitation.

- Ensure compliance with the requirements under the National Fisheries Policy to apply the precautionary approach by harvesting species at levels to ensure Maximum Sustainable Yield (MSY) for all crustacean fishery, especially for mud crab, mother shrimp/prawn and low value crabs and shrimps used for drying
- Ensure compliance with the requirements, under the National Fisheries Policy to apply the ecosystem-based and community based management of fisheries.
- Improve collection of catch-dependent data of commercial crustacean fisheries, in particular data on catch composition, by-catch, landings, discards and catch per unit effort (CPUE) and where not already in place, establish monitoring schemes for small scale artisanal fisheries.
- Expand and employ crustacean group or species specific data collection and monitoring, particularly for Data Deficient species and monitoring of threatened species that are not currently sampled effectively and ensure that such data are exchanged among research, development and policy level.
- For threatened species and species with taxonomic problems, improved species identification is a must in all data collection exercises. To ensure that, trainings of species identification to data collectors should be provided, in particular for rare prawns, shrimps and crabs, with a view

to ensuring that these species are not confused and properly distinguished/ identified.

- Ensure that all designated Marine Protected Areas (sanctuaries and marine parks) and areas restricted to fisheries provide adequate protection to threatened crustaceans and particularly protect critical habitats for key life cycle stages (e.g., spawning, nursery and feeding grounds).
- Fully adopt and enforce management measures for designated marine and coastal protected areas with the view to reduce pressure on crustacean species and on the habitats that are necessary for their conservation.
- Expand area-based conservation measures to meet and exceed the globally agreed-upon Aichi Target 11 of 10% coverage of each marine region, by identifying and establishing Stock Recovery areas, as per the National Fisheries Policy provisions, to protect spawning grounds and concentration of adult crustacean assessed particularly as threatened.
- Conduct basic biological research for riverine, coastal, near-sea and deep-sea Data Deficient species, especially those that are or have been commercially exploited (e.g., lobster, small crustaceans – krill).

4.1.1. Conservation Measures Collected through the Red List Assessment Process

Research action

Conservation actions need to be tailored to the specific scenario affecting a particular taxon. It is therefore imperative if supported by adequate knowledge-base on the species (taxonomy, biology and ecology, population numbers and trends, range and habitat status), on the threats affecting the species and the most effective actions to mitigate the threats. Almost all the Data Deficient species already assessed by the Red List still require substantial improvement in the knowledge base to define its right status and to support the effective conservation action. Hence, the biology, population dynamics and

stock assessment topped the priority list of researchable issue for most of the threatened and Data Deficient crustacean. Second list of categories included taxonomy, ecology and ecosystem, threat status particularly effect of different natural and anthropogenic factors on the biodiversity of a particular taxon, feeding, spawning and recruitment behaviors, natural and fishing mortality, people's attitude, extent of occurrence, regional distribution range, water quality in the habitats and local, national and transboundary trade.

Habitat protection

According to the assessors, for almost all the crustacean, habitat should be protected and properly managed scientifically. Pollutants need to be stopped from entering to the key habitats of the crustacean. Preservation of mangrove forests, sandy and muddy shore habitat and coastal sea grass meadows needed to protect as these are the key habitat for a number of crustaceans. Dead empty shell should not be collected and should be left as these are to enhance the hermit crab population on the rooted mangrove floor. Establishing sanctuary for species like horseshoe crabs should be ensured as they congregate inshore seasonally to spawn, which makes them especially vulnerable to exploitation.

Fishing regulation

Overexploitation must be controlled aided by national legislation. Fishing regulations should be strictly applied to protect the post larvae, juvenile and brood of the threatened and data deficient crustaceans. There must be zero tolerance to the fishing by detrimental/ destructive gears like gill net, set bag net, poisoning and using explosives. Wild Galda and Bagda post larvae collection should be banned with proper implementation of the existing rules and regulations impose.

Bringing species under captivity

Though many are under threatened categories or Data Deficient, for almost all the species, assessors suggested not to bring them under captivity, i.e., discouraged domestication.

4.2. Policy Recommendations

Policy-based planning is crucial for providing

the institutional support, human resource and funding and legal framework required to guarantee successful species conservation. In most cases, such planning occurs through the development and implementation of legislation at the national or regional levels, or through international agreements and conventions. Legislations are sometimes directed at the protection of particular species or a group of species such as by regulating their catch, (e.g., Convention for the Regulation of Whaling), their trade (e.g., CITES), or alterations in their habitat (e.g., Ramsar Convention). To date, in the Wildlife Legislation under the Bangladesh Wildlife Act, 2012 (30) Schedule 1, twenty-two crustaceans have been included. Different acts and rules may also promote habitat protection, most noticeably through the creation of protected areas: 241 countries or territories are recognized by the 2004 World Database on Protected Areas as having officially designated protected areas of some type (WDPA Consortium 2004). Legislation may also protect habitat by regulating land use patterns (Bangladesh Jolmohal Policy) and through the regulation of human activities that are frequently the least direct but most destructive causes of species declines (e.g., agricultural, industrial, municipal and shipping pollution).

The role of multilateral environmental agreements has grown during the last decade, as human impacts intensify and span across national boundaries more often. There are now more than 500 international treaties that concern the environment and most countries have ratified key international treaties (although significant gaps remain). These agreements increasingly offer access to global knowledge-base, tools and financial resources and often give conservation partners a stronger mandate domestically (Steiner *et al.* 2003).

Nevertheless, most conservation action takes place at the national level and the national legal framework remains crucial in the effective implementation of the vast majority of conservation programmes. Obviously, legislation is only useful if adequately implemented. Nonetheless, proper implementation of legislation is lacking in most cases in Bangladesh.

Policy-based actions are mostly implemented using a top-down approach but their effectiveness is in many cases hindered by a lack of involvement with the local communities who are the direct users of biodiversity resources and by inadequate funding for their implementation. Without the provision of alternate livelihood options, incentives in the form of cash and kind and skill improving training, most of the management measures turn to be unsustainable and impacts gradually die down as the project/programme ends.

Research outcomes must need to be linked with policy measures. As it is observed globally for other species, genetic stock conservation for both wild and domesticated shellfishes is very important, as the genetic diversity of every species develops through a long evolutionary process over millions of years. Cryogenic techniques can assist in the conservation of biodiversity, to bring back the threatened species to natural environment with restocking programmes, as well as in improving farming production. Cryogenic sperm banks for shellfish need to be established as means of germplasm conservation in Bangladesh. These areas need to be sufficiently embedded when legislation for crustacean conservation is formed or updated.

4.3. Application of Project Outputs

The Red List of Crustacean of Bangladesh is part of a broader initiative aimed at assessing the status of other Bangladeshi faunal groups—butterfly, fish, amphibians, reptiles, birds and mammals. The butterfly and crustaceans are first time included in the Bangladesh Red List assessment. It is hoped that, the Red List will provide the key resources for government, policymakers, donors, resources managers, environmental organizations, NGOs and the other concerned stakeholders on the population and its trend, ecology, habitats, threats and suggested conservation measures for each of the crustaceans.

These data are freely available on the IUCN Red List website (www.iucnredlist.org). This Red List includes many highly exploited prawns, shrimps and crabs that support large commercial and artisanal fisheries. As a

dynamic tool, the Red List presented here will evolve with time as many species will be re-evaluated according to new data, information and situations. The Crustacean Red List of Bangladesh is aimed at stimulating and supporting research, monitoring and conservation action at local, regional and international levels, especially for threatened, Near Threatened and Data Deficient species. Each species assessment lists the major threats affecting the specific crustacean as well as conservation measures in place or needed in future. This will be useful to inform the application of conservation measures for each species. The outputs of this project can be applied to enhance and update or formulate new legislations and to identify key locations for biodiversity and to prioritize species to be included in future research and monitoring initiatives.

4.4. Future Work

This project has mobilized a network of national crustacean experts and has made extensive use of their knowledge and experience coupled with an array of online and grey literature at national and global level. It has assisted greatly from the work and information held by many different individuals and institutes – universities, colleges, research institutes, Department of Fisheries, NGOs and INGOs and a number of international organizations. Obviously there existed huge lack of information as to date unlike fish, amphibian, reptiles, birds and mammals, crustaceans are not that well-researched, thorough-surveyed group and this is the first time, the crustaceans are included in the Red List Assessment. This is the main reason for assessing more than half of the enlisted crustaceans as Data Deficient. There could be information gap as well linked with geographic and taxonomic biases in the quality of data available on the distribution and status of the crustaceans. It is hoped that by presenting this assessment, local, national, regional and international researches will be stimulated to provide new data and information and to improve on the quality of that already given here. There are a number of key challenges in the future need to be properly and adequately addressed. Population of the

threatened and data deficient crustaceans should be monitored very carefully with regular documenting. Data quality need to be much improved ensuring proper dissemination and access by the IUCN so that the information and analyses presented in the Red List can be updated and improved and so conservation actions can be given as solid a scientific basis as possible. If the crustacean assessments are periodically updated, this will enable the changing status of these species to be well-informed at policy level paving the way of species and location-specific legislation and conservation measures.

In conclusion, there are serious concerns surrounding the rapid decline in the condition of crustaceans which have been negatively impacted upon through a series of natural and anthropogenic induced changes. As a

consequence, many Bangladeshi species have become threatened. In recent years, GoB and the donors have placed emphasis on capture fisheries, conservation, management and development of institutional framework and need-based training. All concerned and working for the betterment of the crustacean biodiversity of Bangladesh – the fishers, shrimp/prawn/crab farmers, general people, local leaders, researchers, policy makers, GO and NGO workers should come forward to conserve the precious crustaceans and ecosystem diversity of the country and to enhance their population through effective coordination, long-term programme and sustainable approaches. This is the high time to care for the crustacean biodiversity – both habitat and species – the pride, heritage and livelihood of Bangladesh before they are lost forever.



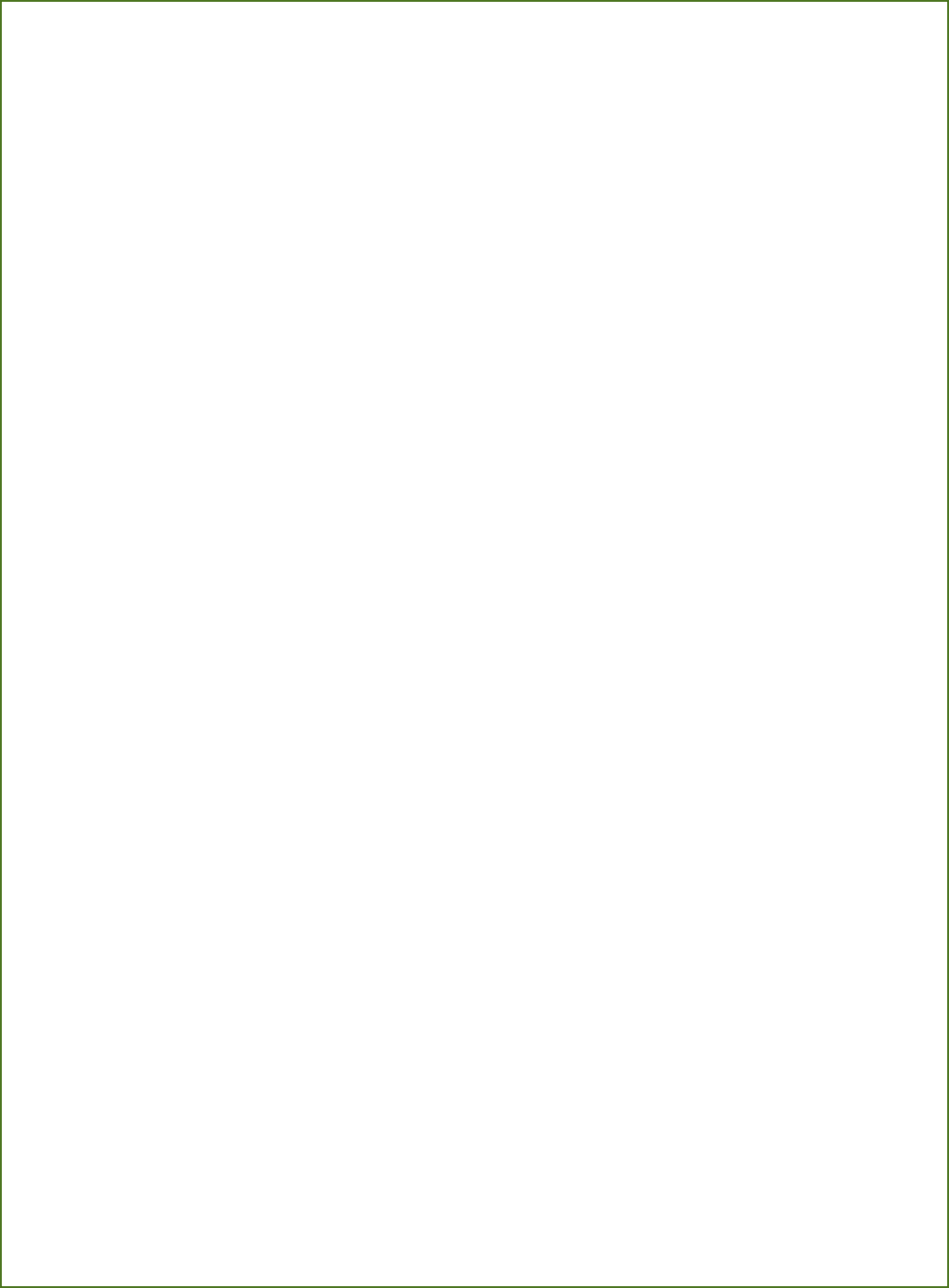
Fishermen chatching shellfish and fish in the River Meghna

© IUCN/ Mohammed Noman



SPECIES PROFILE





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Oratosquilla perpensa

Panulirus versicolor

Species ID: CR0075

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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALINURIDAE

Scientific Name: *Panulirus versicolor* (Latreille, 1804)

English Name: Painted Spiny Lobster

Bengali Name: Nil Kantha Lobster, Chhua Icha

Synonym/s: *Palinurus versicolor* Latreille, 1804

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: EN A2acd ver 3.1

Justification: In the past, *Panulirus versicolor* was commonly available in the entire coast, now very rarely caught off the coast of Cox's Bazar and Saint Martin's Island. Over the last 10 years population reduced substantially (>60%) (pers. obs.). Given the population size reduction, decline in Extent of Occurrence and Area of Occupancy and ever increasing fishing pressure, *P. versicolor* is potentially threatened and hence is assessed as Endangered.

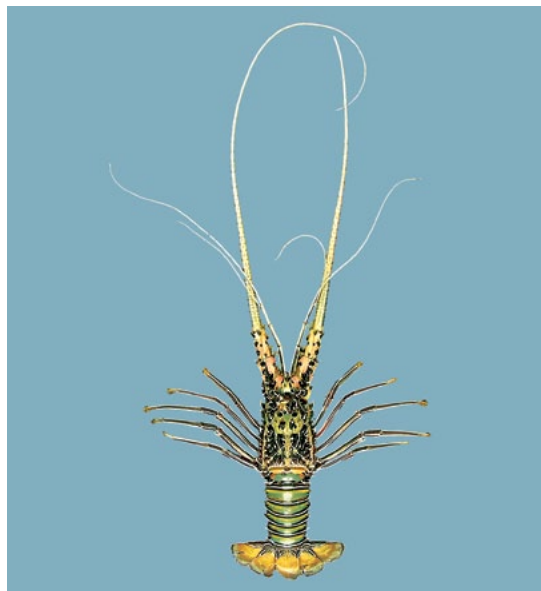
Date Assessed: 20 October 2014

History

Regional Status: This taxon has not been assessed before in Bangladesh.

Geographic Range

Global: The species occurs in Indian Ocean (east coast of Africa and the Red Sea) east to Japan, Micronesia, Melanesia, Polynesia, and Northern Australia (Holthuis 1991).



Panulirus versicolor © 2016 Guido & Philippe Poppe - www.conchology.be

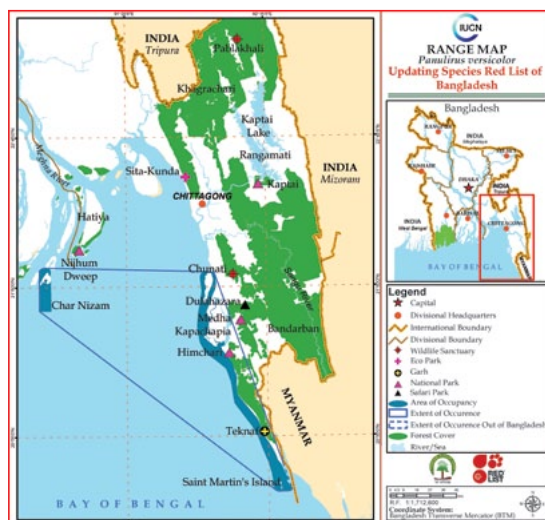
Bangladesh: It is found in Cox's Bazar and Saint Martin's Island and a few other off-shore islands.

EOO: 11,929 km²

AOO: 1,282 km²

Habitat and Ecology

This species is found in areas of coral reef, most often on the seaward edge of reef plateaus, where it utilizes the reef and rocks for shelter. It is found in shallow waters, to a maximum depth of 15 m (Holthuis 1991). It prefers colourful corals, occasionally sandstone reefs but invariably in association with coral heads. It avoids surfzone and seeks sheltered regions of reef at depths from 3 to 20 m.



Assessor: Mostafa Ali Reza Hossain

Oratosquilla perpensa

Species ID: CR0113

ENDANGERED

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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	STOMATOPODA	SQUILLIDAE

Scientific Name: *Oratosquilla perpensa* (Kemp, 1911)

English Name: Common Squillid Mantis Shrimp

Bengali Name: Not Known

Synonym/s: Not Known

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: EN A2acd ver 3.1

Justification: Once observed in the entire coast of Bangladesh, *Oratosquilla perpensa* is now rarely caught off the coast of Cox's Bazar and Dublar Char and also recorded from the Pasur River. Over the last 10 years, population reduced substantially (>60%) (pers. obs). Though not used for human consumption in Bangladesh, in recent years, fishing pressure on *O. perpensa* has been increased because of increasing demand as raw material for the poultry and fish meal. Given the population size reduction and Area of Occurrence and increasing fishing pressure, *O. perpensa* is potentially threatened and hence is assessed as Endangered.

Date Assessed: 15 January 2015

History

Regional Status: *Oratosquilla perpensa* has never been assessed in Bangladesh or at global level.

Geographic Range

Global: *Oratosquilla perpensa* is distributed in Myanmar



Oratosquilla perpensa

© Mostafa A R Hossain

to Japan and Taiwan and Indonesia of Indo-West Pacific region (Carpenter and Niem 1998, Manning 1995, Liu and Wang 1999).

Bangladesh: *Oratosquilla perpensa* is found in Dublar Char (Bernacsek 2001), Cox's Bazar and Dublar Char (pers. obs. 2003, 2005, 2014), Passur River and Sundarban (Gain and Das 2014).

EOO: 40,993 km²

AOO: 6,593 km²

Habitat and Ecology

Oratosquilla perpensa is a benthic crustacean lives in the sandy and muddy shore to 100 m depth. This demersal mantis shrimp is usually taken in trawls.



Assessor: Mostafa Ali Reza Hossain

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Charybdis feriata

Panulirus homarus

Species ID: CR0072

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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALINURIDAE

Scientific Name: *Panulirus homarus* (Linnaeus, 1758)

English Name: Scalloped Spiny Lobster

Bengali Name: None

Synonym/s: *Cancer homarus* Linnaeus, 1758

Panilurus dasyopus H. Milne Edwards, 1837

Palinurus burgeri de Haan, 1841

Palinurus dasyopus H. Milne Edwards, 1937

Taxonomic Notes: There are three sub-species: *Panulirus homarus* is available throughout the range; *P. homarus megasculpta* is found in the northern Arabian Sea; and *P. homarus rubellus* is seen in the southern East Africa, from Mozambique to Natal and southeast Madagascar (Holthuis 1991).

Assessment Information

Red List Category & Criteria: VU B1ab (iii,iv) ver 3.1

Justification: In the past, *Panulirus homarus* was available in the entire coast. Now it is occasionally found off the coast of Cox's Bazar, Teknaf and the Saint Martin's Islands. Given the population size reduction, decline in Area of Occupancy and Extent of Occurrence, presence in only three locations with the later being less than 20,000 km², decline in habitat quality due to increased pollution and ever increasing fishing pressure due to low supply and high demand and market price, the species is potentially threatened and hence is assessed as Vulnerable.

Date Assessed: 20 October 2014

History

Regional Status: This species was not assessed before in Bangladesh.



Panulirus homarus © 2016 Guido & Philippe Poppe - www.conchology.be

Geographic Range

Global: This species has a broad geographic range extending from East Africa to Japan including Australia, Indonesia, Marquesas Archipelago and New Caledonia. Native to Australia, Bangladesh, French Polynesia, India, Indonesia, Japan, Kenya, Madagascar, Mozambique, New Caledonia, Somalia, South Africa, Taiwan and Tanzania (Holthuis 1991).

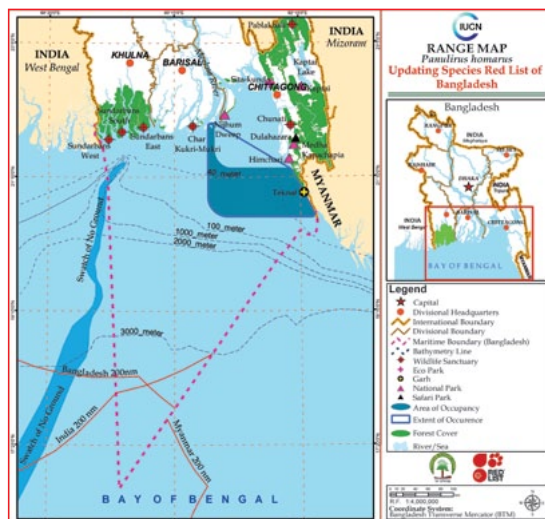
Bangladesh: *Panulirus homarus* is found in the coast of Cox's Bazar, Teknaf and Saint Martin's Islands.

EEO: 16,428 km²

AOO: 12,245 km²

Habitat and Ecology

Panulirus homarus is commonly found in shallow marine waters at less than 15 m depth, although it can be found to depths of up to 90 m. It usually occurs at a salinity range of 33-36 ppt.



Panulirus ornatus

Species ID: CR0073

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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALINURIDAE

Scientific Name: *Panulirus ornatus* (Fabricius, 1798)

English Name: Ornate Spiny Lobster

Bengali Name: Chhua Icha

Synonym/s: *Palinurus ornatus* Fabricius, 1798

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: VU A2acd ver 3.1

Justification: In the past, *Panulirus ornatus* was available in the entire coast of Bangladesh. Now, it is occasionally caught off the coast of Cox's Bazar and Saint Martin's Island. Over the last 10 years, population reduced substantially (>30%) (pers. obs.). Given the population size reduction, decline in Area of Occupancy and Extent of Occurrence and current fishing pressure due to high market demand and price, the species is potentially threatened and hence it is assessed as Vulnerable.

Date Assessed: 20 October 2014

History

Regional Status: This taxon has not been assessed before in Bangladesh.

Geographic Range

Global: The species is native to marine and coastal waters of Australia, Bangladesh, Djibouti, Egypt, Eritrea, Fiji, Japan, Kenya, Mozambique, New Caledonia, Papua New



Panulirus ornatus

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Guinea, Saudi Arabia, Solomon Islands, Somalia, South Africa, Tanzania and Yemen (Holthuis 1991).

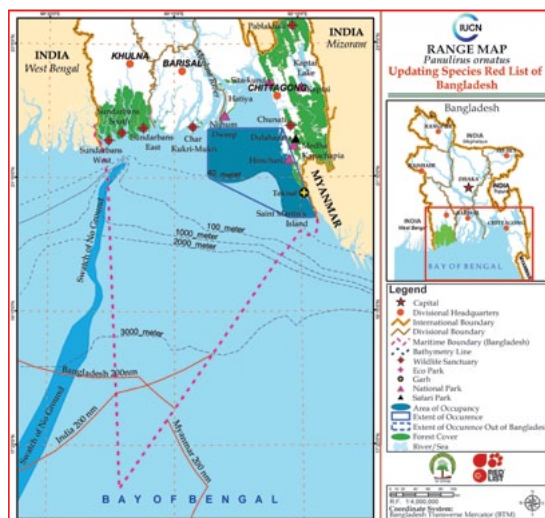
Bangladesh: The species was observed off the coast of Cox's Bazar and Saint Martin's Island.

EOO: 16,397 km²

AOO: 12,105 km²

Habitat and Ecology

Panulirus ornatus inhabits slightly turbid coastal waters, sandy and muddy substrates, rocky and coral reefs. The species commonly lives to depths of 8 m, though there are a few records documenting it to 50 m (Holthuis 1991). Habitat is in calm areas of coral and rocky reefs or reef slopes, sometimes also found on muddy substrate in river mouths with fairly turbid water. Normally it avoids surfzone but juveniles aggregate on sandstone reefs covered by the seaweed and tiny specimens aggregate in seagrass beds.



Assessor: Mostafa Ali Reza Hossain

Panulirus polyphagus

Species ID: CR0074

VULNERABLE
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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALINURIDAE

Scientific Name: *Panulirus polyphagus* Herbst, 1793

English Name: Mud Spiny Lobster

Bengali Name: Chhua Ichha, Kanta Lobster

Synonym/s: *Cancer polyphagus* Herbst, 1793

Palinurus fasciatus Fabricius, 1798

Panulirus orientalis Doflein, 1900

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: VU 2acd ver 3.1

Justification: *Panulirus polyphagus* was abundant in the Bangladesh coast, presently caught now and then off the coast of Cox's Bazar and Saint Martin's Islands. Over the last 10 years population reduced substantially (>40%) (pers.obs). Given the population size reduction, decline in Extent of Occurrence and Area of Occupancy and current fishing pressure due to lucrative marketing opportunity, the species is potentially threatened and hence is assessed as Vulnerable.

Date Assessed: 20 October 2014

History

Regional Status: This taxon has not been assessed before in Bangladesh.

Geographic Range

Global: This species has a broad geographic range



Panulirus polyphagus

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from Indian sub-continent to Viet Nam, the Philippines, Indonesia, northwest Australia, and the Gulf of Papua (Holthuis 1991).

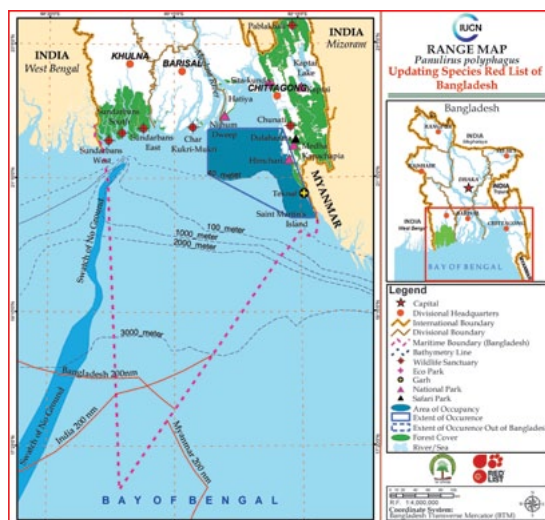
Bangladesh: The lobster is available in Cox's Bazar, Saint Martin's Islands, Dublar Char (40 m), etc.

EOO: 15,891 km²

AOO: 11,502 km²

Habitat and Ecology

This species is the commonest in the coastal waters on muddy and rocky substrates to a depth of 40 m, although it is occasionally seen at 90 m and is often found near river mouths (Holthuis 1991). It is available in reef areas at depths of usually less than 16 m (mostly between 4 and 12 m) in clear or sometimes turbid water with strong currents, often on seaward edges of the reef plateau. It is nocturnal and hides in crevices during the daytime with only the white antennae visible.



Assessor: Mostafa Ali Reza Hossain

Matuta lunaris

Species ID: CR0084

VULNERABLE

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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	MATUTIDAE

Scientific Name: *Matuta lunaris* (Forsskål, 1775)

English Name: Common Moon Crab

Bengali Name: Lojjaboti Kankra, Chandra Kankra

Synonym/s: *Matuta victor* Fabricius, 1781

Matuta crebripunctata Miers, 1817

Matuta lesuerii Leach, 1817

Matuta peronii Leach, 1817

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: VU B1ab(i,ii) ver 3.1

Justification: *Matuta lunaris* is listed as Vulnerable, because though it is presently caught off the coast of Cox's Bazar, Moheshkhali, Kutubdia, Sonadia and St. Martin's Islands, the Extent of Occurrence is less than 20,000 km² followed by Area of Occupancy as 2,000 km². Number of locations where the crabs presently found is less than 10 and there is continuing decline in the Extent of Occurrence and degradation in the quality of its habitat.

Date Assessed: 20 November 2014

History

Regional Status: This taxon has not been assessed before in Bangladesh.

Geographic Range

Global: *Matuta lunaris* is found in Indo-West Pacific: Southeast Asia to Philippines, New Caledonia, Fiji and New Hebrides (Carpenter & Niem 1998).



Matuta lunaris

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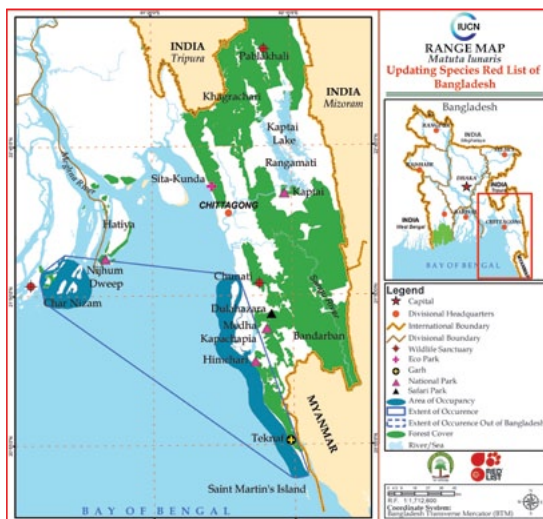
Bangladesh: It is found in intertidal zones of Cox's Bazar, Moheshkhali, Kutubdia, Sonadia and Saint Martin's Island (Shafi and Quddus, 1982, Khan 2005).

EEO: 14,074 km²

AOO: 2,765 km²

Habitat and Ecology

Matuta lunaris prefers sandy areas, from the intertidal zone to depths of about 20 m.



Assessor: Mostafa Ali Reza Hossain

Charybdis feriata

Species ID: CR0007

VULNERABLE
<VU>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PORTUNIDAE

Scientific Name: *Charybdis feriata* (Linnaeus, 1758)

English Name: Crucifix Crab, Coral Crab

Bengali Name: Shil Kankra, Shila Kankra

Synonym/s: *Cancer feriata* Linnaeus, 1758

Cancer sexdentatus Herbst, 1783

Cancer crucifer Fabricius, 1792

Cancer cruciata Herbst, 1794

Portunus crucifer Fabricius, 1798

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: VU B1ab(i,ii) ver 3.1

Justification: *Charybdis feriata* is listed as Vulnerable because its Extent of Occurrence is less than 20,000 km², its distribution is fragmented, and there is continuing decline in the Extent of Occurrence and due to degraded quality of its habitat.

Date Assessed: 10 June 2014

History

Regional Status: *Charybdis feriata* has never been assessed in Bangladesh.

Geographic Range

Global: *Charybdis feriata* is widely distributed throughout the Indo-Pacific regions from Japan and China to Australia in East, to Eastern and Southern Africa, Gulf of Oman and



Charybdis feriata

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Arabian Gulf in the West, encompassing India, Indonesia, Pakistan and Sri Lanka (Wee and Ng 1995, Carpenter and Niern, 1998).

Bangladesh: *Charybdis feriata* is found in the Saint Martin's and Sonadia Islands.

EOO: 6,931 km²

AOO: 71 km²

Habitat and Ecology

Charybdis feriata is a free swimming carnivore and feeds on algae, crustaceans, mollusks, annelids and small fishes. The species inhabits in the sandy shore during its young stage but the adult prefers sandy-muddy substrates. It usually occurs sublittorally on muddy and sandy bottoms, as well as on rocky and stony coasts including coral reef flats at depths of approximately 10–60 m.



Assessor: Md. Sirajul Islam

Charybdis natator

Species ID: CR0009

VULNERABLE
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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PORTUNIDAE

Scientific Name: *Charybdis natator* (Herbst, 1794)

English Name: Ridged Swimming Crab, Swimming Crab

Bengali Name: Lal Shantaru Kankra

Synonym/s: *Cancer natator* Herbst, 1794

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: VU B1ab (i,ii) ver 3.1

Justification: *Charybdis natator* is only known from the Moheshkhali, Sonadia and the Saint Martin's Islands. No information exists on the population size of the species or its potential wider occurrence in the region. Its distribution is fragmented, and there is continuing decline in the Extent of Occurrence. As such the species is considered as Vulnerable.

Date Assessed: 10 June 2014

History

Regional Status: *Charybdis natator* was not assessed in Bangladesh.

Geographic Range

Global: *Charybdis natator* is widely distributed in China, Indonesia, Japan, Malaysia, Philippines, Singapore Taiwan, Thailand, Westward to India, Madagascar and East coast of Africa and Australia (Wee and Ng 1995, Ng 1998).



Charybdis natator

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Bangladesh: In Bangladesh, *Charybdis natator* is found only in the Moheshkhali, Sonadia and the Saint Martin's Islands.

EOO: 5,575 km²

AOO: 232 km²

Habitat and Ecology

Charybdis natator is a free swimming carnivore and feeds on algae, crustaceans, mollusks, annelids etc. The species is found in sand and pebbles bottom zones and sometimes in rocks or near reefs, ranges from depths of 5 to 40 m.



Assessor: Md. Sirajul Islam

Charybdis variegata

Species ID: CR0010

VULNERABLE
<VU>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PORTUNIDAE

Scientific Name: *Charybdis variegata* (Fabricius, 1798)

English Name: Swimming Crab

Bengali Name: Chitrito Shantaru Kankra

Synonym/s: *Charybdis variegata* Sakai, 1976

Portunus variegata Fabricius, 1798

Taxonomic Notes: None

Assessment Information:

Red List Category & Criteria: VU B1ab(i,ii) ver 3.1

Justification: *Charybdis variegata* is only known from the Moheshkhali, Sonadia and the Saint Martin's Islands. No information exists on the population size of the species or its potential wider occurrence in the region. Its distribution is fragmented, and there is continuing decline in the Extent of Occurrence: As such the species is considered Vulnerable.

Date Assessed: 10 June 2014

History

Regional Status: *Charybdis variegata* was not assessed in Bangladesh.

Geographic Range

Global: Swimming Crab (*Charybdis variegata*) is widely distributed in Indo-West Pacific including India, Malay Archipelago, Persian Gulf, Red sea, Japan and Hong Kong (Wee and Ng 1995).



Charybdis variegata

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Bangladesh: *Charybdis variegata* is found in the coastal waters of the Moheshkhali, Sonadia and the Saint Martin's Islands of Bangladesh.

EOO: 5,575 km²

AOO: 232 km²

Habitat and Ecology

Charybdis variegata is a free swimming carnivore and generally feeds on algae, crustaceans, mollusks, annelids and other small invertebrates. This species is found in soft bottom areas, under rocks and in corals from the intertidal zone to 30-51 m depth.



Assessor: Md. Sirajul Islam

Portunus sanguinolentus

Species ID: CR0012

VULNERABLE
<VU>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PORTUNIDAE

Scientific Name: *Portunus sanguinolentus* (Herbst, 1783)

English Name: Three Spot Swimming Crab, Red-Spot Swimming Crab

Bengali Name: Teen Fota Kankra

Synonym/s: *Cancer sanguinolentus* Herbst, 1783

Neptunus sanguinolentus De Haan, 1850

Neptunus sanguinolentus Alcock, 1899

Portunus sanguinolentus Sakai, 1976

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: VU B1ab (i,ii) ver 3.1

Justification: *Portunus sanguinolentus* occurs only in sandy-muddy coastal areas of some limited offshore islands of Bangladesh. Current population size of the species is not known. Based on above features, the species is assessed as Vulnerable.

Date Assessed: 10 June 2014

History

Regional Status: *Portunus sanguinolentus* has not been assessed in Bangladesh.

Geographic Range

Global: *Portunus sanguinolentus* is distributed from the East coast of Africa to Japan, Australia and Hawaii including Indian and Pacific Ocean (Carpenter and Niemi 1998).



Portunus sanguinolentus

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Bangladesh: Three Spot Swimming Crab, *Portunus sanguinolentus* is found in the coastal waters of offshore islands especially in the Kutubdia Channel, Moheskhal, Sonadia and Saint Martin's Islands of Bangladesh.

EOO: 6,439 km²

AOO: 314 km²

Habitat and Ecology

Three Spot Swimming Crab is a carnivorous coastal water marine crab, feeds on small fishes and various invertebrates. It has aggressive nature, the males often fight to gain access to the females. This crab is normally found in the sub-littoral muddy-sandy areas of estuarine and inshore waters along the coasts. Adult, especially juveniles are also found in intertidal zone to a depth of 30 m.



Assessor: Md. Sirajul Islam

Carcinoscorpius rotundicauda

Species ID: CR0088

VULNERABLE
<VU>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	XIPHOSURA	LIMULIDAE

Scientific Name: *Carcinoscorpius rotundicauda* (Latreille, 1802)

English Name: Mangrove Horseshoe Crab, Sundarban Mangrove Horseshoe Crab.

Bengali Name: Raj Kakra, Sagar Kakra

Synonym/s: *Limulus rotundicauda* Latreille, 1802

Taxonomic Notes: *Carcinoscorpius rotundicauda* is found in the Sundarbans mangrove areas are quite different in color and morphometric from same species found in eastern coast of Bangladesh. Therefore, Sundarban king crab is considered as subspecies of *C. rotundicauda* (Itow *et al.* 2004).

Assessment Information:

Red List Category & Criteria: VU A2 cd ver 3.1

Justification: The 'living fossil' Mangrove Horseshoe Crab, *Carcinoscorpius rotundicauda* is distributed in the eastern and western coast of Bangladesh. The biology, ecology and breeding patterns of *C. rotundicauda* has been fairly well documented (Sekiguchi *et al.* 1978; Chowdhury and Hafizuddin 1980, Itow *et al.* 2004). However, no information is available on the population size, stocks or level of exploitation of this species from Bangladesh waters. Personal observations inferred that its population declined about 30% over the last 25 years due to over harvesting as well as environmental degradation causing habitat destruction like loss of sandy beaches need for spawning and development of malformed embryos due to exposure of coastal water pollutants like heavy metals and agrochemicals. Therefore, the species has been assessed as Vulnerable.

Date Assessed: 20 November 2014



Carcinoscorpius rotundicauda

© Md. Enamul Hoq

History

Regional Status: This taxon has not been assessed before in Bangladesh.

Geographic Range

Global: The species is found in Bangladesh, India, Indonesia, Malaysia, Philippines, Singapore and Thailand (World Conservation Monitoring Centre 1996).

Bangladesh: The Mangrove Horseshoe Crab is available in the eastern coast of Bangladesh (Cox's Bazar, Saint Martin's, Sondia, Moheshkhali, Kutobdia Islands) and western coast of Bangladesh (Sundarbans) (Ahmed 2009).

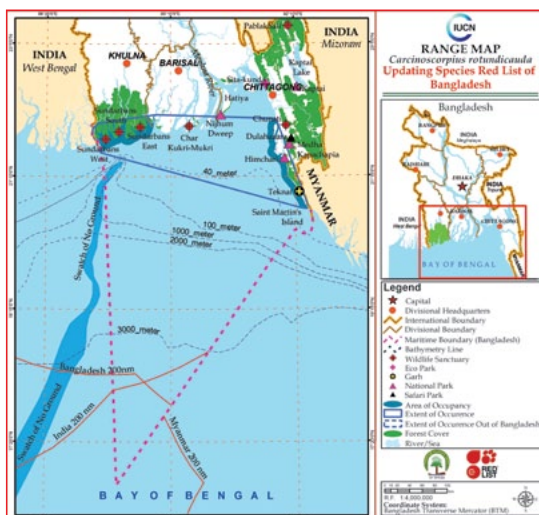
EOO: 31,057 km²

AOO: 3,820 km²

Habitat and Ecology

The Mangrove Horseshoe Crab is benthopelagic, spending most of its life close to or at the bottom of brackish, swampy water habitat, such as mangroves. It is a selective benthic feeder consuming mainly on insect larvae, small fish, oligochaetes, small crabs and thin-shelled bivalves *Carcinoscorpius rotundicauda* from Bangladesh waters are toxic and their toxic principle is tetrodotoxin (TTX) (Tanu and Noguchi 1999). The species lives in coastal region in shallow waters with soft, sandy bottoms or extensive mud flats. It is nocturnal.

Assessor: Md. Sagir Ahmed



Ceriodaphnia reticulata

Species ID: CR0126



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	BRANCHIOPODA	DIPLOSTRACA	DAPHNIIDAE

Scientific Name: *Ceriodaphnia reticulata* (Jurine, 1820)

English Name: Water Flea

Bengali Name: Not known

Synonym/s: Not known

Taxonomic Notes: None

Assessment Information:

Red List Category & Criteria: VU B2ab (i,ii,iii,iv) ver 3.1

Justification: Although the Extent of Occurrence of *Ceriodaphnia reticulata* is higher than the threshold level, it meets Vulnerable Category as its Area of Occupancy is much lower. The number of locations of its occurrences is less than ten and furthermore, there is a continuing decline in the Extent of Occurrence, Area of Occupancy, water quality and habitat due to anthropogenic activities. There is no available data on its population. Therefore, *Ceriodaphnia reticulata* is considered as Vulnerable based on criteria B.

Date Assessed: 19 March 2015

History

Regional Status: *Ceriodaphnia reticulata* was not assessed in Bangladesh.

Geographic Range

Global: *Ceriodaphnia reticulata* is found all over the world except Australia (Smirnov *et al.* 1995, Azémar *et al.* 2002, Webber *et al.* 2010).



Ceriodaphnia reticulata

© Md. Moniruzzaman

Bangladesh: In Bangladesh, *Ceriodaphnia reticulata* is reported from different ponds of Dhaka city, Buriganga River (Khan *et al.* 1978), Kaptai Lake (Hafizuddin and Islam 1995) and Sona Dhigi of Rajshahi (Naz and Najia 2008). The genus of this species (*Ceriodaphnia reticulata*) is reported from Posna Beel, Tangail (Alam *et al.* 2007).

EOO: 23,500 km²

AOO: 569 km²

Habitat and Ecology

Ceriodaphnia reticulata reproduces mostly by parthenogenesis. This zooplankton has a wide range of habitat and reported from seas, estuaries, rivers, lakes, ponds and even from upland waters.



Assessor: Mohammad Arshad-ul-Alam

Associate Assessor/s: Mohammad Ali Azadi

Diaptomus gracilis

Species ID: CR0131

VULNERABLE
<VU>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MAXILLOPODA	CALANOIDA	DIAPTOMIDAE

Scientific Name: *Diaptomus gracilis* (G. O. Sars, 1862)

English Name: Calanoid Copepod

Bengali Name: Not known

Synonym/s: *Eudiaptomus gracilis* (Sars G.O., 1862)

Diaptomus westwoodii Lubbock, 1864

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: VU B1B2aciv ver 3.1

Justification: During 2008-10, *Diaptomus gracilis* was recorded from three locations and identified upto species level. *Diaptomus* is recorded in Bangladesh during 2001-11 from five more locations but not identified up to species level. Given the Area of Occupancy is 884.94 km² and Extent of Occurrence is 14799.20 km² and extreme fluctuations in number of mature individuals, the species is potentially threatened and hence is assessed as Vulnerable.

Date Assessed: 15 March 2015

History

Regional Status: *Diaptomus gracilis* has not been assessed before in Bangladesh.

Geographic Range

Global: *Diaptomus gracilis* is available globally and one of the most widely distributed in Europe, America, Australia and Africa (Kiefer 1968, Gophen 1978, Ewald 1981, Stenson *et al.* 1985, Rossetti *et al.* 1996).



Diaptomus gracilis

© Md. Moniruzzaman

Bangladesh: Though, Genus level identification was done from Rajshahi University Campus (Rahman and Hussain 2008), Bagherhat Town, Bagherhat (Ghosh *et al.* 2011), Trimohini Beel, Rajshahi (Islam and Chowdhury 2013), and Ghkukshi Beel, Naogaon (Hussain *et al.* 2013), the species level identification of *Diaptomus gracilis* was done from only three locations - Beel Koshba, Naogaon (Islam *et al.* 2010) and Mathbaria, Pirozpur and Bakerganj, Barisal (Mozumder *et al.* 2012).

EOO: 14,799 km²

AOO: 885 km²

Habitat and Ecology

Diaptomus gracilis is typically found in large lakes, but has also been frequently detected in ponds and small bodies of water; also commonly observed in mesotrophic and eutrophic environments and less frequently in acidified waters. It has occasionally been found in slow-flowing rivers as well. It is a planktonic species. Even though it is essentially herbivorous, it can survive for long periods of time feeding on bacteria and organic detritus. It is a perennial species with egg production throughout the year. It cannot produce resting eggs and thus has a limited dispersion capacity.

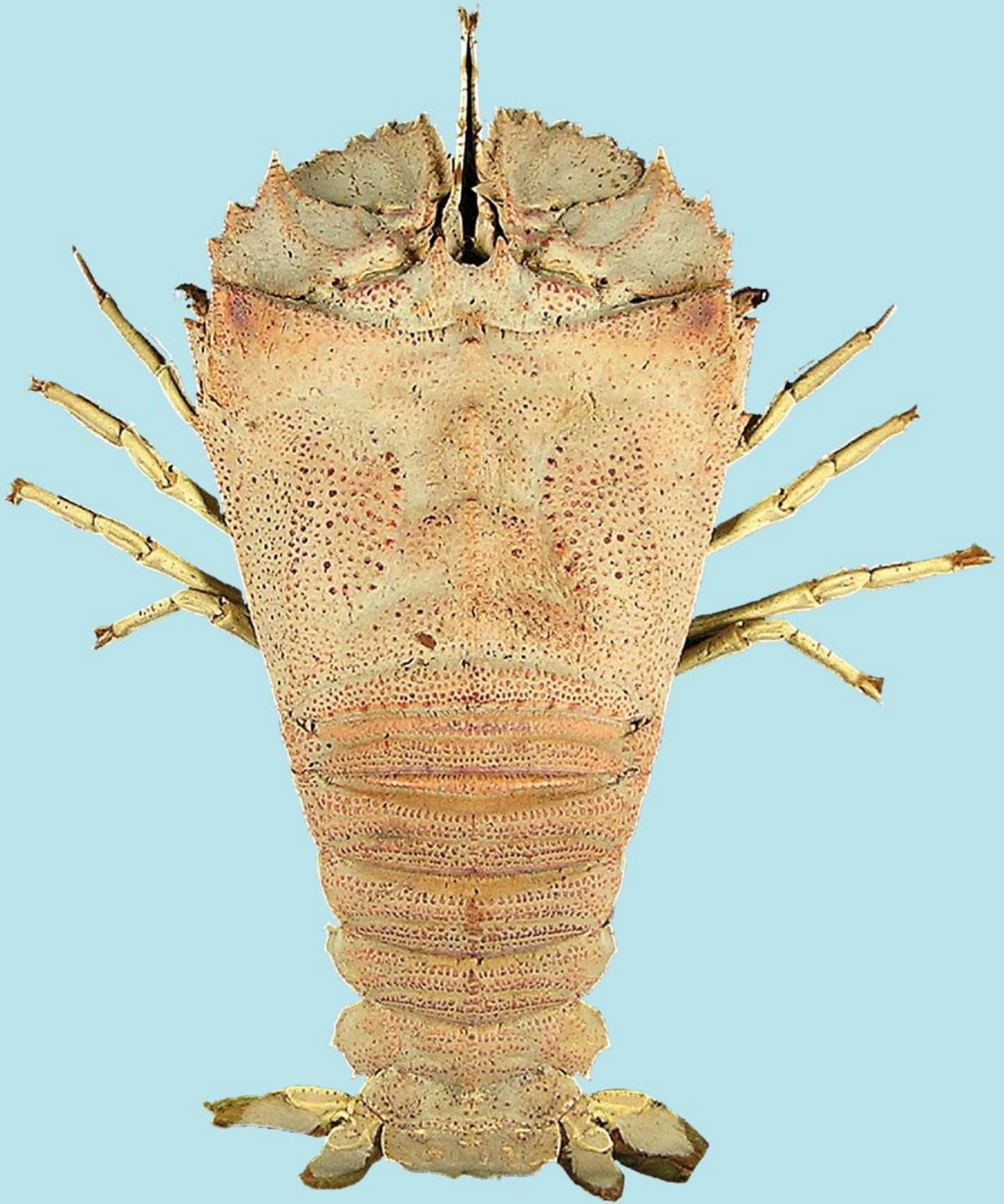
Assessor: Mostafa Ali Reza Hossain







NEAR THREATENED
< NT >



Thenus orientalis

Species ID: CR0076

NEAR
THREATENED
<NT>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	SCYLLARIDAE

Scientific Name: *Thenus orientalis* (Lund, 1793)

English Name: Flathead Lobster, Sand Lobster

Bengali Name: Belsanasa, Belchanasa

Synonym/s: *Scyllarus orientalis* Lund, 1793

Scyllibacus orientalis Desjardins, 1831

Taxonomic Notes: None

Assessment Information:

Red List Category & Criteria: Near Threatened (NT) ver 3.1

Justification: Although recorded only in Sundarbans water (Chantarasri 1994), the species is probably occurred in marine waters of Bangladesh. However, at the current time, it is found only infrequently. Its Extent of Occurrence is still above the threshold level of Vulnerable Category. Considering the overall situation, current threat on the availability along with the Extent of Occurrence and Area of Occupancy, *Thenus orientalis* is assessed under the category of Near Threatened.

Date Assessed: 20 October 2014

History

Regional Status: The species has never been assessed in Bangladesh.

Geographic Range

Global: *Thenus orientalis* is distributed in Indo-West Pacific region, ranging from the east coast of Africa to China including the Persian Gulf, southern Japan, the Philippines



Thenus orientalis © 2016 Guido & Philippe Poppe - www.conchology.be

and along the northern coast of Australia from Western Australia to Queensland (Chan *et al.* 2013).

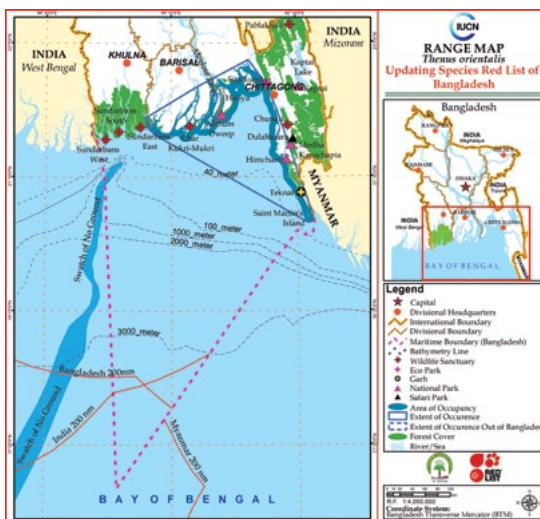
Bangladesh: The species is found in Marine waters of Bay of Bengal.

EOO: 31,237 km²

AOO: 8,344 km²

Habitat and Ecology

Thenus orientalis has a complex and prolonged life cycle, which often involves several planktonic (free floating) larval stages. They exhibit sexual dimorphism and show marked variations in behaviour particularly during the mating and spawning periods (Kizhakudan 2005). *Thenus orientalis* is an inhabitant of open unconsolidated sediments between the coast and adjacent reefs and further beyond. This species prefers soft, muddy beds. It is a nocturnal with predatory feeding habits (Kizhakudan 2007).





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LEAST CONCERN
< LC >



Leptocarpus potamiscus

Species ID: CR0022



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALAEMONIDAE

Scientific Name: *Leptocarpus potamiscus* (Kemp, 1917)
English Name: Bombay Prawn, Bouquet Bombay Prawn
Bengali Name: Lona Chingri
Synonym/s: *Leander potamiscus* Kemp, 1917
Pataemon potamiscus Suvatti, 1937
Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Leptocarpus potamiscus* is abundant in fresh, brackish and marine waters of Bangladesh. The species is likely to be more wide spread than record suggests. In the absence of any known major threat, it is considered to be of Least Concern.

Date Assessed: 26 June 2014

History

Regional Status: *Leptocarpus potamiscus* has not been assessed in Bangladesh.

Geographic Range

Global: *Leptocarpus potamiscus* is native to Bangladesh, China, India, Indonesia, Malaysia, Thailand and Viet Nam (Holthuis 1980, Carpenter and Niem 1998).

Bangladesh: *Leptocarpus potamiscus* is available in brackish and marine waters of Bangladesh, particularly in Patuakhali and in the Sundarbans coast.



Leptocarpus potamiscus

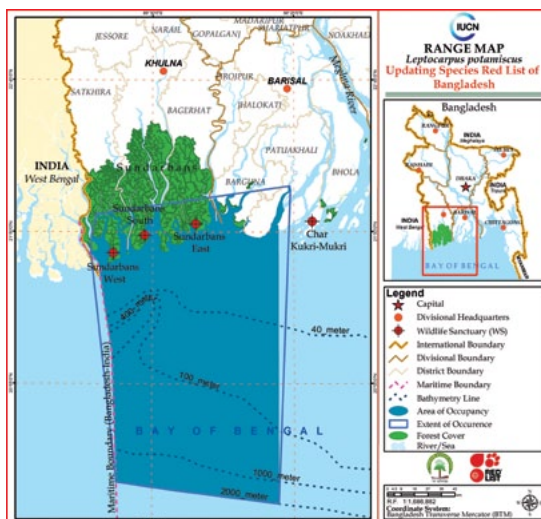
© Md. Ashrafur Islam

EOO: 25,190 km²

AOO: 22,013 km²

Habitat and Ecology

Leptocarpus potamiscus feeds predominantly on decayed and decomposed plant and animal matters. It inhabits both fresh and brackish waters of all kinds.



Assessor: Mohd. Golam Quader Khan

Macrobrachium birmanicum

Species ID: CR0005



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALAEMONIDAE

Scientific Name: *Macrobrachium birmanicum* Schenkel, 1902

English Name: Birma River Prawn

Bengali Name: Ghoda Icha, Tengua Icha, Shul Icha

Synonym/s: None

Taxonomic Notes: Taxonomic confusion between *Macrobrachium birmanicum* and *Macrobrachium malcolmsoni* was resolved and given separate status by Jayachandran (1998).

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Macrobrachium birmanicum* is widely distributed in the different freshwater and tidal rivers of Bangladesh. In view of this wide distribution as well as the lack of major threats, the species is considered as Least Concern.

Date Assessed: 25 June 2014

History

Regional Status: *Macrobrachium birmanicum* has not been assessed in Bangladesh.

Geographic Range

Global: Birma River Prawn *Macrobrachium birmanicum* is available in North Indian regions, in the Ganges and river systems of Bangladesh (Jhingran 1997).

Bangladesh: *Macrobrachium birmanicum* is widely available in the rivers of Bangladesh, i.e. Pagla, Halda,



Macrobrachium birmanicum

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Karnaphuli and Sangu Rivers (Haroon *et al.* 1989, Zafar *et al.* 2007, Ahmed and Akther 2008, Azadi and Arshad-ul-Alam 2013, 2014a).

EOO: 84,235 km²

AOO: 3,733 km²

Habitat and Ecology

Macrobrachium birmanicum is a bottom feeding omnivore consuming detritus, aquatic insects etc. It breeds in freshwater. Its habitat includes freshwater and coastal rivers, canals and floodplains.



Assessor: Mohammad Ali Azadi

Associate Assessor/s: Mohammad Arshad-ul-Alam

Macrobrachium dayanus

Species ID: CR0004



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALAEMONIDAE

Scientific Name: *Macrobrachium dayanus* (Henderson, 1893)
English Name: Kaira River Prawn
Bengali Name: Ghoda Icha
Synonym/s: *Palaemon dayanus* Henderson, 1893
Taxonomic Notes: None



Macrobrachium dayanus

© M. Ali Azadi

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Macrobrachium dayanus* is widely distributed and commonly found in River systems of Bangladesh. There is no major threat to this species. The species is therefore listed as Least Concern.

Date Assessed: 25 June 2014

History

Regional Status: Kaira River Prawn has never been assessed in Bangladesh.

Geographic Range

Global: *Macrobrachium dayanus* is distributed in Bangladesh, India, Myanmar and Nepal (Holthuis 1980).

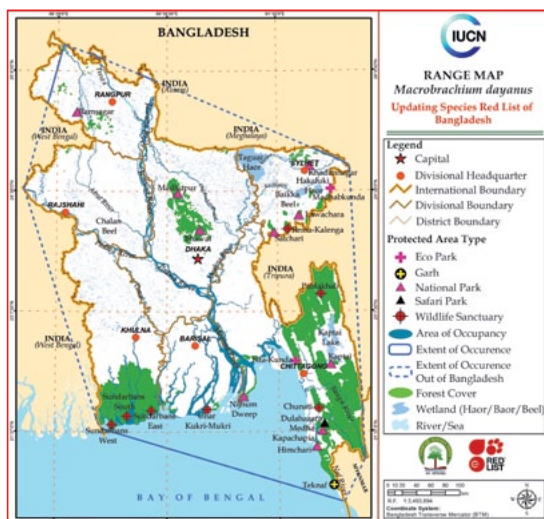
Bangladesh: *Macrobrachium dayanus* is found in freshwater and estuarine rivers, namely Titas, Pagla, Halda, Karnaphuli, Sangu and Chandkhali-Shikalbaha Channel. It is also found in the Muhuri Irrigation Project and surrounding water-bodies (Ahmed 1984, Kibria *et al.* 1979,

Haroon *et al.* 1989, Shahjahan *et al.* 2001, Zafar *et al.* 2007, Ahmed and Akther 2008, Azadi and Arshad-ul-Alam 2013, 2014a, b).

EOO: 1,68,115 km²
AOO: 7,157 km²

Habitat and Ecology

Macrobrachium dayanus is an omnivorous species and feeds mainly on the bottom of waterbodies. It breeds in the freshwater environment. It is found in freshwater to tidal rivers, canals and inundated floodplains.



Assessor: Mohammad Ali Azadi

Associate Assessor/s: Mohammad Arshad-ul-Alam

Macrobrachium dolichodactylus

Species ID: CR0003



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALAEMONIDAE

Scientific Name: *Macrobrachium dolichodactylus* (Hilgendorf, 1878)

English Name: Ghoda River Prawn

Bengali Name: Ghoda Icha

Synonym/s: *Palaemon dolichodactylus* Hilgendorf, 1879

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Macrobrachium dolichodactylus* is common in the river systems of Bangladesh. Due to its large natural range and the absence of any known major threats, the species is considered as Least Concern.

Date Assessed: 25 June 2014

History

Regional Status: Ghoda River Prawn, *Macrobrachium dolichodactylus* has never been assessed in Bangladesh.

Geographic Range

Global: *Macrobrachium dolichodactylus* has wide distribution from Tanzania to South Africa, Madagascar, Southern India and Southern Myanmar and from Pulau Tioman to Malaysia mainland (Holthuis 1980).

Bangladesh: *Macrobrachium dolichodactylus* is available in the rivers Meghna, Naaf, Pagla, Halda, Karnaphuli, Sangu and rivers of Patuakhali as well as in the Muhuri



Macrobrachium dolichodactylus

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Irrigation project and the countries surrounding Bangladesh (Kibria *et al.* 1979, Ahmed 1984, Haroon *et al.* 1989, Hossain *et al.* 2007, Zafar *et al.* 2007, Azadi and Arshd-ul-Alam 2013 and 2014, Ahamed *et al.* 2014).

EOO: 51,693 km²

AOO: 2,433 km²

Habitat and Ecology

Macrobrachium dolichodactylus feeds on benthic decomposing organisms. It breeds in freshwater, spawns more than once during its life time. This prawn is mainly found in freshwater, coastal rivers, canals and floodplains.



Assessor: Mohammad Ali Azadi

Associate Assessor/s: Mohammad Arshad-ul-Alam

Macrobrachium lamarrei

Species ID: CR0058



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALAEMONIDAE

Scientific Name: *Macrobrachium lamarrei* (H. Milne-Edwards, 1837)

English Name: Kuncho River Prawn

Bengali Name: Kuncho Chingri, Gura Chingri, Thenga Icha

Synonym/s: *Palaemon (Eupalaemon) lamarrei* de Man, 1908

Taxonomic Notes: According to Jayachandran (1992), there are two sub species - *Macrobrachium lamarrei lamarrei* (H. Milne-Edwards, 1837) and *Macrobrachium lamarrei lamarroides* (Tiwari, 1952).

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Macrobrachium lamarrei* is clearly widely distributed in the water bodies of Bangladesh and is therefore assessed as Least Concern.

Date Assessed: 9 September 2014

History

Regional Status: This species has not been assessed in Bangladesh.

Geographic Range

Global: The species is available from Indo-west Pacific region, particularly in Bangladesh and India (Holthuis, 1980).

Bangladesh: *Macrobrachium lamarrei* is abundant in the Sundarbans (Chantarasri 1994), Greater Rajshahi (Rashid



Macrobrachium lamarrei

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et al. 2013), Greater Sylhet region (Saifullah *et al.* 2005) and in the River Titas (Ahmed and Akhter 2008).

EOO: 84,238 km²

AOO: 6,291 km²

Habitat and Ecology

Macrobrachium lamarrei feeds voraciously on planktonic organisms, algae, muscles or fish etc. The species is available in freshwater and brackishwater with sandy-muddy bottom. The prawn is more active during night.



Assessor: Mostafa Ali Reza Hossain

Macrobrachium malcolmsonii

Species ID: CR0001



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALAEMONIDAE

Scientific Name: *Macrobrachium malcolmsonii* (H. Milne-Edwards, 1844)

English Name: Moonsoon River Prawn

Bengali Name: Chatka Icha, Tora Icha

Synonym/s: *Palaemon malcolmsonii* H. Milne-Edwards, 1844
Macrobrachium birmanicum Schenkel, 1902
Palaemon choprai birmanicus Schenkel, 1902
Palaemon spinipes birmanicus Schenkel, 1902

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Macrobrachium malcolmsonii* is abundant in the tidal inundated freshwater bodies and tidal rivers of Bangladesh. Due to wide distribution and without any major threats, the species is considered as Least Concern.

Date Assessed: 22 June 2014

History

Regional Status: *Macrobrachium malcolmsonii* was not assessed before in Bangladesh.

Geographic Range

Global: *Macrobrachium malcolmsonii* is available in South Asian countries: Bangladesh, India, Myanmar, Pakistan and Sri Lanka (Johnson 1973, Jayachandran 2001)



Macrobrachium malcolmsonii

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Bangladesh: The Moonsoon River Prawn, *Macrobrachium malcolmsonii* is available in the Rivers Halda, Karnaphuli, Sangu, Chandkhali and Shikalbaha (Azadi and Arshad-ul-Alam 2013, 2014); Tidal inundated Beels, water bodies, and ponds of Bangladesh rivers and estuary (Shafi and Quddus 1982); Muhuri Irrigation project and surrounding region (Haroon *et al.* 1989); Meghna River (Kibria *et al.* 1979), River Titas (Ahmed and Akhter 2008), Jamuna River (Shajahan *et al.* 2001) and Pagla River (Zafar *et al.* 2007) and also in Sundarbans Estuary.

EOO: 1,79,067 km²

AOO: 28,516 km²

Habitat and Ecology

Macrobrachium malcolmsonii is an omnivorous bottom dwelling fresh water prawn, feeds on decomposing plants and animals, small worms, insects and their larvae (Radheshyam 2009). This species is also cannibalistic in nature and may consume other freshly molted prawns. The species is found in the rivers and estuaries, tidal inundated ponds and other water bodies. It breeds during rainy season and the early development takes place in the estuary. This native freshwater river prawn is highly tolerant to environmental fluctuations and resistant to contaminants.

Assessor: Mohammad Ali Azadi

Associate Assessor/s: Mohammad Arshad-ul-Alam



Macrobrachium mirabile

Species ID: CR0006



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALAEMONIDAE

Scientific Name: *Macrobrachium mirabile* (Kemp, 1917)

English Name: Short-leg River Prawn

Bengali Name: Lotia Icha

Synonym/s: *Palaemon mirabilis* Kemp, 1917

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Macrobrachium mirabile* is common in the river systems of Bangladesh. On the basis of wide distribution and in the absence of major threat the species is considered under Least Concern.

Date Assessed: 25 June 2014

History

Regional Status: *Macrobrachium mirabile* has not been assessed in Bangladesh.

Geographic Range

Global: *Macrobrachium mirabile* is found in Indo-West Pacific region and recorded from eastern India, Bangladesh, Myanmar, Thailand, Malaysia, and Borneo (Holthuis 1980, Carpenter and Niem 1998).

Bangladesh: *Macrobrachium mirabile* is widely distributed in the freshwater and coastal rivers of Bangladesh viz, the Meghna, Naaf, Halda, Karnaphuli, Sangu River, etc. It also



Macrobrachium mirabile

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occurs in the Muhuri Irrigation Project and surrounding water bodies (Kibria *et al.* 1979; Shafi and Quddus 1982, Ahmed 1984, Haroon *et al.* 1989, Shahjahan *et al.* 2001, Hossain *et al.* 2007, Zafar *et al.* 2007, Ahmed and Akther 2008, Azadi and Arshad-ul-Alam, 2013, 2014a, b).

EOO: 1,12,304 km²

AOO: 4,707 km²

Habitat and Ecology

The adult form of the species is available in the rivers and estuary. Larvae and post larvae are found in the river drainage system during monsoon.



Assessor: Mohammad Ali Azadi

Associate Assessor/s: Mohammad Arshad-ul-Alam

Macrobrachium rosenbergii

Species ID: CR0016



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALAEMONIDAE

Scientific Name: *Macrobrachium rosenbergii* (de Man, 1879)

English Name: Giant Freshwater Shrimp, Giant River Prawn

Bengali Name: Golda Chingri, Bara Chingri, Chowaicha, Mocha Chingri, Boro Icha, Golda Icha

Synonym/s: *Palaemon rosenbergii* de Man, 1879

Palaemon carcinus rosenbergii Ortmann, 1891

Palaemon whitei Sharp, 1893

Palaemon (Eupalaemon) rosenbergii Nobili, 1899

Palaemon spinipes Schenkel, 1902

Macrobrachium dacqueti Sunier, 1925

Palaemon dacqueti Sunier, 1925

Cryphiops (Macrobrachium) rosenbergii

Johnson, 1966

Taxonomic Notes: The nomenclature of *Macrobrachium rosenbergii* was confusing, but has recently been resolved by Wowor and Ng (2007) and Ng and Wowor (2011).

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Macrobrachium rosenbergii* is widely distributed in freshwater, tidal and coastal rivers of Bangladesh. No major threat is found. In consideration of its wide local range, country-wide captive stocks and the absence of any known threat, the species is considered as Least Concern.

Date Assessed: 01 June 2014

History

Regional Status: *Macrobrachium rosenbergii* was not assessed before in Bangladesh.



Macrobrachium rosenbergii

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Geographic Range

Global: The species is native to Bangladesh, Brunei Darussalam, Cambodia, China, India, Indonesia (Java), Malaysia (Peninsular Malaysia, Sabah and Sarawak), Myanmar (Myanmar (mainland), Pakistan, Philippines, Singapore, Sri Lanka, and Thailand. The species has been introduced to many parts of the world for use in aquaculture (Holthuis 1980, Carpenter and Niem 1998).

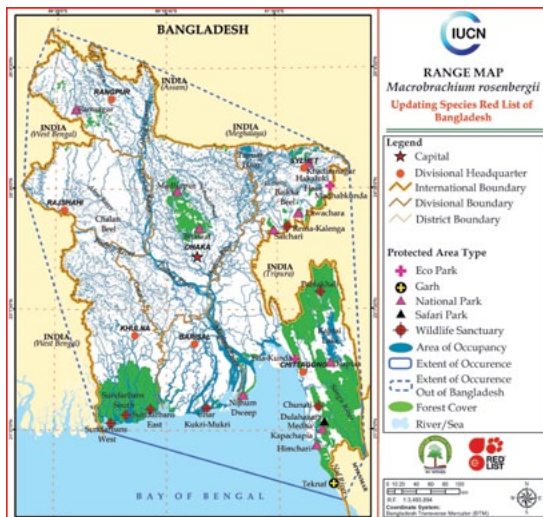
Bangladesh: *Macrobrachium rosenbergii* is available in the Sundarbans particularly in Khulna, rivers in Jessore, Satkhira, Patuakhali, Laxmipur, Barishal, Chittagong, Barguna, Manikgonj, Comilla, Sirajgonj, Natore, Noagaon and Pabna Districts. (Bernacsek 2001, Shafi and Quddus 2004).

EOO: 2,17,468 km²

AOO: 11,128 km²

Habitat and Ecology

Larvae of *Macrobrachium rosenbergii* are carnivorous and mostly consume zooplankton (minute crustaceans), very small worms, and other crustacean larvae. Larvae are sometimes cannibalistic. Post larvae and adults are omnivorous, feed on a variety of organic materials, algae, tender leaves and stems of aquatic plants, nuts, grain, seeds, fruits, fish flesh, copepod, molluscs, aquatic insects, worms, other crustaceans and the offal of fish and other animals. This giant freshwater prawn is benthic in nature. Preferred habitats are fresh and brackish water. It is the largest natantian (swimming) prawn in the world, lives in lower reaches of rivers and lakes, swamps, irrigation ditches, canals, ponds and pools connected to the sea. The adult migrate to estuarine area for breeding during monsoon. The larvae and adults are euryhaline to a considerable degree and tolerate salinities up to 21‰ and can survive wide temperature ranges.



Assessor: Mst. Kaniz Fatema

Macrobrachium rude

Species ID: CR0017



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALAEMONIDAE

Scientific Name: *Macrobrachium rude* (Heller, 1862)

English Name: Hairy River Prawn

Bengali Name: Goda Icha, Goda Chingri, Paitta Icha, Sola Icha, Kucha Chingri

Synonym/s: *Palaemon rosenbergii* de Man, 1879
Palaemon mossambicus Hilgendorf, 1879
Palaemon (Eupalaemon) rudis Coutière, 1900
Palaemon (Eupalaemon) alcocki Nobili, 1903
Palaemon delagoae Stebbing, 1915
Urocaridella borradalei Stebbing, 1923

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Macrobrachium rude* is widespread in fresh and brackish water in Bangladesh. The availability is high in the southern part of Bangladesh. In view of wide distribution and the lack of any major threat, the species is considered as Least Concern.

Date Assessed: 10 June 2014

History

Regional Status: *Macrobrachium rude* was not assessed before in Bangladesh.

Geographic Range

Global: *Macrobrachium rude* is native to Bangladesh,



Macrobrachium rude

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India, Kenya, Madagascar, South Africa, Sri Lanka and Tanzania (Holthuis 1980).

Bangladesh: *Macrobrachium rude* is found in the rivers and canals of the Southern part of Bangladesh viz. Bagerhat, Barishal, Patuakhali, Khulna and the Sundarbans (Ali 1992, Bernacsek 2001, Shafi and Quddus 2004).

EOO: 2,24,779 km²

AOO: 16,874 km²

Habitat and Ecology

Macrobrachium rude is an omnivorous prawn and mostly consume a variety of organic materials, algae, tender leaves and stems of aquatic plants, copepod, molluscs, aquatic insects, worms, and other crustaceans. This species occurs in fresh and brackish waters, clear stream and rivers. It is a benthic omnivore species. It is more active during night.



Assessor: Mst. Kaniz Fatema

Macrobrachium villosimanus

Species ID: CR0002



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALAEMONIDAE

Scientific Name: *Macrobrachium villosimanus* (Tiwari, 1949)

English Name: Dimua River Prawn

Bengali Name: Dimua Icha

Synonym/s: *Palaemon villosimanus* Tiwari, 1949

Taxonomic Notes: None



Macrobrachium villosimanus

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Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Macrobrachium villosimanus* is widely distributed in tidal rivers, estuaries and tidal inundated water bodies and beels of Bangladesh. The species has wide distribution and presently there is no major threat to it. The species is therefore listed as Least Concern.

Date Assessed: 25 June 2014

History

Regional Status: *Macrobrachium villosimanus* has never been assessed in Bangladesh.

Geographic Range

Global: *Macrobrachium villosimanus* is found in Southern Asia - Bangladesh, India, Myanmar and Sri Lanka (Jayachandran 2001, Cai and Ng 2002).

Bangladesh: *Macrobrachium villosimanus* is available in the tidal rivers of Bangladesh, Meghna, Titas, Pagla, Karnaphuli, Halda Sangu Rivers and those in Patuakhali including Sundarbans estuary (Kibria *et al.* 1979,

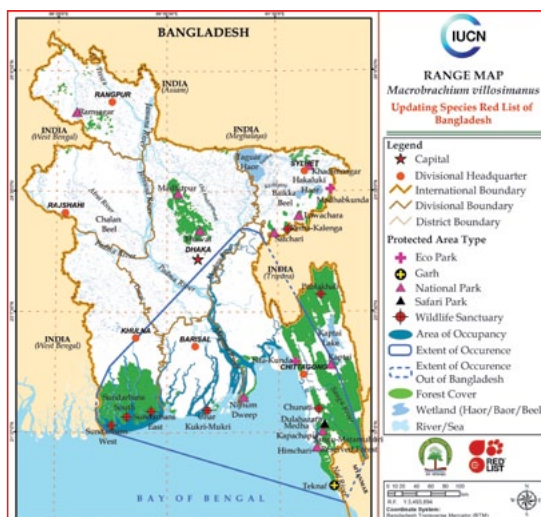
Ahmed 1984, Haroon *et al.* 1989, Patra and Iqbal 1992, Zafar *et al.* 2007, Ahmed and Akther 2008, Azadi and Arshad-ul-Alam 2013).

EOO: 81,010 km²

AOO: 5,986 km²

Habitat and Ecology

Macrobrachium villosimanus feeds on decomposing small aquatic animals. It breeds during monsoon and juveniles occur in deltaic estuary during and after the flood period. The species thrives in freshwater to tidal areas of the river, estuary, tidal inundated ponds and beels.



Assessor: Mohammad Ali Azadi

Associate Assessor/s: Mohammad Arshad-ul-Alam

Palaemon karnafuliensis

Species ID: CR0063



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALAEMONIDAE

Scientific Name: *Palaemon karnafuliensis* (Khan, Fincham & Mahmood, 1980)

English Name: Karnafuli Shrimp

Bengali Name: Gura Ichia

Synonym/s: *Nematopalaemon karnafuliensis* (Khan, Fincham & Mahmood, 1980)

Taxonomic Notes: The species was closely resembling *Palaemon tenuipes* (Henderson, 1893) recorded in Karnafuli estuary. Later it was recorded as new species (Khan *et al* 1980).

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: The Karnafuli Shrimp, *Palaemon karnafuliensis* is an abundant species in Karnafuli estuary, Bangladesh is the only habitat of this species. In view of this distribution, and in the absence of any major threat, the species is considered to be of Least Concern.

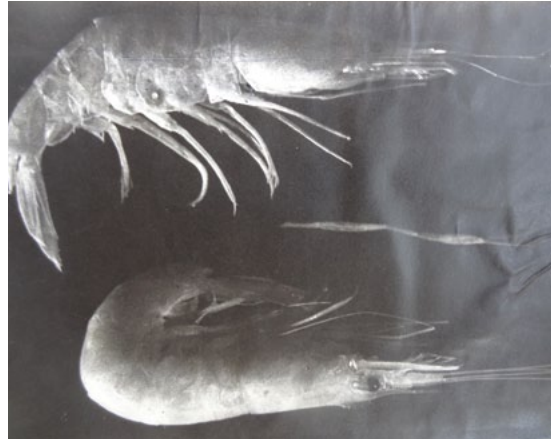
Date Assessed: 20 September 2014

History

Regional Status: The species has never been assessed in Bangladesh.

Geographic Range

Global: The species has so far been recorded from the Karnafuli Estuary of the Bay of Bengal coast in Bangladesh (Khan *et al* 1980).



Palaemon karnafuliensis

© M. Ali Azadi

Bangladesh: The species is available only in the Karnafuli Estuary of the Bangladesh coast (Suman *et al.* 2013).

EOO: 311 km²

AOO: 273 km²

Habitat and Ecology

The Karnafuli Shrimp, *Palaemon karnafuliensis* lives in brackish water environment.



Assessor: Md. Enamul Hoq

Fenneropenaeus merguensis

Species ID: CR0018



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	BRANCHIOPODA	DECAPODA	PENAEIDAE

Scientific Name: *Fenneropenaeus merguensis* (De Man, 1888)

English Name: Banana Prawn, White Shrimp

Bengali Name: Kola Chingri, Boro Chingri, Bagha Chama

Synonym/s: *Penaeus indicus merguensis* De Man, 1982
Penaeus merguensis De Man, 1888

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least concern (LC) ver 3.1

Justification: *Fenneropenaeus merguensis* has wide range of existence in the coastal waterbodies of Khulna, Patuakhali, the Sundarban Mangroves and the Bay of Bengal with depth of up to 55 m in Bangladesh. There is no record that the population is severely fragmented. Neither the population size is recorded as small nor is it restricted. Based on the above criteria, the species is considered as Least Concern.

Date Assessed: 26 June 2014

History

Regional Status: This taxon has not yet been assessed in Bangladesh.

Geographic Range

Global : *Fenneropenaeus merguensis* is distributed in Indo-West Pacific: from the Persian Gulf to Thailand, Hong Kong, Philippines, Indonesia, New Guinea, New Caledonia



Fenneropenaeus merguensis

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and North Australia. The species is also available in Japan, Pakistan and Singapore (Kurian and Sebastian 1976, Holthuis 1980, Carpenter and Niem 1998).

Bangladesh: Banana prawn is found in the river and coastal waters of Khulna, Patuakhali, Sundarban Estuaries and Bay of Bengal.

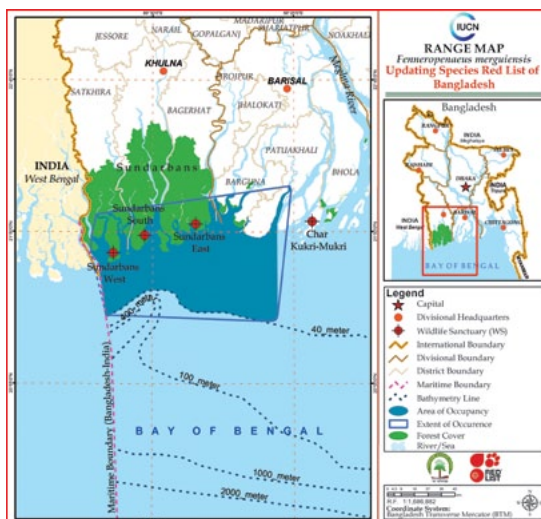
EOO: 10,107 km²

AOO: 6,576 km²

Habitat and Ecology

After spending early life stage in the sea, *Fenneropenaeus merguensis* progress towards estuaries (Jul-Oct) and go back to the sea again before attaining sexual maturity. This is a tidal and marine water inhabiting shrimp. It feeds on a variety of food items. In the nursery ground, newly-arrived pelagic postlarvae are carnivores, feeding largely on copepods. Epibenthic postlarvae and juveniles are carnivorous detritivores, consuming mainly organic detritus. They also prey on small animals like foraminiferans, copepods, larval bivalves and brachyuran larvae. Sub-adults are detritivorous carnivores, feeds mainly on large crustaceans - *Acetes* and *Mysids*; and a little organic detritus. In the spawning ground, adults are detritivore-carnivores consuming equal amounts organic detritus and a variety of large crustaceans, polychaetes, mollusks and fishes. Organic detritus is considered a food supplement; its utilization as a food source becomes important to the maturing prawn when it assumes a benthic existence. It is a bottom dwelling estuarine and marine shrimp can live up to a depth of 10 to 55 meters.

Assessor: Mohd. Golam Quader Khan



Melicertus latisulcatus

Species ID: CR0037



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MAXILLOPODA	DECAPODA	PENAEIDAE

Scientific Name: *Melicertus latisulcatus* Kishinouye, 1896

English Name: Western King Prawn, Blue-leg (king) Prawn, Furrowed Prawn

Bengali Name: Not known

Synonym/s: *Penaeus* sp. Fabricius, 1798

Melicertus sp. Rafinesque, 1814

Penaeus latisulcatus Kishinouye, 1896

Melicertus latisulcatus Flegel, 2007

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: Considering the current wide natural range of distribution in the long coastline of Bangladesh, and in the absence of any major threat, *Melicertus latisulcatus* is considered Least Concern.

Date Assessed: 05 August 2014

History

Regional Status: The species has never been assessed in Bangladesh.

Geographic Range

Global: *Melicertus latisulcatus* is distributed in Indo-West Pacific, Red Sea and South East Africa including Australia, Bangladesh, Cambodia, Fiji, Hong Kong, India, Indonesia, Japan, Malaysia, Mozambique, North Korea, Philippines,



Melicertus latisulcatus

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Singapore, South Korea, Somalia and Thailand (Holthuis 1980, Carpenter and Niem 1998).

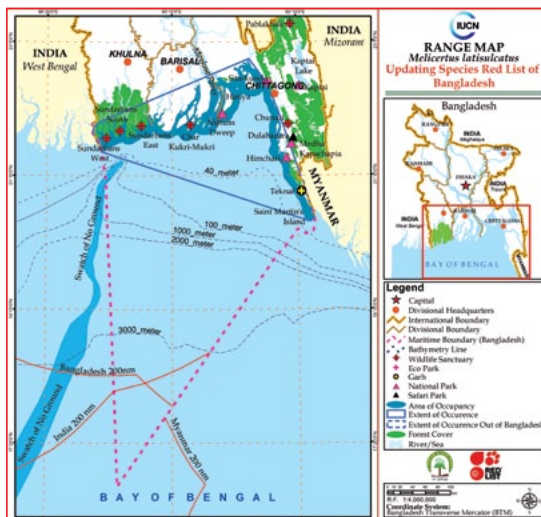
Bangladesh: It is found in the coastal waters of the Bay of Bengal, off Bangladesh coast and associated estuaries.

EOO: 46,947 km²

AOO: 10,178 km²

Habitat and Ecology

Melicertus latisulcatus lives in sandy and muddy bottom, or with stones at depth of 0 to 80 m. It prefers salinity of 25 ppt and above. Juveniles are found in shallow bays and tidal creeks (Ramasamy and Pandian 1985). They feed on wide variety of materials and are opportunistic feeders.



Assessor: Harunur Rashid

Metapenaeus brevicornis

Species ID: CR0024



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Metapenaeus brevicornis* (H. Milne Edwards, 1837)

English Name: Yellow Shrimp

Bengali Name: Saga Chingri, Horina Chingri, Honey Chingri, Kharkharia Chingri, Kucho Chingri, Lolia Chingri, Chama Chingri, Chali Chingri

Synonym/s: *Penaeus brevicornis* H. Milne Edwards, 1837
Penaeopsis brevicornis H. Milne Edwards, 1837
Penaeus avirostris Dana, 1852
Metapenaeus avirostris Dana, 1852
Penaeopsis avirostris Dana, 1852
Metapenaeus avirostris -Nobili, 1903
Penaeopsis brevicornis De Man, 1911
Penaeopsis avirostris De Man, 1911

Taxonomic Notes: None.



Metapenaeus brevicornis

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Date Assessed: 19 June 2014

History

Regional Status: *Metapenaeus brevicornis* was not assessed before in Bangladesh.

Geographic Range

Global: *Metapenaeus brevicornis* is distributed in Indo-West Pacific: Arabian Sea off Pakistan to Malaya - Viet Nam and Borneo. The species is available in Bangladesh, Borneo, India, Indonesia, Mauritius, Pakistan, Sri Lanka, Singapore and Thailand. It is of importance in Ganges delta of Bangladesh and Indian State of West Bengal and along west coast of Thailand. In Thailand, Malaya and Indonesia it forms an important component of farmed shrimps (Holthuis 1980, Carpenter and Niem 1998, Bernaecsek 2001, Ullah *et al.* 2012, Hossain 2013).

Bangladesh: *Metapenaeus brevicornis* is a brackish and coastal water shrimp of Bangladesh and generally found in the coastal waters of Chittagong, Cox's Bazar, Patuakhali, the Sundarbans and the Bay of Bengal.

EOO: 46,947 km²

AOO: 10,178 km²

Habitat and Ecology

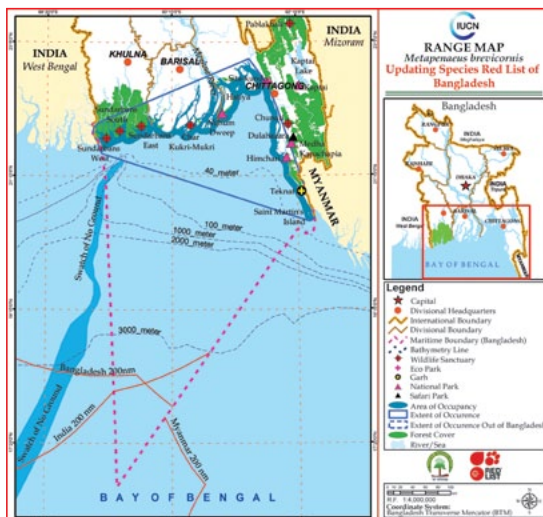
Metapenaeus brevicornis is a benthic omnivore, maximum total length 152 mm (usually not more than 130 mm), within 3 to 4 months of hatching a length of 80 to 110 mm reached and gained a weight of 10 to 15 g. It is tolerant to low salinity and high temperature. It is a demersal species; depth range 4 - 90 m. The species can live marine to almost freshwater environment. After spending early stages of life in the marine water, comes to the coast and compared to other shrimps, stay in the estuary for longer time and therefore, are caught round the year. Before, reaching the maturity, *M. brevicornis* goes back to the sea.

Assessor: Mostafa Ali Reza Hossain

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: In the demersal trawl surveys (from the shoreline to a depth of 150 m) conducted in the Bay of Bengal between 1984 and 1986, small shrimps including *Metapenaeus brevicornis* contributed to the catch less than 0.01%. *M. brevicornis* is farmed in the ghers (shrimp pond) of Bangladesh through the accidental introduction of their post larvae when the ghers are filled with water from coastal rivers or water exchange takes place. Of the penaeid shrimps, *M. brevicornis* was noted as one of the four major shrimps available at Chakaria and Satkhira area. Estimated average annual landing for *M. brevicornis* (species wise estimated catch) was 2015 tonnes (Ullah *et al.* 2012). Based on above features, the taxon *M. brevicornis* is considered as Least Concern.



Metapenaeus lysianassa

Species ID: CR0027



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Metapenaeus lysianassa* (De Man, 1888)

English Name: Bird Shrimp

Bengali Name: Kucho Chingri, Gosa Chingri, Chama Chingri, Hanny Chingri

Synonym/s: *Penaeus lysianassa* De Man, 1888

Penaeopsis lysianassa (De Man, 1888)

Metapenaeus lysianassa malaccaensis Hall, 1962

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Metapenaeus lysianassa* is widely found in the entire coast of Bangladesh. It is available in abundance, especially at the full moon during May-October and caught by set bag net, traps, push nets, seines, and trawls. Based on above features, the taxon, *M. lysianassa*, is considered as Least Concern.

Date Assessed: 20 June 2014

History

Regional Status: *Metapenaeus lysianassa* was not assessed before in Bangladesh.

Geographic Range

Global: *Metapenaeus lysianassa* is distributed in Indo-West Pacific from India to Borneo (north), Indonesia, Malaysia, Viet Nam and Thailand. The species is also



Metapenaeus lysianassa

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available in Bangladesh (Bay of Bengal), Pakistan and Singapore (Holthuis1980, Carpenter and Niem1998, Bernacsek 2001, Hossain 2013).

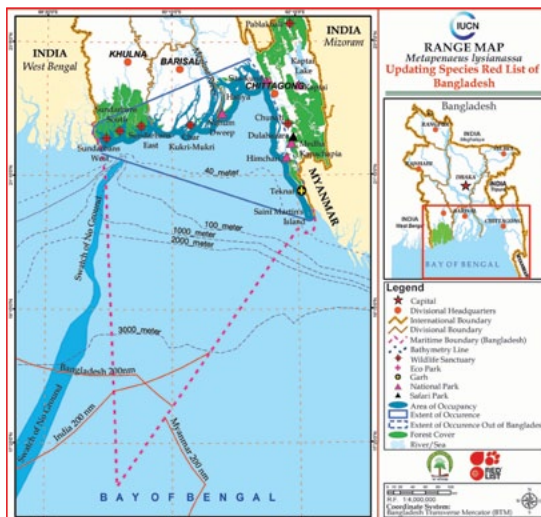
Bangladesh: This shrimp is found in the river mouths and coastal waters under the districts/subdistricts of Satkhira, Bagerhat, Khulna, Patuakhali, Sundarban, Chittagong, Cox's Bazar and Teknaf, and in the Bay of Bengal.

EOO: 46,947 km²

AOO: 10,178 km²

Habitat and Ecology

Metapenaeus lysianassa is a muddy bottom dwelling coastal shrimp and can attain a maximum body length 9 cm by female and 6.1 cm by male. This shrimp is found in inshore waters, up to a depth of 28 m. Stake nets, traps, set nets, push nets, seine nets, and trawls are used to catch this shrimp. *M. lysianassa* spends early stage of life cycle in sea and then comes to estuary. It is abundant during full moon from May to October.



Assessor: Mostafa Ali Reza Hossain

Metapenaeus monoceros

Species ID: CR0028



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Metapenaeus monoceros* (Fabricius, 1798)

English Name: Brown Shrimp, Speckled Shrimp, Ginger Shrimp, Grey Shrimp

Bengali Name: Harina Chingri, Loilla Icha, Kharkharia Chingri, Kharkhore Chingri, Honey Chingri, Karaney Chingri, Kucho Chingri, Lalia Chingri

Synonym/s: *Penaeus monoceros* Fabricius, 1798
Penaeopsis monoceros (Fabricius, 1798)

Taxonomic Notes: None



Metapenaeus monoceros

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Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Metapenaeus monoceros* is widely distributed along the entire Bangladesh coast, estuary and lower tidal rivers. Stock of the shrimp is relatively healthy, because it has little vulnerability to post larvae fishing. The overall low catch of *M. monoceros* (less than 10%, meaning more than 90% of its population is released) from push nets (due to lower catchability of this gear) in the post larvae fishery results in a relatively high catch in the ESN fishery. In the trawl fishery, *M. monoceros* offers the highest yields (eight times higher than the tiger shrimp, *P. monodon* and 30 times higher than the white shrimp, *P. indicus*). Based on above features, *M. monoceros* is assessed as Least Concern.

Date Assessed: 28 May 2014

History

Regional Status: *Metapenaeus monoceros* has never been assessed in Bangladesh.

Geographic Range

Global: *Metapenaeus monoceros* is distributed in Tropical, South-east Atlantic, the Mediterranean and Indo West Pacific Africa - Egypt, Kenya, Madagascar, Mauritius, Mozambique, Somalia, South Africa, Tanzania, and Tunisia. The shrimp is widely available in Asia - Bangladesh, India, Israel, Lebanon, Malaysia, Myanmar, Pakistan, Philippines, Saudi Arabia, Sri Lanka, Syria, Cyprus, Turkey, Yemen and particularly abundant in Gulf of Eden, Indian state of Kerala, lower Gangetic Estuary of Bangladesh (George 1974, Holthuis 1980).

Bangladesh: *Metapenaeus monoceros* is a coastal water shrimp of Bangladesh and found in the tidal rivers, estuary and entire coast of Bay of Bengal- Satkhira, Bagerhat, Khulna, Patuakhali, Sundarban, Dublar Char, Chittagong, Cox's Bazar and Teknaf coast (Mustafa 1989, Hussain and Rahman 2010).

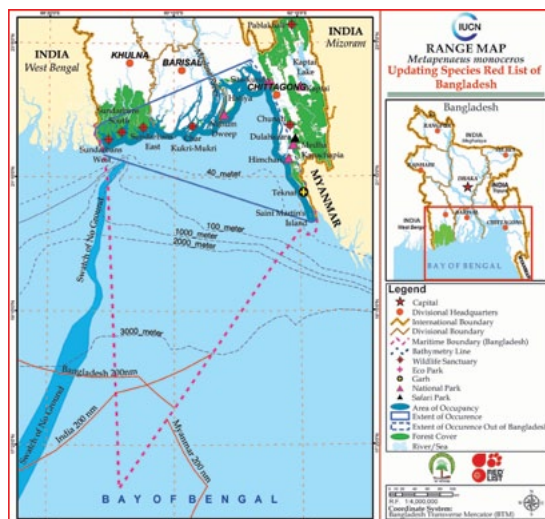
EOO: 46,947 km²

AOO: 10,178 km²

Habitat and Ecology

Metapenaeus monoceros is an omnivore, browse on the epi-flora and -fauna of muddy substrates but also a column feeder, feed on organic matter, plankton, lower plant and plant particles, sponge, polychaeta, copepods, crustacean and a number of other aquatic insects (George, 1974). This demersal brown shrimp is a marine and brackish water inhabitant and can live well in 5-35 ppt salinity and depth up to 1-60 m, more common in 10-30 m. The species particularly prefers to inhabit water with aquatic vegetation. Though, at initial stage of life, stay in sea water, as it grows, start migrating to upstream to estuary in June, stay in estuary up to December and after that go back to sea. Mature adult *M. monoceros* is not available in estuary.

Assessor: Mostafa Ali Reza Hossain



Parapenaeopsis sculptilis

Species ID : CR0033

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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Parapenaeopsis sculptilis* Heller, 1862

English Name: Rainbow Shrimp, Coral Shrimp

Bengali Name: Roda Chingri, Shukno Chingri, Boro Chama, Tiga Chingri, Guda Chingri, Bagtara Chingri

Synonym/s: *Penaeus sculptilis* Heller, 1862

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Parapenaeopsis sculptilis* is widely abundant in the coastal and marine water of Bangladesh. Estimated average annual landing for *P. sculptilis* (species wise estimated catch in tons) was 2553.52 tons (Ullah *et al.* 2012). Stock of *P. stylifera* does not exceed the optimum fishing pressure in Bangladesh coast. Based on above features, *P. sculptilis* is assessed as Least Concern.

Date Assessed: 21 June 2014

History

Regional History: *Parapenaeopsis sculptilis* has not been assessed in Bangladesh.

Geographic Range

Global: *Parapenaeopsis sculptilis* is distributed in Indo-West Pacific region: from Pakistan, Bangladesh to Malaysia, the Philippines and Australia (Holthuis 1980, Azadi *et al.* 1995, Zafar *et al.* 1997, Carpenter and Niemi 1998, Amin and Zafar 2003).



Parapenaeopsis sculptilis

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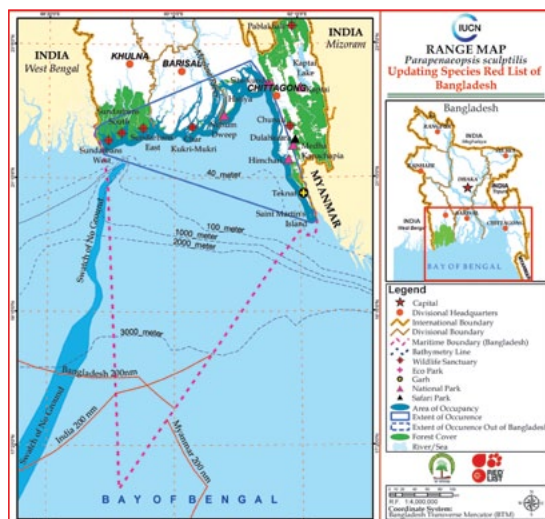
Bangladesh: The rainbow shrimp is found in the coastal areas of Barisal, Chittagong, Cox's Bazar, Khulna, Kutubdia, Moheshkhali, Patuakhali, Sonadia and the Sundarbans.

EOO: 46,947 km²

AOO: 10,178 km²

Habitat and Ecology

Parapenaeopsis sculptilis is a short-lived fast growing coastal water shrimp, female of which can attain a maximum body length of 125 mm and male 100 mm. This shrimp is recruited in June to September. This demersal marine Rainbow Shrimp lives in the coastal waters upto the depth of 35 - 90 m. After spending the initial stage of the life cycle in the ocean, it migrates to the estuary with other shrimps. *P. sculptilis* is available in the estuary during July to October and then again it goes back to the sea. The shrimp is generally caught at the dawn during low tide particularly during full moon and new moon by set bag net (Behundi jal).



Assessor: Mostafa Ali Reza Hossain

Parapenaeopsis stylifera

Species ID: CR0034



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Parapenaeopsis stylifera* (H. Milne Edwards, 1837)

English Name: Kiddi Shrimp

Bengali Name: Ruda Chingri

Synonym/s: *Penaeus styliferus* H. Milne Edwards, 1837

Penaeus stylifera (H. Milne Edwards, 1837)

Taxonomic Notes: Two subspecies - *Parapenaeopsis stylifera stylifera* Alcock, 1906 from Persian Gulf to India and Sri Lanka and *Parapenaeopsis stylifera coromandelica* Racek and Dall, 1965 from East coast of India to Indonesia have been recognized (Ravindranath 1989).



Parapenaeopsis stylifera

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Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Parapenaeopsis stylifera* is widely available and distributed in the coastal and marine waters of Bangladesh. Among the penaeid shrimps, *P. stylifera* is one of the major contributor in the total shrimp catch. The estimated production from shrimp trawlers for this species was 8 metric tons in 1989-90. Based on above features *P. stylifera* is placed under Least Concern.

Date Assessed: 26 June 2014

History

Regional History: *Parapenaeopsis stylifera* has not been assessed in Bangladesh.

Geographic Range

Global: *Parapenaeopsis stylifera* is distributed in Indo-West Pacific region: Bangladesh, Kuwait and India (West coast and Southern part of East coast) Pakistan and Sri Lanka (Holthuis 1980, BOBP 1989, Hoq *et al.* 2006).

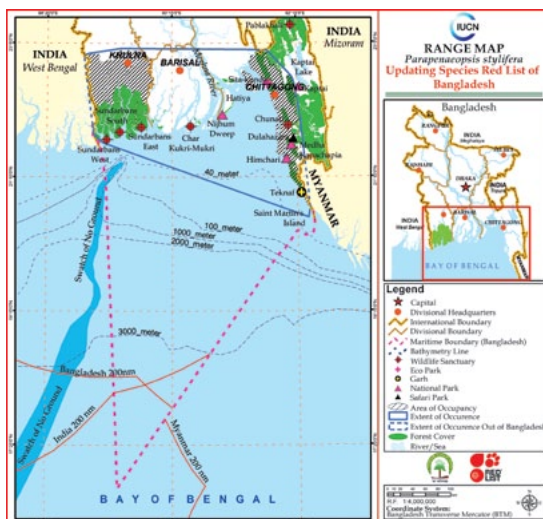
Bangladesh: Kiddi Shrimp is widely found in a number of coastal districts of Bangladesh- Satkhira, Khulna, Bagerhat, Chittagong and Cox's Bazar.

EOO: 67,852 km²

AOO: 17,470 km²

Habitat and Ecology

Parapenaeopsis stylifera can attain a maximum total length of 145 mm by male. It breeds throughout the year with a peak in monsoon. This bottom dwelling shrimp is generally found in the littoral regions of inshore shallow water and estuary and available up to 90 m depth.



Assessor: Mostafa Ali Reza Hossain

Penaeus indicus

Species ID: CR0014



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Penaeus indicus* H. Milne Edwards, 1837
English Name: Indian White Shrimp, Indian Prawn, White Prawn
Bengali Name: Chapra Chingri, Apda, Chaka Chingri
Synonym/s: *Palaemon longicornis* Olivier, 1825
Fenneropenaeus indicus H. Milne Edwards, 1837
Penaeus indicus longirostris De Man, 1892
Taxonomic Notes: None



Penaeus indicus

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Assessment Information

Red List Category & Criteria: Least concern (LC) ver 3.1

Justification: *Penaeus indicus* is a widely distributed shrimp and commercially cultured shrimp of Bangladesh. Although commercially fished but no major threats were found, on the basis of which the species is considered as Least Concern.

Date Assessed: 04 June 2014

History

Regional Status: *Penaeus indicus* was not assessed before in Bangladesh.

Geographic Range

Global : *Penaeus indicus* is distributed in Bangladesh, East Africa, Indonesia, Malaysia, Madagascar, South Africa, Pakistan, Philippines, Papua New Guinea, Thailand, the Gulf of Eden, the Southwest and East coast of India, the Northern coast of Australia, and Southern China (Holthuis 1980, Bernacsek 2001).

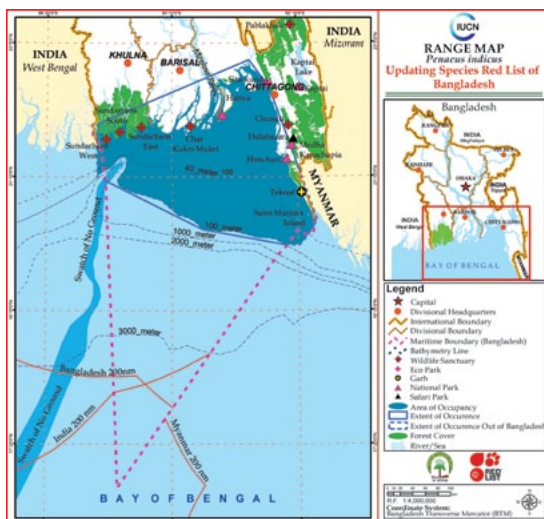
Bangladesh: The Indian White Shrimp (*Penaeus indicus*) is found in the river mouth and Coastal area of the Bay of Bengal, Bangladesh- Bagherhat, Charchapli, Chittagong, Cox's Bazar, Chittagong, Dublar Char, Khepupara, Khulna, Patuakhali, Satkhira and the Sundarbans.

EOO: 64,962 km²

AOO: 50,756 km²

Habitat and Ecology

Penaeus indicus is a bottom feeder omnivore and feeds on organic matter, plankton, lower plant and plant particles, algae, benthic detritus, sponge, polychaete worms, copepods, a number of other aquatic insects and small crustaceans. Maximum size recorded for male and female measured 150 mm and 230 mm, respectively. The shrimp is a bottom mud and sand dwelling sea and brackish water crustaceans. The adults are marine and offshore breeder, while postlarvae and juveniles are estuarine. They are euryhaline and live in temperature range of 18 and 34.5°C and salinities from 5 to 50 ppt. The optimal salinity for juvenile *P. indicus* is 10 to 15 ppt. Juveniles can tolerate a much wider range of salinity (5-40‰) than adults.



Assessor: Mst. Kaniz Fatema

Penaeus japonicus

Species ID: CR0015



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Penaeus japonicus* Bate, 1888

English Name: Tiger Shrimp, Japanese King Shrimp, Kuruma Shrimp, White Shrimp, Indian White Shrimp, Ginger Prawn

Bengali Name: Dorakata Chingri, Japni Chingri

Synonym/s: *Marsupenaeus japonicas* Bate, 1888

Penaeus canaliculatus va. *Japonicas* Bate, 1888

Penaeus pulchricaudatus Stebbing, 1914

Taxonomic Notes: None



Penaeus japonicus

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Assessment Information

Red List Category & Criteria: Least concern (LC) ver 3.1

Justification: *Penaeus japonicus* is a brackish and marine water shrimp and highly abundant in the southern part of Bangladesh. In view of this wide distribution and the lack of any major threats, the species is considered as Least Concern.

Date Assessed: 03 June 2014

History

Regional Status: *Penaeus japonicus* has not been assessed in Bangladesh.

Geographic Range

Global : *Penaeus japonicus* is distributed in Australia, Bangladesh, Brazil, China, Cyprus, Egypt, France, Fiji, Greece, India, Indonesia, Israel, Ireland, Italy, Japan,

Lebanon, Madagascar, Malaysia, Mauritius, North Korea, Pakistan, Philippines, Polynesia, Papua New Guinea, Portugal, South Africa, South Korea, Singapore, Syria, Spain, Thailand, Taiwan, USA (Holthuis 1980, Carpenter and Niem 1998).

Bangladesh: *Penaeus japonicus* is found in the river mouth and coastal waters of the Bay of Bengal, Bangladesh, mainly Bagerhat, Khulna and Satkhira.

EOO: 3,826 km²

AOO: 1,975 km²

Habitat and Ecology

Penaeus japonicus is an estuarine and coastal bottom dwelling omnivorous shrimp, feeds on organic matter, plankton, lower plant and plant particles, algae, benthic detritus, sponge, polychaete worms, copepods, a number of other small aquatic insects and small crustaceans. Sand-mud bottom dwelling Indian white shrimp lives up to 90 m with a salinity range of 15-30 ppt. Adults live in sand bottoms in shallow-water environments during winter and during spring- summer migrate to estuarine waters for breeding. They are eurythermic and euryhaline and complete adult is not available in the estuary.



Assessor: Mst. Kaniz Fatema

Penaeus monodon

Species ID: CR0013



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Penaeus monodon* Fabricius, 1798

English Name: Giant Tiger Shrimp, Tiger Prawn, Grass Shrimp, Asian Tiger Shrimp

Bengali Name: Bagda Chingri, Bagatara, Kali Icha, Kal Chingri, Baatara Icha

Synonym/s: *Penaeus carinatus* Dana, 1852
Penaeus tahitensis Heller, 1862
Penaeus semisulcatus exsutcatus Hilgendorf, 1879
Penaeus coeruleus Stebbing, 1905
Penaeus bubulus Kubo, 1949
Penaeus monodon monodon Burkenroad, 1959
Penaeus monodon var. manillensis Villaluz and Arriola 1938

Taxonomic Notes: None



Penaeus monodon

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Assessment Information

Red List Category & Criteria: Least concern (LC) ver 3.1

Justification: *Penaeus monodon* is widely distributed in marine waters of Bangladesh and constituted a commercially important brackish water culture and capture fisheries item. Although commercially fished but no major threats on its population has yet been noticed. In view of its wide presence and absence of any threats the species is considered as Least Concern.

Date Assessed: 29 May 2014

History

Regional Status: *Penaeus monodon* was not assessed in Bangladesh.

Geographic Range

Global: *Penaeus monodon* is a tropical marine water shrimp and widely distributed throughout the greater part of the Indo-West Pacific and Atlantic Ocean, including Bangladesh (Holthuis 1980, Carpenter and Niem 1998, Bernacsek 2001).

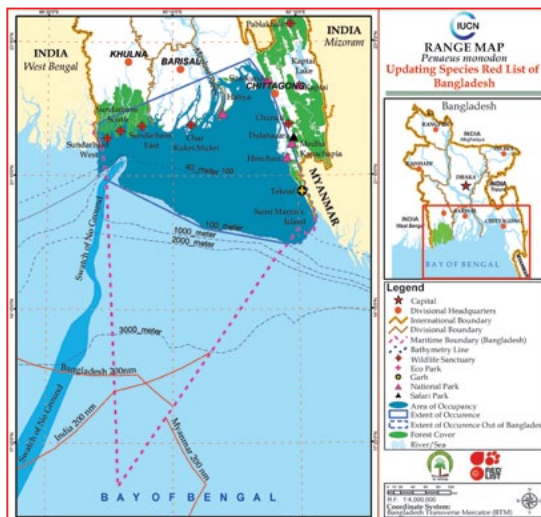
Bangladesh: The species is found in coastal Bangladesh the river mouth and coast of Bay of Bengal– Bagerhat, Chittagong, Cox's Bazar, Khepupara, Khulna, Patuakhali, Satkhira, the Sundarbans and Teknaf coast. It is hugely available in Bagherhat during April to September.

EOO: 64,962 km²

AOO: 50,756 km²

Habitat and Ecology

This omnivore prefers small crustaceans, mollusks and annelids, scale of other fishes, copepod, sponge, vegetable matter, algae, diatom, polychaetes, small fish, insects, ophiuroids, debris, sand, and silt. The adult is a predator of slow-moving benthic macro-invertebrates, or opportunistic in feeding behavior. Probably it is the largest known penaeid. The species is demersal, found in estuarine and brackish water, depth range 0 - 160 m, common in 60 m; lives on in sand bottom, mud, or slits, relatively eurythermal and euryhaline, temperature ranges of: 26.3- 31.2°C and salinity: 20.0-28.9 ppt. Adult fertile female shrimp is available from natural water bodies.



Penaeus semisulcatus

Species ID: CR0039

LEAST
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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Penaeus semisulcatus* de Haan, 1844

English Name: Green Tiger Shrimp

Bengali Name: Bagtara Chingri, Sada Icha

Synonym/s: *Penaeus ashiaka* Kishinouye, 1900

Penaeus semisulcatus paucidentatus

Parisi, 1919

Penaeus monodon manillensis Villaluz and

Arriola, 1938

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Penaeus semisulcatus* occurs along the entire Bangladesh coast. Based on above features; and in the absence of any major threat, the species is considered to be of Least Concern.

Date Assessed: 22 July 2014

History

Regional Status: *Penaeus semisulcatus* was not assessed before in Bangladesh.

Geographic Range

Global: The species is distributed in Indo-West Pacific: Red Sea, East and Southeast Africa (Mozambique to Somalia) to Japan, Korea, the Malay Archipelago and Northern Australia. It is also found in Eastern Atlantic: along



Penaeus semisulcatus

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the coasts of Egypt, Israel, Lebanon, Syria and Southern Turkey (Holthuis 1980, Carpenter and Niem 1998).

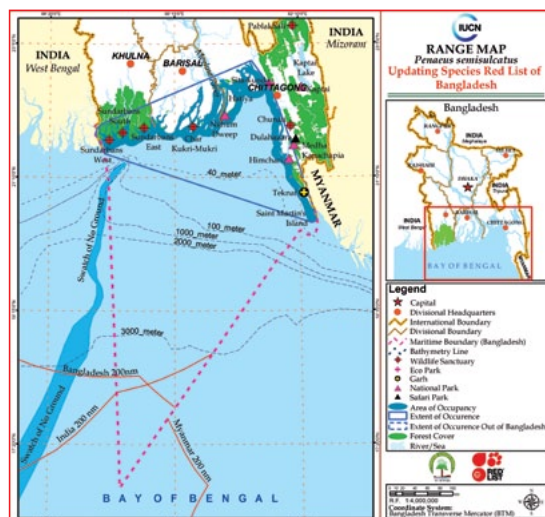
Bangladesh: *Penaeus semisulcatus* lives in the Bay of Bengal and estuarine areas, particularly in areas full of aquatic weed. It is also available in the river mouths and coast of Bay of Bengal encompassing Bagherhat, Chittagong, Cox's Bazar, Dublar Char, Khulna, Patuakhali, the Sundarbans and Teknaf (Mustafa 2003).

EOO: 46,947 km²

AOO: 10,178 km²

Habitat and Ecology

Penaeus semisulcatus occurs on bottom mud, sandymud or sandy-grit substrates. It prefers marine (adults) and estuarine (juveniles) environments in subtropical and tropical climates. It is predominantly nocturnal and buries in substrate during day and post larvae settle exclusively on sea grass beds.



Assessor: Mostafa Ali Reza Hossain

Acetes indicus

Species ID: CR0048



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	SERGESTIDAE

Scientific Name: *Acetes indicus* H. Milne Edwards, 1830

English Name: Jawla Paste Shrimp

Bengali Name: Bhati Chingri, Dhaina Icha, Kainga Icha, Juinna Icha

Synonym/s: *Acetes spiniger* Hansen, 1919

Taxonomic Notes: None



Acetes indicus

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Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: Neither the population size is recorded as small nor is it restricted. Extreme fluctuations in number of locations or Extent of Occurrence, and Area of Occupancy have not been observed. Based on the wide occurrence in Bangladesh, *Acetes indicus* falls in the Category of Least Concern.

Date Assessed: 20 August 2014

History

Regional Status: This species was not assessed before in Bangladesh.

Geographic Range

Global: This species is distributed in Indo-West Pacific region i.e. Bangladesh, Cambodia, India, Indonesia, Malaysia, Myanmar, Pakistan, Singapore, Thailand and Vietnam (Holthuis 1980, Carpenter and Niem 1998).

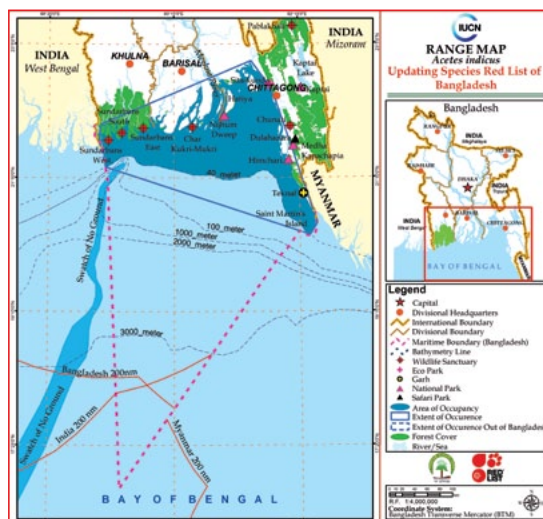
Bangladesh: Shallow brackish coastal water upto 50 meter depth range: Moheskhalı, Kumira, Hatia, Khepupara, Murrelganj (Bagerhat) and Kaliganj (Shatkhira) (BOBP 1993).

EOO: 54,628 km²

AOO: 29,659 km²

Habitat and Ecology

This species lives in shallow, sometimes brackish coastal waters, epipelagic and feeds on plant matters, fine sand and mud, crustacean appendages, debris, zooplankton, phytoplankton, algae, shrimp nauplii and mollusk larvae.



Assessor: Mohd. Golam Quader Khan

Acetes japonicus

Species ID: CR0050

LEAST
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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	SERGESTIDAE

Scientific Name: *Acetes japonicus* Kishinouye, 1905

English Name: Akiami Paste Shrimp, Paste Shrimp, Akiami Shrimp

Bengali Name: Loila Chingri, Layla Chingri, Vorta Chingri, Shada Icha

Synonym/s: *Acetes dispar* Hansen, 1919
Acetes cochinchensis Rao, 1968

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: Considering the current wide natural range of distribution of *Acetes japonicus* along the long coast of Bangladesh and in the absence of any major threat, the species is considered as Least Concern.

Date Assessed: 01 August 2014

History

Regional Status: *Acetes japonicus* was not assessed before in Bangladesh.

Geographic Range

Global: *Acetes japonicus* widely distributed in Bangladesh, Cambodia, China, Hong Kong, India, Indonesia, Iran, Japan, Kuwait, Malaysia, Myanmar, North Korea, Pakistan, Philippines, Singapore, South Korea, Taiwan, Thailand and Vietnam (Holthuis 1980, Carpenter and Niem 1998).



Acetes japonicus

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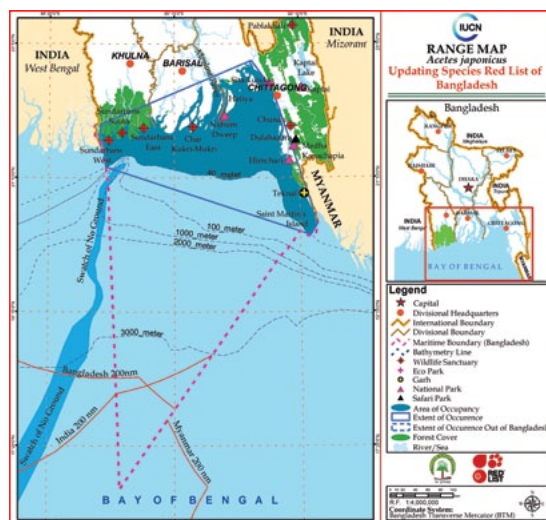
Bangladesh: It occurs in shallow coastal waters of Bangladesh- Chittagong, Khulna, Patuakhali, Estuary of the Sundarbans and the Bay of Bengal.

EOO: 54,628 km²

AOO: 29,659 km²

Habitat and Ecology

This epipelagic species inhabits shallow coastal low saline waters over muddy bottoms, in generally less than 50 m depth. It is omnivorous and bottom feeder and mostly consumes plant material, crustacean appendages of decapods, bivalve larvae, phytoplankton, zooplankton, algae, debris, sand and mud.



Assessor: Mst. Kaniz Fatema

Solenocera crassicornis

Specie ID: CR0044

LEAST CONCERN
<LC>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	SOLENICERIDAE

Scientific Name: *Solenocera crassicornis* (H. Milne Edwards, 1837)

English Name: Coastal Mud Shrimp, Red Prawn

Bengali Name: Ghora Chingri, Chama Chingri, Sura Chingri

Synonym/s: *Penaeus crassicornis* H. Milne Edwards, 1837

Solenocera sinensis Yu, 1837

Solenocera indicus Nataraj, 1945

Solenocera subnuda Kubo, 1949

Solenocera kubo Hall, 1956

Taxonomic Notes: The species is first described by H. Milne Edwards (1837) as *Solenocera crassicornis*, in the same year Yu (1837) reported as *Solenocera sinensis*. Presently the valid name is *Solenocera crassicornis*.



Solenocera crassicornis

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Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Solenocera crassicornis* is widely distributed throughout the coastal belt of Bangladesh. Based on above features, and in the absence of any major threat, the species is considered to be of Least Concern.

Date Assessed: 20 August 2014

History

Regional Status: This species has not yet been assessed in Bangladesh.

Geographic Range

Global: *Solenocera crassicornis* is distributed in Indo-West pacific region including Bangladesh, China, India, Japan,

New Guinea, Pakistan and Sri Lanka (Carpenter and Niem 1998).

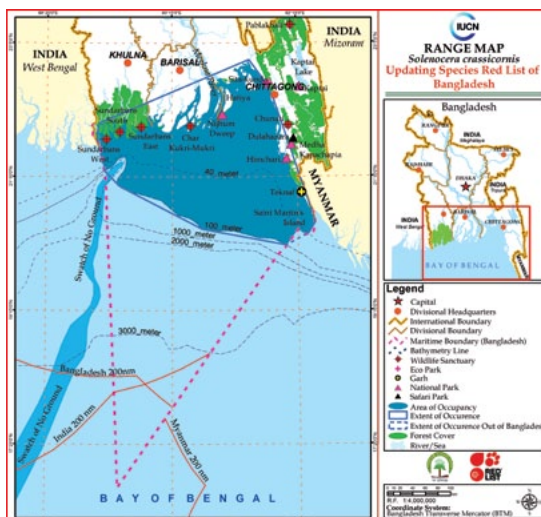
Bangladesh: *Solenocera crassicornis* is found throughout the coastal region of Bangladesh up to 85 m. depth of Bay of Bengal.

EOO: 64,962 km²

AOO: 50,756 km²

Habitat and Ecology

Solenocera crassicornis inhabit muddy bottoms close to the shore at depths from 20 to 80 m and feed on small zooplanktons, phytoplanktons and debris.



Assessor: Md. Sagir Ahmed

Solenocera hextii

Species ID: CR0020

LEAST
CONCERN
<LC>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	SOLENERIDAE

Scientific Name *Solenocera hextii* Wood-Mason and Alcock, 1891

English Name: Deep Sea Mud Shrimp

Bengali Name: Kada Chingri

Synonym/s: None

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least concern (LC) ver 3.1

Justification: *Solenocera hextii* is available in the vast marine water bodies of Bangladesh. No record of its population decline has been observed. Due to the absence of any major threat and the wide availability of the species, it falls to the Category of Least Concern.

Date Assessed: 26 June 2014

History

Regional Status: *Solenocera hextii* has not been assessed in Bangladesh.

Geographic Range

Global: The species is available in Indo-West Pacific region Gulf of Aden to Bay of Bengal (Holthuis 1980, DoF 2013)

Bangladesh: *Solenocera hextii* is found in the Bay of Bengal in Bangladesh.

EOO: 74,200 km²

AOO: 60,683 km²

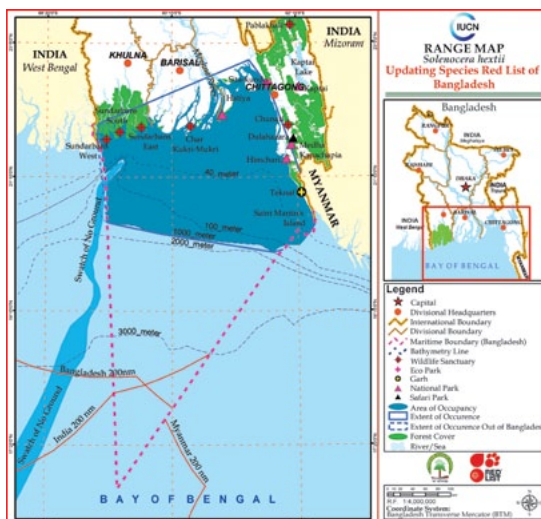


Solenocera hextii

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Habitat and Ecology

Solenocera hextii is a bottom dwelling omnivore, feeds on decomposing plants and animals, small worms, insects and their larvae. It is found up to a depth 120 m to 505 m of marine water.



Assessor: Mohd. Golam Quader Khan

Solenocera indicus

Species ID: CR0019



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	SOLENERIDAE

Scientific Name: *Solenocera indicus* Nataraj, 1945
English Name: Coastal Mud Shrimp, Red Prawn
Bengali Name: Lal/Kada Chingri, Chama Chingri, Sora Chingri
Synonym/s: *Solenocera crassicornis* H. Milne-Edwards, 1837
Solenocera sinensis Yu, 1937
Solenocera subnuda Kubo, 1949
Solenocera kuboi Hall, 1956

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least concern (LC) ver 3.1

Justification *Solenocera indicus* has widespread distribution in Bangladesh. It is found in bottom mud of marine and brackish water bodies in Patuakhali, the Sundarbans and the Bay of Bengal up to 40 m depth. There is no record of declining in its population. Therefore, based on the present abundance and in absence of any major threats, the species is categorized as Least Concern (LC).

Date Assessed: 26 June 2014

History

Regional Status: The species has not been assessed before in Bangladesh.

Geographic Range

Global : The specie is available in Indo-West Pacific region Pakistan and India to the Malay Archipelago, China,



Solenocera indicus

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Japan; Singapore, Borneo, also available in Bangladesh (Mohamed 1967, Holthuis 1980, Carpenter and Niem 1998).

Bangladesh: The species is found in Patuakhali, the Sundarbans and the Bay of Bengal in Bangladesh.

EOO: 10,107 km²

AOO: 6,576 km²

Habitat and Ecology

Solenocera indicus probably burrows in mud during the daytime, feeds on decapod crustaceans, fish remains, molluscan shells, polychaete worms, sand, foraminiferans and small crustaceans (other than decapods). After spending early life stages in the sea, they progress toward the estuaries (during Jun-Oct); go back to the sea again before attaining sexual maturity. The shrimp inhabits the bottom mud of marine and brackish water bodies up to 40 m water depth.



Assessor: Mohd. Golam Quader Khan

Austrothelphusa transversa

Species ID: CR0096

LEAST
CONCERN
<LC>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	GECARCINUCIDAE

Scientific Name: *Austrothelphusa transversa* (von Martens, 1868)

English Name: Inland Freshwater Crab

Bengali Name: Kakra

Synonym/s: *Telphusa crassa* A. Milne-Edwards, 1869
Telphusa leichardti Miers, 1884

Taxonomic Notes: Bott (1969) included this species in *Holthuisana* (*Austrothelphusa*). This species was formerly included in the Parathelphusidae but has recently been reassigned to the Gecarcinucidae; Parathelphusidae is now regarded as a junior synonym of Gecarcinucidae (Klause *et al.* 2009).

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Austrothelphusa transversa* is likely to be more widespread than generally suggested. In the absence of any known major threat it is considered to be Least Concern.

Date Assessed: 20 November 2014

History

Regional Status: *Austrothelphusa transversa* was not assessed in Bangladesh.

Geographic Range

Global: *Austrothelphusa transversa* is found in



Austrothelphusa transversa

© Muntasir Akash

Bangladesh. The species mostly occurs in Western Australia. The crab is also reported from India, Myanmar and Thailand (Rahman *et al.* 2008).

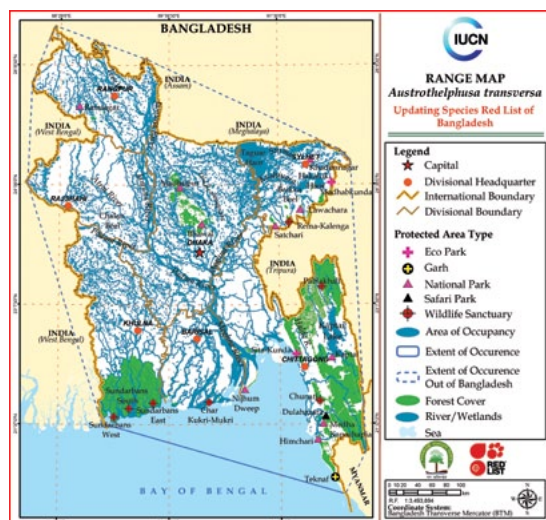
Bangladesh: The species is found in all water bodies but only recorded so far is from Manikgonj District.

EOO: 2,17,468 km²

AOO: 11,964 km²

Habitat and Ecology

It is found in freshwater bodies such as rivers, swamps, beels, canals etc. and occasionally, farm dams and paddy fields during summer. *Austrothelphusa transversa* is an omnivore in nature, constructs burrows in clay soils in the banks of rivers and creeks, swamps, farm dams and drainage channels in the dry season if its habitat dries up. It is able to tolerate loss of almost half of its body water. This species can survive long periods of drought in its burrows and emerges from the burrows in large numbers when the rains start.



Assessor: Mst. Kaniz Fatema

Associate Assessor/s: Mostafa Ali Reza Hossain

Pyxidognathus fluviatilis

Species ID: CR0107



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	GRAPSIDAE

Scientific Name: *Pyxidognathus fluviatilis*, (Alcock, 1895)
English Name: Not known
Bengali Name: Not known
Synonym/s: Not known
Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Pyxidognathus fluviatilis* is distributed in several locations of Bangladesh. Though, no information is available on the population size of this species from Bangladesh waters, the Extent of Occurrence and the Area of Occupancy are found to be larger than the threshold for Vulnerable, as well as the sub-criteria of this section that do not support any Threatened status. Therefore, the species has been assessed as Least Concern.

Date Assessed: 22 December 2014

History

Regional Status: This taxon has not been assessed before in Bangladesh.

Geographic Range

Global: The species is available in Bangladesh and India (Ghosh 1998, Rahman *et al.* 2008).

Bangladesh: The species recorded from hill streams of Himchari in Cox's Bazar and some freshwater ecosystem



Pyxidognathus fluviatilis

© Md. Mizanur Rahman

of Manikgonj and Thanchi Upazila of Bandarban. (Rahman *et al.* 2008, Sarker *et al.* 2012).

EEO: 24,188 km²

AOO: 1,103 km²

Habitat and Ecology

Pyxidognathus fluviatilis lives in hole or submerged sticks. Occurs in rivers, beels, and canals. The specie is also found in brackish water and hill streams. It is omnivorous in nature, feeds on algae, shrimp, bloodworms and mosquito larvae, even vegetables. Molting is a very stressful period for this crab and it may die under the stress (Rahman *et al.* 2008).



Assessor: Mostafa Ali Reza Hossain

Varuna litterata

Species ID: CR0111

LEAST
CONCERN
<LC>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	GRAPSIDAE

Scientific Name: *Varuna litterata* Fabricius, 1798

English Name: Oceanic Paddler Crab; Herring Bow Crab

Bengali Name: Guli Corol

Synonym/s: *Trichopus (Trichopus) litteratus* de Haan, 1833-1849 (1835)

Varuna tomentosa Pfeiffer, 1889

Alpheus litteratus Weber, 1795

Taxonomic Notes: *V. litterata* is often confused with *V. yui* due to its external similarity and can only be distinguished effectively by means of their male gonopods.

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: Population size of *Varuna litterata* is not known. The species is recorded from the River Meghna and Sangu. The species is likely to be more widespread in the river mouth and mangroves of Bangladesh. In view of this wide distribution and in the absence of any known major threat the species is considered as Least Concern.

Date Assessed: 20 January 2015

History

Regional Status: *Varuna litterata* has never been assessed in Bangladesh.

Geographic Range

Global: *Varuna litterata* is distributed in West Indian Ocean, Bay of Bengal and Indo-pacific region. It is native



Varuna litterata

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in Bangladesh, Comoros, East Africa, French Polynesia, India, Kenya, Madagascar, Mauritius, Mozambique, Somalia, South Africa and Tanzania (Holthuis 1980, Carpenter and Niem 1998).

Bangladesh: In the recent past, this euryhaline species is recorded by the IUCN Crustacean Exploration Team from the River Halda (11 November 2014) and by ESPA-Delta Biodiversity Research Team from the river Meghna (19 April 2015).

EEO: 21,071 km²

AOO: 1,960 km²

Habitat and Ecology

Varuna litterata usually inhabits the mangroves, estuarine and freshwater environments, in shallow sub-tidal regions and usually found under rocks, logs and dead leaves. It lives in burrows along the embankments or sides of pools, creeks and shallow banks (Devi *et al.* 2013). Large or ovigerous specimens can be found in intertidal areas, frequently associated with floating clumps of brown algae (Holthuis 1980, Carpenter and Niem 1998, Devi *et al.* 2013). The crab is a bottom dwelling predatory omnivore and feeds on crustacean and other animal remains, plant remains, sand and debris. It has strong osmoregulation capability even in 150 ppt seawater (Devi *et al.* 2013).

Assessor: Muhammad Abdur Rouf

Associate Assessor: Md. Noman Siddiqui



Ocypode ceratophthalma

Species ID: CR0097

LEAST CONCERN
<LC>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	OCYPODIDAE

Scientific Name: *Ocypode ceratophthalma* (Pallas, 1872)
English Name: Horned Ghost Crab, Horn-eyed Ghost Crab
Bengali Name: Lal Kakra

Synonym/s: *Cancer ceratophthalmus* Pallas, 1772
Cancer caninus Herbst, 1782
Ocypode rhombea Weber, 1795
Ocypode longicornuta Dana, 1852
Ocypode brevicornis var. *longicornuta* Dana, 1852
Ocypoda mcleayana Hess, 1865

Taxonomic Notes: *Ocypode ceratophthalma* and *Ocypode macrocera* both are red colors ghost crabs; both the species need more clarification for sharp identification. The species-*Ocypode macrocera* from the Indian part of Sundarban (Dubey *et al.* 2013) has the similarities with the description, colour habitat and niche of the species *Ocypode ceratophthalma* from Bangladesh.



Ocypode ceratophthalma © 2016 Guido & Philippe Poppe - www.conchology.be

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: This species is found in the intertidal sandy beach of Cox's Bazar and generally reported from beaches along the Bay of Bengal, Bangladesh (Shafi and Quddus 1982) and also recorded from the beach of Saint Martin's Island and Chokoria, Moheshkhali, Kutubdia, Sonadia, and Dubla Islands (Hossain 2010). Due to wide distribution and without any major threat the species is considered as Least Concern.

Date Assessed: 23 December 2014

History

Regional Status: *Ocypode ceratophthalma* was not assessed before in Bangladesh.

Geographic Range

Global: *Ocypode ceratophthalma* occurs in the Indo-Pacific region (except the Red Sea); from the coast of East Africa to the Philippines and from Japan to the Great Barrier Reef; Pacific Islands to as far east as Polynesia and Clipperton Island, Bangladesh, India, Myanmar, Sri Lanka and Thailand (Carpenter and Niem 1998, Sakai and Türkay 2013).

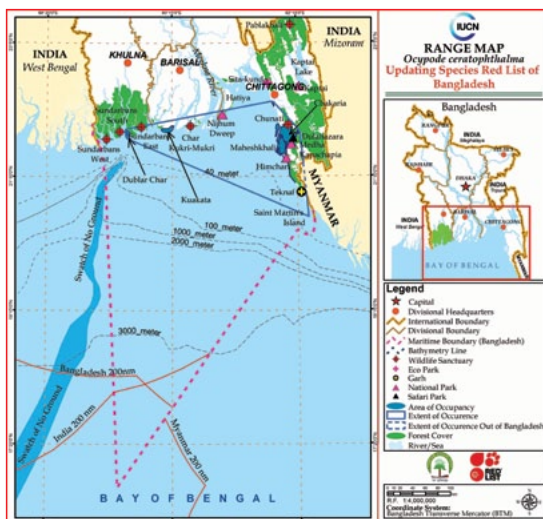
Bangladesh: The crab is available in the intertidal sandy beaches almost all along the Bay of Bengal coast in Bangladesh.

EOO: 27,198 km²

AOO: 1,212 km²

Habitat and Ecology

Ocypode ceratophthalma is a terrestrial species that lives in the lower part of the supralittoral zone of sandy beaches. It excavates deep burrows (Carpenter and Niem 1998). It is scavenger, predatory and omnivorous in nature feeding on mollusk, turtle hatching, smaller crustaceans and fishes.



Assessor: Mohammad Ali Azadi

Ocypode macrocera

Species ID: CR0098

LEAST
CONCERN
<LC>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	OCYPODIDAE

Scientific Name: *Ocypode macrocera* (H. Milne Edwards, 1852)

English Name: Red Ghost Crab

Bengali Name: Lal Kakra

Synonym/s: *Ocypode portonovoensis* Kumar and Tiwari, 1964
Ocypode mortoni George 1982

Taxonomic Notes: *Ocypode macrocera* and *O. ceratophthalma* both are red coloured ghost crabs and needs more clarifications for properseparation. The species-*Ocypode macrocera* narrated from the Indian part of Sundarban (Dubey *et al.* 2013, Haque and Chowdhury 2014) bears the similarities with the description of colour, habitat and niche of the species *Ocypode ceratophthalma* from Bangladesh.



Ocypode macrocera

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Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: This species seems to be available with moderate abundance (pers. obs.) in the intertidal sandy beach of Cox's Bazar, Sundarban mangroves and other coastal sandy beaches of the Bay of Bengal, Bangladesh; but no published or unpublished works on *Ocypode macrocera* from Bangladesh were noted, although some reports were found on a similar semi-terrestrial crab the *Ocypode ceratophthalma* (Shafi and Quddus 1982, Hossain 2010). However, mass presence of this species was noticed in Indian parts of Sundarban and South East Coast of India (Dubey *et al.* 2013 and 2014). The species is presumably widely distributed in the sandy area of intertidal zones of the Bay of Bengal, Bangladesh, therefore, it is considered as Least Concern.

Date Assessed: 23 December 2014

History

Regional Status: *Ocypode macrocera* was not assessed before in Bangladesh.

Geographic Range

Global: *Ocypode macrocera* is found in the sandy shores of tropical and subtropical regions of the world (Hossain 2010, Varadharajan and Soundarapandian 2012, Dubey *et al.* 2013, 2014, Haque and Choudhury 2014).

Bangladesh: It is found in the intertidal sandy beaches in the Bay of Bengal coast of Bangladesh.

EOO: 43,140 km²

AOO: 1,121 km²

Habitat and Ecology

Ocypode macrocera is omnivorous and scavenger, feeding on organic detritus and worms, mollusk, smaller crustaceans, fish, etc. It is active both during day and night and involved in burrowing activities after receding the tides daily. The activities include excavation of sand from within the burrow and then scatter it on the shore (Haque and Choudhury 2014). It inhabits inter-tidal sandy beach of coastal and estuarine areas.



Assessor: Mohammad Ali Azadi

Charybdis hellerii

Species ID: CR0008

LEAST CONCERN
<LC>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PORTUNIDAE

Scientific Name: *Charybdis hellerii* (A. Milne-Edwards, 1867)

English Name: Pacific Swimming Crab, Swimming Crab

Bengali Name: Shantaru Kankra

Synonym/s: *Charybdis merguensis* de Man, 1887

Goniosoma hellerii A. Milne-Edwards 1867

Charybdis (Goniosoma) merguensis Steintz, 1929

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Charybdis hellerii* occurs in the coastal waters of Bangladesh and based on its wide distribution and the absence of any known, major threats, the species is considered as Least Concern.

Date Assessed: 10 June 2014

History

Regional Status: *Charybdis hellerii* was not assessed before in Bangladesh.

Geographic Range

Global: *Charybdis hellerii* is distributed in Australia, Hawaii, India, Japan, Myanmar, New Caledonia, Pakistan, Philippines and Sri Lanka (Wee and Ng 1995).

Bangladesh: *Charybdis hellerii* is found in the coastal and marine waters of Bangladesh.

EOO: 38,262 km²

AOO: 3,778 km²

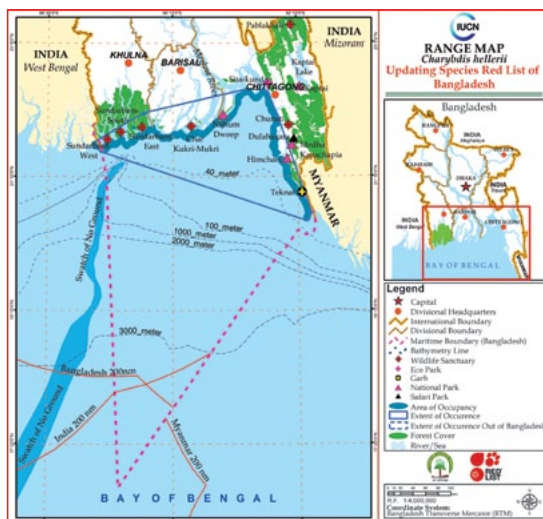


Charybdis hellerii

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Habitat and Ecology

Charybdis hellerii is a free swimming carnivore crab and feeds on small invertebrates. Adult *C. hellerii* prefers soft surface and also occurs in rocky bottom and in living corals of coastal waters and ranges from the intertidal zone to 51 m depth.



Assessor: Md. Sirajul Islam

Portunus pelagicus

Species ID: CR0011

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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PORTUNIDAE

Scientific Name: *Portunus pelagicus* (Linnaeus, 1758)

English Name: Blue Swimming Crab, Flower Crab

Bengali Name: Nilav Shantaru Kankra

Synonym/s: *Cancer pelagicus* Linnaeus, 1758

Cancer pelagicus Forskal, 1775

Cancer cedonulli Herbst, 1794

Portunus denticulatus Marion de Procé, 1822

Portunus (Poleptunus) pelagicus De Haan, 1850

Portunus trituberculatus Miers, 1876

Neptunus pelagicus Alcock, 1899

Portunus mauritianus Ward, 1942

Lupa pelagicus Barnard, 1950

Portunus (Portunus) pelagicus Sakai, 1976

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Portunus pelagicus* widely occurs in the coastal waters of various islands and in the Sundarbans of Bangladesh. Due to its wide distribution and without any major threats, the species is considered as Least Concern.

Date Assessed: 10 June 2014

History

Regional Status: *Portunus pelagicus* was not assessed before in Bangladesh.



Portunus pelagicus

© Md. Enamul Hoq

Geographic Range

Global: *Portunus pelagicus* inhabits the Indo-Pacific waters from Australia, Japan, Philippines, Tahiti, Westward to the Red Sea and East Africa (Ng 1998).

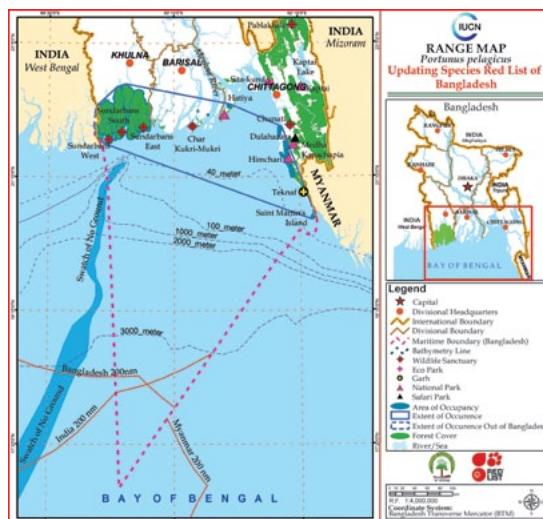
Bangladesh: *Portunus pelagicus* is widely found in the coasts of Cox's Bazar, Kutubdia, Moheshkhali, Sonadia, Saint Martin's Island and the Sundarban areas of Bangladesh.

EOO: 38,275 km²

AOO: 6,174 km²

Habitat and Ecology

Portunus pelagicus is a benthic to semi-pelagic crab with carnivorous feeding habit and feeds on small fishes and invertebrates. It attains maturity in 1 year, female carry a loose mass of numerous eggs on the ventral side of the thorax. It prefers sandy to sandy-muddy substrates in shallow waters down to a depth of 50 m, including areas near reefs, mangroves, and in sea grass and algal beds. Juveniles tend to occur in shallow intertidal areas.



Assessor: Md. Sirajul Islam

Scylla olivacea

Species ID: CR0089



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PORTUNIDAE

Scientific Name: *Scylla olivacea* (Herbst, 1796)

English Name: Mud Crab, Orange Mud Crab

Bengali Name: Shila Kakra, Chadi Kearaa, Jati Kakra, Bara Kakra, Sabuj Kakra, Maita Kakra

Synonym/s: *Scylla olivacea* Herbst, 1796
Cancer olivacea Herbst, 1796

Taxonomic Notes: Ahmed *et al.* (2005) claimed that *Scylla olivacea* was wrongly reported as *S. serrata* in Bangladesh by some authors (Shafi and Quddus 1982, Chowdhury and Hafizuddin 1991, Ahmed 1992, Khan and Alam 1992, Zafar and Siddiqui 2000, Siddiqui and Zafar 2002).

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: This species is widely present in mangrove ecosystems, coastal rivers and estuaries of Bangladesh. Due to wide distribution and without any major threat, *Scylla olivacea* is considered as Least Concern.

Date Assessed: 27 November 2014

History

Regional Status: *Scylla olivacea* has not been assessed in Bangladesh.

Geographic Range

Global: *Scylla olivacea* is moderately wide spread in South China sea, Indian and Pacific Ocean. It is found in



Scylla olivacea

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Australia, Bangladesh, China, India, Indonesia, Malaysia, Pakistan, Philippines, Taiwan, Thailand, Singapore and Viet Nam (Carpenter and Niem 1998, Eldredge and Smith 2001).

Bangladesh: The species is abundant in Sunderban canals, mangrove forests, and estuarine rivers of Khulna. This crab is also abundantly occurring in the coastal rivers of Cox's Bazar, Chittagong, Noakhali, Bhola, Barisal, Patuakhali, Bagherhat, Khulna and Satkhira. The inshore islands of Moheshkhali, Kutubdia, Sandwip, Hatia and Dubla support good population.

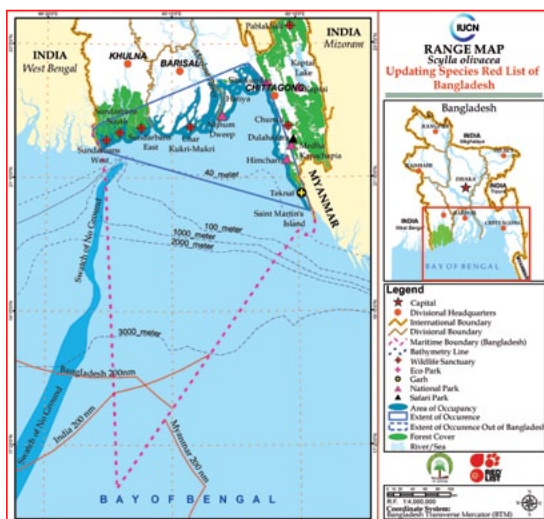
EOO: 42,297 km²

AOO: 6,896 km²

Habitat and Ecology

This crab is a bottom dweller, feeds on fish meat and hard parts, mollusk, crustacean, organic matter, inorganic sand-shell, plant, algae and sea grasses. It is cannibalistic in nature. Until 1977 it was virgin stock, Mud crab trade started since 1977-78. During 2006-2007, crab export received the third rank among the fish and fisheries items export earnings of the country (Chandra *et al.* 2012).

Assessor: Mohammad Ali Azadi



Scylla serrata

Species ID: CR0090



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PORTUNIDAE

Scientific Name: *Scylla serrata* (Forskål, 1775)

English Name: Giant Mud Crab, Mangrove Crab

Bengali Name: Chadi Kearaa, Jati Kakra, Shila Kakra

Synonym/s: *Cancer serrata* Forskål, 1775

Lupa lobifrons H. Milne Edwards, 1834

Achelous crassimanus MacLeay, 1838

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: This species is widely available in coastal tidal rivers, mangrove ecosystems and estuaries of Bangladesh. Due to wide distribution and no known threat, *Scylla serrata* is assessed as Least Concern.

Date Assessed: 27 November 2014

History

Regional Status: *Scylla serrata* has not been assessed in Bangladesh.

Geographic Range

Global: *Scylla serrata* is widely distributed species in Indian Ocean, Red Sea and Pacific Ocean, native to Indo-Pacific and found as far as South Africa; east to Tahiti, French Polynesia, as far north as Okinawa, Japan and South to Sydney Australia; Southeast and East Asia. This species is also introduced in the Hawaii Archipelago (Carpenter and Niem 1998).



Scylla serrata

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Bangladesh: The crab is available in the coastal tidal rivers of Cox's Bazar, Chittagong, Bhola, Noakhali, Barisal, Patuakhali, Bagerhat, Khulna and Satkhira Districts. The inshore islands of Moheshkhali, Kutubdia, Sandwip and Hatia. Sundarban Mangroves of Chakaria and Khulna do support it too (Shafi and Quddus 1982, Ahmed 1992, Azam *et al.* 1998, Ahmed *et al.* 2005).

EOO: 71,069 km²

AOO: 8,912 km²

Habitat and Ecology

Scylla serrata is associated with mangrove forests inundated with full saline oceanic water most of the part of the year. It can also tolerate reduced salinity. It is a bottom dwelling species feeding on organic and inorganic matters and also on live shrimps and small fishes, mollusk, plant, algae and sea grass. This crab is cannibalistic in nature.



Assessor: Mohammad Ali Azadi

Acanthopotamon martensi

Species ID: CR0093



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	POTAMIDAE

Scientific Name: *Acanthopotamon martensi* (Wood-Mason, 1875)

English Name: Not known

Bengali Name: Not known

Synonym/s: *Paratelpusa martensi* Wood-Mason, 1875

Acanthopotamon fungosum Alcock, 1909

Acanthopotamon panningi Bott, 1966

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: In view of its wide distribution and in the absence of any known major threat *Acanthopotamon martensi* is considered as Least Concern.

Date Assessed: 20 November 2014

History

Regional Status: *Acanthopotamon martensi* was not assessed before in Bangladesh.

Geographic Range

Global: *Acanthopotamon martensi* is found in Bangladesh, India and Myanmar (Bott 1970, Yeo and Ng 2007, Rahman *et al.* 2008).

Bangladesh: The species is widely distributed in the Chakaria Sundarban, Jessore and Manikgonj (Shibalaya,



Acanthopotamon martensi

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Harirampur) and possibly in other waterbodies in the country.

EOO: 54,822 km²

AOO: 7,754 km²

Habitat and Ecology

Acanthopotamon martensi is omnivorous and feeds on remains of other crabs, mollusks, insects and vegetation and detritus material. It lives on the bottom of a water body and abundant in shallow water bodies, such as beels, canals, etc., during the summer. To escape from the dry season it constructs burrows in clay soil, which it seals with mud. It creates burrow closer to water level. The humid air trapped inside the burrows give crabs enough moisture to survive until the wet weather returns.



Assessor: Muhammad Abdur Rouf

Associate Assessor/s: Sheik Istiak Md. Shahriar

Lobothelphusa woodmasoni

Species ID: CR0095



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	POTAMIDAE

Scientific Name: *Lobothelphusa woodmasoni* (Rathbun, 1905)

English Name: Not known

Bengali Name: Not known

Synonym/s: *Parathelphusa edwardsi* Wood-Mason, 1875
Potamon (Parathelphusa) woodmasoni
Rathbun, 1905

Parathelphusula milneedwardsi Alcock, 1909

Parathelphusula milneedwardsi Alcock, 1909

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Lobothelphusa woodmasoni* is likely to be more widespread than records suggest. In the absence of any known, major threat it is considered as Least Concern.

Date Assessed: 25 February 2015

History

Regional Status: *Lobothelphusa woodmasoni* was not assessed before in Bangladesh.

Geographic Range

Global: *Lobothelphusa woodmasoni* is found in India, Sri Lanka and Myanmar (Rahman *et al.* 2008).

Bangladesh: The specie is thinly distributed all over Bangladesh but commonly found in estuaries of the



Lobothelphusa woodmasoni

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Chakaria Sundarban areas.

EOO: 2,19,205 km²

AOO: 11,245 km²

Habitat and Ecology

Lobothelphusa woodmasoni is nocturnal, omnivorous and feeds on remains of other crabs, mollusks, insects, vegetation and detritus material. It starts to populate at the beginning of the rainy season when water remains turbid and then a large number of juveniles are found. Before breeding, moulting occurs when its body colour becomes glossy. It is found in the bottom of a water body and abundant in shallow water bodies, such as paddy fields, beels, canals, etc. during summer. The crab constructs burrow closer to water level to trap moisture needed for its survival.



Assessor: Mohd. Golam Quader Khan

Sartoriana spinigera

Species ID: CR0094



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	POTAMIDAE

Scientific Name: *Sartoriana spinigera* (Wood-Mason, 1871)

English Name: Not known

Bengali Name: Not known

Synonym/s: *Paratephusa spinigera* Wood-Mason, 1871

Taxonomic Notes: Bott (1970) included it in the subfamily Liotelphusinae of the Gecarcinucidae. Yeo *et al.* (2007) transferred it to the family Parathelphusidae but has recently been reassigned to the Gecarcinucidae; Parathelphusidae is now regarded as a junior synonym of Gecarcinucidae (Klause *et al.* 2009).

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Sartoriana spinigera* is widely distributed with presumably large population all over Bangladesh and in the absence of any known major threat, it is assessed as Least Concern.

Date Assessed: 20 November 2014

History

Regional Status: *Sartoriana spinigera* was not assessed before in Bangladesh.

Geographic Range

Global: *Sartoriana spinigera* is found in Bangladesh, India, Myanmar, Pakistan etc. The species is native to Bangladesh, India (Assam, Uttar Pradesh, West Bengal);



Sartoriana spinigera

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Pakistan (Rahman *et al.* 2008, Klause *et al.* 2009 and Yeo and Ng 2012).

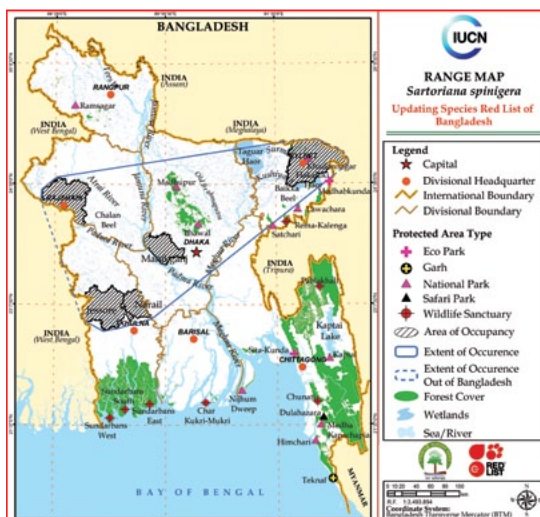
Bangladesh: It is found in the Districts of Manikgonj, Narail, Jessore, Sylhet and Rajshahi.

EOO: 62,313 km²

AOO: 10,816 km²

Habitat and Ecology

Sartoriana spinigera is omnivorous in nature, mostly consumes detritus material, vegetation, mollusks, aquatic insects and other crustaceans. It is abundant in shallow water, such as paddy fields, beels, canal, ponds, etc. and rarely in rivers.



Assessor: Muhammad Abdur Rouf

Associate Assessor/s: Sheik Istiak Md. Shahriar

Episesarma mederi

Species ID: CR0109

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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	SESARMIDAE

Scientific Name: *Episesarma mederi* (H. Milne Edwards, 1853)

English Name: Thai Vinegar Crab

Bengali Name: Korol

Synonym/s: *Sesarma (Sesama) taeniolatum*, White, 1847

Sesarma (Sesama) mederi, Milne Edwards
H., 1853

Episesarma mederi, H. Milne Edwards, 1853

Sesarma taeniolata, Miers, 1877

Sesarma (Episesarma) taeniolata, de Man, 1895

Taxonomic Notes: The species was originally described as *Sesarma taeniolatum* by White in 1847. Milne Edwards in 1853 adopted the species as *mederi* and Miers in 1877 considered the species as *taeniolata*. However, de Man in 1895 adopted the genus as *Episesarma*, finally the species is described as *Episesarma mederi* by Milne Edwards in 1853.



Episesarma mederi

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Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Episesarma mederi* occurs in Sundarban Mangrove Forests and other natural and planted mangrove forests in south-west Bangladesh. This crab is a localized species in Bangladesh coast with no major threats, hence assessed as Least Concern.

Date Assessed: 23 January 2015

History

Regional Status: *Episesarma mederi* was not assessed before in Bangladesh.

Geographic Range

Global: *Episesarma mederi* is found in India - Ratnagiri (Chhapgar 1957), Bay of Bengal, Andaman Islands (Alcock 1900) and Burma - Maungmagan near Tavoy (Chopra and Das 1937).

Bangladesh: It is found in Sundarban Mangrove Forests of Bangladesh (Saifuddin *et al.* 2010) and Char Kukri Mukri of Bhola district and Sonar Char of Patuakhali district (IUCN Crustacean Red List Team, October 2015).

EOO: 9,541 km²

AOO: 4,159 km²

Habitat and Ecology

Episesarma mederi is a sandy mud bottom burrower and exclusively mangrove tree climbing species. It feeds on leaves and lives within burrows.



Assessor: Md. Golam Mustafa

Episesarma versicolor

Species ID: CR0110



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	SESARMIDAE

Scientific Name: *Episesarma versicolor* Tweedie, 1940

English Name: Violet Vinegar Crab

Bengali Name: Not known

Synonym/s: *Episesarma palawanense* (Rathbun, 1914)
Episesarma crebrestriatum (Tesch, 1917)
Episesarma, de Man, 1895

Taxonomic Notes: The species was originally described as *Episesarma versicolor* by Herbst in 1783. However, de Man in 1895 adopted the genus as *Episesarma* and Rathbun described the species as *palawanense* in 1914. Later Tesch in 1917 described the species as *crebrestriatum*, finally the species has been described as *Episesarma versicolor* by Tweedie Edwards in 1940.

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Episesarma versicolor* occurs in Sundarban Mangrove Forest in south-west Bangladesh. The species is abundant in the Sundarban and other mangrove areas of Bangladesh with no known major threat. Therefore, the species is assessed as Least Concern.

Date Assessed: 17 February 2015

History

Regional Status: *Episesarma versicolor* was not assessed before in Bangladesh.



Episesarma versicolor

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Geographic Range

Global: *Episesarma versicolor* is distributed in South and Southeast Asia, Southern China and Australia (Carpenter and Niem 1998, Naiyanetr 2007, Tiensongrassamee 2009, Jimmy 2009).

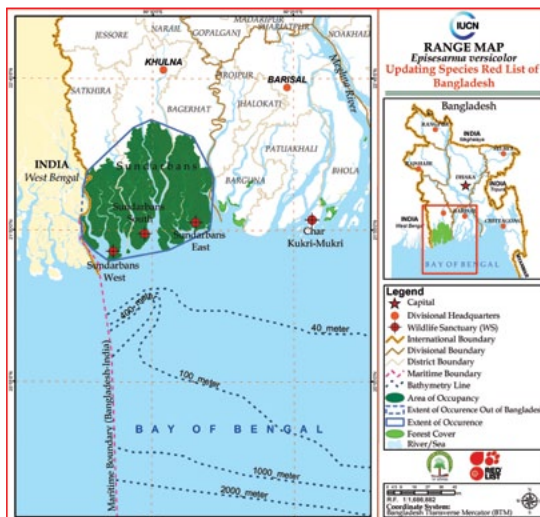
Bangladesh: It is found in the mangrove forests of Bangladesh.

EOO: 6,298 km²

AOO: 4,114 km²

Habitat and Ecology

Episesarma versicolor inhabits mangrove areas, prefers to dig burrows at the base of trees or at mud lobster (*Thalassina*) mounds and usually climbs mangrove trees. It is an herbivore and feeds on leaves.



Assessor: Md. Golam Mustafa

Perisesarma bidens

Species ID: CR0108



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	SESARMIDAE

Scientific Name: *Perisesarma bidens* (DeHaan, 1835)
English Name: Red Clawed Crab, Red Claw Crab, Red Crab
Bengali Name: Not Known
Synonym/s: *Grapsus bidens* De Haan, 1835
Chiromantes bidens (De Haan, 1835)
Sesarma bidens (De Haan, 1835)
Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: Past or present population size of *Perisesarma bidens* is not known. No author has studied the species inside Bangladesh territory in the past. The IUCN Crustacean Red List Exploration Team, however, found the species in abundance in the mangrove forests, namely Char Kukri Mukri of Bhola District and Sonar Char of Patuakhali District in 21-26 October, 2015. The species is likely to be more widespread in over all natural and planted mangrove forest of Bangladesh. In view of this wide distribution and in the absence of any known major threat the species is considered as Least Concern.

Date Assessed: 22 December 2014

History

Regional Status: *Perisesarma bidens* was not assessed before in Bangladesh.



Perisesarma bidens

© IUCN/ Mohammed Noman

Geographic Range

Global: *Perisesarma bidens* is distributed in Indo-Pacific - Zanzibar to Japan and Fiji (Hartnoll 1975, Shokita *et al.* 2000).

Bangladesh: Red Clawed Crab is found in the Sundarban Mangrove forest and other natural and planted mangroves of Barisal, Patuakhali and Bhola districts.

EOO: 4,717 km²

AOO: 913 km²

Habitat and Ecology

Perisesarma bidens is not fully aquatic and must have access to land. It prefers brackish conditions. The crab is an excellent climber. It is an omnivore and feeds on brine shrimp, bloodworms, blanched vegetables and nearly anything else it can get in its claws due to its opportunistic behavior.



Assessor: Mostafa Ali Reza Hossain

Clibanarius longitarsus

Species ID: CR0141



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	DIOGENIDAE

Scientific Name: *Clibanarius longitarsus* (de Haan, 1849)

English Name: Blue-striped Hermit Crab

Bengali Name: Not known

Synonym/s: *Pagurus asper* H. Milne Edwards, 1848

Taxonomic Notes: Two of the authors described two subspecies - *Clibanarius longitarsus* var. *trivittata* Lanchester, 1902 and *Clibanarius longitarsus* var. *unicolor* Buitendijk, 1937. However, latter the two were not recognized as valid sub-species and accepted as *Clibanarius longitarsus*.

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Clibanarius longitarsus* is abundant in the Sundarban Mangrove Forest. The species is likely to be more widespread than record suggests. In the absence of any known major threat, it is considered as Least Concern.

Date Assessed: 28 August 2015

History

Regional Status: *Clibanarius longitarsus* has not been assessed in Bangladesh.

Geographic Range

Global: The species is generally found in the Indo West-pacific tropical mangrove forests. It is available in the Red Sea, Indian Ocean, northern Australia, Thailand,



Clibanarius longitarsus

© Mostafa A R Hossain

Indonesia, Viet Nam, Singapore, Malaysia, Taiwan and Japan (Rahayu 1996, Ramesh *et al.* 2009, Sea Life Base 2015).

Bangladesh: It is available in the Sundarbans Mangrove Forest (De Haan, 1849). The first time recording of the blue-striped hermit crab, *C. longitarsus* in Bangladesh was made on 18 April 2015 from Sundarban Mangrove Forest at Kalagachhia, Satkhira Forest Range in an exploration survey by the IUCN Updating Red List Bangladesh (Crustacean) Team and identified by M A R Hossain, Lead Assessor of the Crustacean Group.

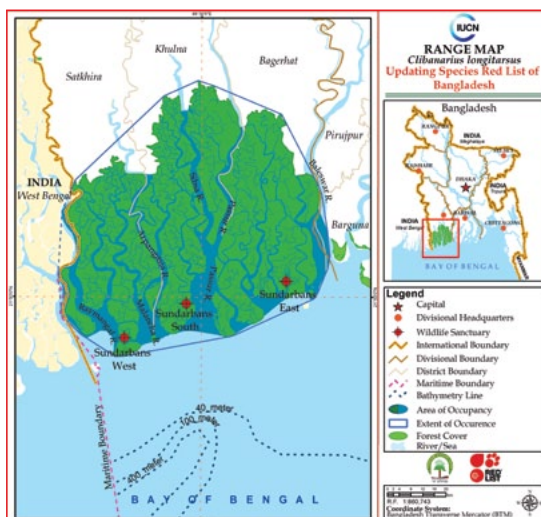
EOO: 6,450 km²

AOO: 5,617 km²

Habitat and Ecology

Clibanarius longitarsus occurs in open and uncovered areas of the mangroves, particularly in and around the mangrove roots, often nearer the seafront at the edge of sandy areas. Unlike typical crabs, the posterior part of *Clibanarius longitarsus* bodies is soft and as such it uses discarded shells for protection (Ramesh *et al.* 2009). Like other Hermit crabs, *C. longitarsus* never kills the original occupant of the shell. It only uses dead shells. *C. longitarsus* is easily identified by its blue-striped legs and can be spotted by looking for fast-moving snail shells that rock back and forth instead of gliding smoothly over the mud. Like most hermit crabs, it is a scavenger, with a good sense of smell (Hossain *et al.* 2015).

Assessor: Mostafa Ali Reza Hossain



Balanus amphitrite

Species ID: CR0123



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MAXILLOPODA	SESILLIA	BALANIDAE

Scientific Name: *Balanus amphitrite* Darwin, 1854
English Name: Purple Acorn Barnacle
Bengali Name: Not known
Synonym/s: *Balanus amphitrite amphitrite* Darwin, 1854
Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Balanus amphitrite* is widely distributed and reported from different localities of Bangladesh including Bay of Bengal and Sundarban. Therefore, *Balanus amphitrite* is assessed as Least concern.

Date Assessed: 16 March 2015

History

Regional Status: *Balanus amphitrite* has never been assessed in Bangladesh.

Geographic Range

Global: *Balanus amphitrite* is a circumglobal species, widely distributed (cosmopolitan) in tropical and subtropical regions and commonly found in warmer temperate areas, tropical seas and intertidal areas (Newman and Ross 1976, Jones *et al.* 2000).

Bangladesh: It is found in the Sundarbans and Bay of Bengal in Bangladesh (Chowdhury 1995).



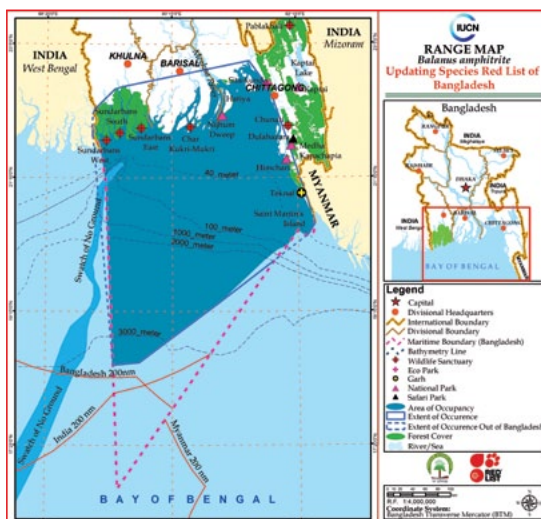
Balanus amphitrite

© www.boldsystems.org

EOO: 1,17,789 km²
AOO: 98,285 km²

Habitat and Ecology

The intertidal brackish water barnacle *Balanus amphitrite* is filter feeder consuming small and micro-sized particles e.g. bacteria, plankton, waste nutrients, etc. It is found in mangrove forests in warmer temperate areas- tropical seas and intertidal areas, beaches, mangroves, rocky shores, some deep water species attachment on any hard substratum including rocks, tree trunks, floating debris, buoys, ship hulls, etc. (Darwin 1854).



Assessor: Mst. Kaniz Fatema

Daphnia lumholtzi

Species ID: CR0129



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	BRANCHIOPODA	DIPLOSTRACA	DAPHNIDAE

Scientific Name: *Daphnia lumholtzi* Sars, 1885

English Name: Water Flea

Bengali Name: Not known

Synonym/s: Not known

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Daphnia lumholtzi* is commonly and widely found in different inland water bodies of Bangladesh. Based on its wide occurrence and no known major threat, the species is assessed as Least Concern.

Date Assessed: 19 March 2015

History

Regional Status: *Daphnia lumholtzi* was not assessed before in Bangladesh.

Geographic Range

Global: *Daphnia lumholtzi* is found in Asia, Australia and most of Africa (Siddiqui and Chandrasekhar 1996, Benzie 2005, Katharina and Tollrian 2009). The species is also introduced in North and South America (Sorensen and Sterner 1992, Zanata *et al.* 2003).

Bangladesh: The species is available in the fresh water bodies of Bangladesh (Hossain 1982, Mozumder *et al.*



Daphnia lumholtzi

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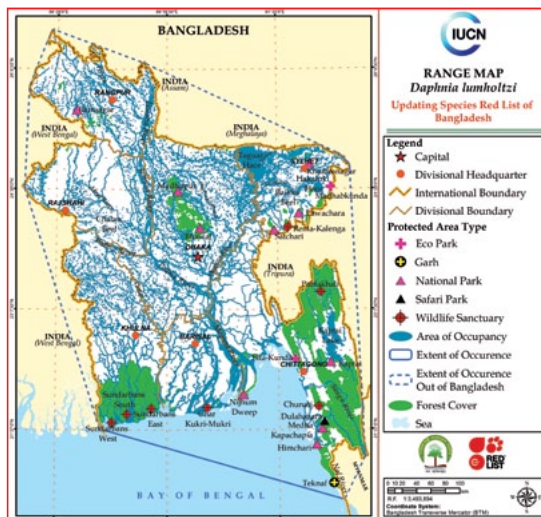
2012, Fernando and Kanduru 2013, Biodiversity Research Group of Bangladesh).

EOO: 2,17,468 km²

AOO: 11,857 km²

Habitat and Ecology

Daphnia lumholtzi is ubiquitous in inland aquatic habitats. This species mostly feeds on phytoplankton ranging from 1 to 25 micrometers in size, but will also eat foods that contain organic detritus, bacteria and protists which provide an excellent source of nutrients.



Assessor: Mohammed Noman

Associate Assessor/s: Selina Sultana

Daphnia magna

Species ID: CR0130

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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	BRANCHIOPODA	DIPLOSTRACA	DAPHNIIDAE

Scientific Name: *Daphnia magna* Straus, 1820

English Name: Water Flea

Bengali Name: Not known

Synonym/s: Not known

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Daphnia magna* occurs in the freshwater and semi-saline water bodies of Bangladesh. As no country-wide study has been conducted, based on the literatures available, its Extent of Occurrence is more than 28,918.12 km² when Area of Occupancy is estimated as 943.68 km², although that is expected to go up much further if proper studies are conducted. Based on these, the taxon is assessed as Least Concern.

Date Assessed: 15 March 2015

History

Regional Status: *Daphnia magna* has not been assessed before in Bangladesh.

Geographic Range

Global: *Daphnia magna* is found in northeastern United States, Western Europe, Asia and Africa (Hanski and Ranta 1983, Ebert 2005).



Daphnia magna

© Mahmuda Begum

Bangladesh: *Daphnia magna* is found in Mymensingh Sadar, Batiaghata, Khulana, Rajshahi Sadar and Bagerhat Sadar (Islam *et al.* 2010, Roy *et al.* 2010, Hussain *et al.* 2013, Islam and Chowdhury 2013).

EOO: 28,918 km²

AOO: 944 km²

Habitat and Ecology

Daphnia magna is a temperate freshwater species. This species is found in freshwater and brackish (up to 8 ppt. salinity) habitats including lakes, rivers, and temporary pools. Although it prefers temperatures between 18 and 22°C, it can tolerate a much broader ranges (Vanoverbeke *et al.* 2007). The species is a filter feeder zooplankton, filtration rates depend on temperature, body size, food density and quality, oxygen concentration, and water pH. It consumes algae, bacteria and detritus in the water and play a key part in aquatic food webs as prey to fishes and invertebrates (Buck *et al.* 2011).



Assessor: Mostafa Ali Reza Hossain

Cyclops nanus

Species ID: CR0128



Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MAXILLOPODA	CYCLOPIDA	CYCLOPIDAE

Scientific Name: *Cyclops nanus* (Sars, 1863)

English Name: Zooplankton, Water Flea

Bengali Name: Not known

Synonym/s: *Diacyclops nanus* (Sars, 1863)

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Least Concern (LC) ver 3.1

Justification: *Cyclops nanus* is widely distributed in inland waters including coast of Bangladesh. There is no major widespread threat to it. On the basis of its widespread occurrence the species is assessed as Least Concern.

Date Assessed: 19 March 2015

History

Regional Status: *Cyclops nanus* was not assessed before in Bangladesh.

Geographic Range

Global: *Cyclops nanus* is widely distributed globally in freshwater and brackish water ponds, lakes and lagoon etc. (Rylov 1948, Yeatman 1959, Evanko 1977).

Bangladesh: *Cyclops nanus* is available in freshwater and brackish water in Bangladesh (Naz and Najia 2008, Islam *et al.* 2010, Mozumder *et al.* 2012).



Cyclops nanus

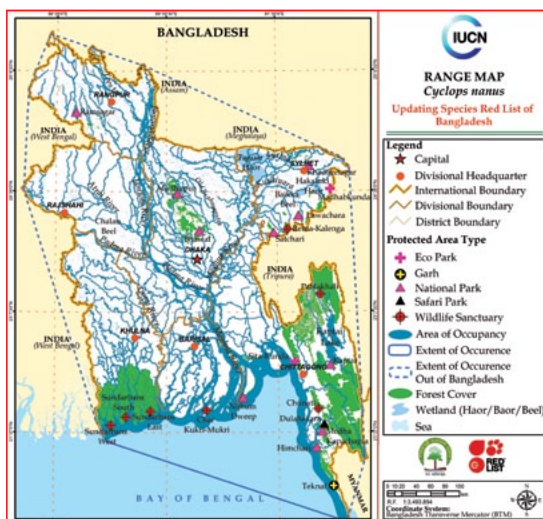
© Md. Moniruzzaman

EOO: 2,23,193 km²

AOO: 16,635 km²

Habitat and Ecology

Cyclops nanus lives along the plant-covered banks of stagnant and slow-flowing waters. It is abundant in a depth range between 0-100 m. It feeds on small fragments of plant material, animals or carrion in slow flowing waters.



Assessor: Md. Enamul Hoq





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Alpheus euphrosyne

Species ID: CR0066

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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	ALPHEIDAE

Scientific Name: *Alpheus euphrosyne* de Man, 1897

English Name: Nymph Snapping Shrimp

Bengali Name: Bhati Chingri

Synonym/s: *Crangon euprosyne* de Man, 1897

Alpheus eurydactylus de Man, 1920

Alpheus langi Schmitt 1926, = *A. euphrosyne langi*

Alpheus richardsoni Yaldwyn 1971, = *A.*

euphrosyne richardsoni

Taxonomic Notes: Banner and Banner (1982) described two geographically isolated subspecies of *Alpheus euphrosyne* as *Alpheus euphrosyne richardsoni* Yaldwyn, 1971 and *Alpheus euphrosyne langi* Schmitt, 1926.



Alpheus euphrosyne

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Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: Present or past population information of *Alpheus euphrosyne* in Bangladesh waters is unknown. There is no information on its distribution and/or population status inside Bangladesh waters. Based on above features, *Alpheus euphrosyne* is assessed as Data Deficient.

Date Assessed: 14 September 2014

History

Regional Status: The species was not assessed before in Bangladesh.

Geographic Range

Global: The species is abundant in Indo-West Pacific and

Indian Ocean- Australia, Bangladesh, Indonesia, Kenya, Philippines, Queensland and Thailand (Holthuis 1980).

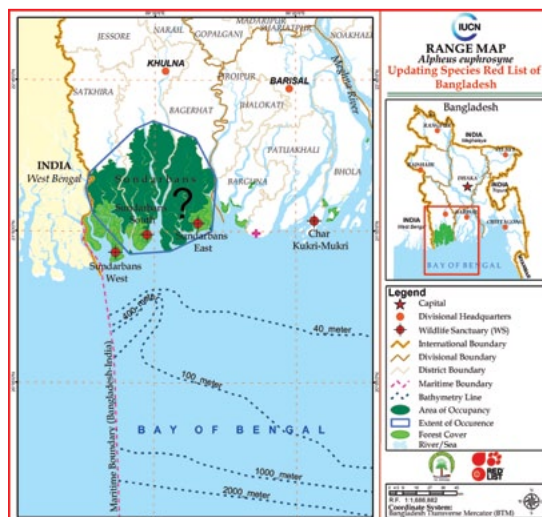
Bangladesh: The species is found in the Sundarbans Reserve Forest.

EOO: 5,681 km²

AOO: 3,246 km²

Habitat and Ecology

This species lives in shallow, muddy, estuarine habitats and is omnivorous, mostly consuming a variety of organic materials, algae, tender leaves and stems of aquatic plants, copepod, mollusks, aquatic insects, worms and other crustaceans.



Assessor: Muhammad Abdur Rouf

Associate Assessor/s: Sheik Istiak Md. Shahriar

Atyopsis spinipes

Species ID: CR0055

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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	ATYIDAE

Scientific Name: *Atyopsis spinipes* (Newport, 1847)

English Name: Soldier Brush Shrimp

Bengali Name: Not known

Synonym/s: *Atya spinipes* Newport, 1847
Atya armata Schmeltz, 1869
Atya denticostis Thallwitz, 1891
Atya brevirostris var. *De Mani* Nobili, 1900
Atya brevirostris Schenkel, 1902
Atya moluccensis de Man, 1902
Atya gastiva Urita, 1921

Taxonomic Notes: None



Atyopsis spinipes

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Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: Although the species is documented in Bangladesh, there is no record of population or its trend and habitat quality. Therefore, *Atyopsis spinipes* is assessed as Data Deficient.

Date Assessed: 20 August 2014

History

Regional Status: The species was not assessed before in Bangladesh.

Geographic Range

Global: *Atyopsis spinipes* is a widely distributed species occurring from the Philippines and Lesser Sunda Islands (Indonesia) northwards to Taiwan and

the Ryukyus and also found in eastwards to Guam, Fiji, Palau and Samoa (Holthuis 1980, Chace 1983, Carpenter and Niem 1998).

Bangladesh: Not known

Habitat and Ecology

Adults of this species live in freshwater, usually in fast flowing streams; among rocks but reproduce in brackish water. The species is a filter feeder getting nourishment from decaying matter.



Assessor: Afshana Parven

Caridina gracilirostris

Species ID: CR0052

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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	ATYIDAE

Scientific Name: *Caridina gracilirostris* de Man, 1892
English Name: Needle Nose Caridina, Red Nose Shrimp, Rhino Shrimp
Bengali Name: Not known
Synonym/s: *Palaemon scarletti*
Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: In the absence of any information on its occurrence, range of distribution or any other data on its ecology in Bangladesh *Caridina gracilirostris* is considered as Data Deficient.

Date Assessed: 26 August 2014

History

Regional Status: The species was not assessed before in Bangladesh.

Geographic Range

Global: *Caridina gracilirostris* is widely distributed in Cambodia, Fiji, India, Indonesia, Japan, Madagascar, Malaysia, Palau, Philippines, Singapore, Taiwan and Thailand (Holthuis 1980, Cai and Ng 2007), and likely to be present in Bangladesh.

Bangladesh: Not known

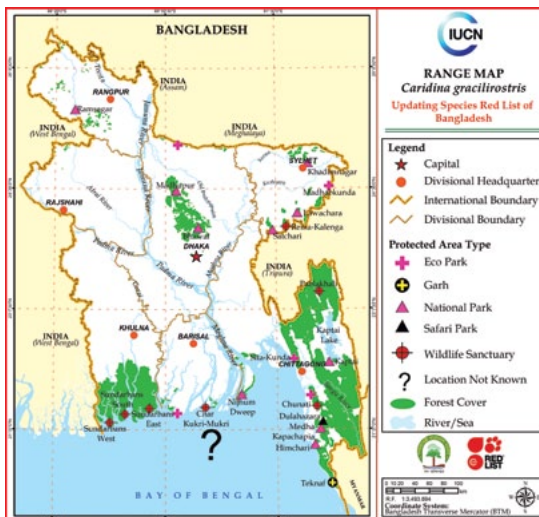


Caridina gracilirostris

© Mostafa A R Hossain

Habitat and Ecology

This shrimp species lives in the lower parts of rivers or streams, deltas of rivers, mangroves and marshes with seawater influence, need brackish to salt water for larval development.



Assessor: Mohammad Ali Azadi

Caridina propinqua

Species ID: CR0053

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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	ATYIDAE

Scientific Name: *Caridina propinqua* de Man, 1908

English Name: Hairy-Handed Prawn

Bengali Name: Not known

Synonym/s: None

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: *Caridina propinqua* is reported from Bangladesh waters. However, there is no information on its distribution and/or population status inside Bangladesh waters. Based on above features, *C. propinqua* is assessed under the Category of Data Deficient.

Date Assessed: 26 August 2014

History

Regional Status: The species was not assessed before in Bangladesh.

Geographic Range

Global: *Caridina propinqua* is distributed in Bangladesh, India, Japan, Malaysia, Philippines, Singapore, Sri Lanka, Thailand (Holthuis 1980, Cai and Shokita 2006).

Bangladesh: Not known

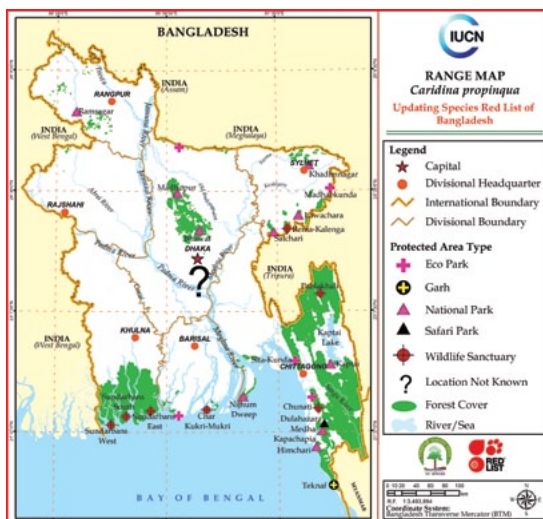


Caridina propinqua

© Legrandbleu-vpc

Habitat and Ecology

This prawn lives in brackish water, mangrove areas and rivers but is also known from freshwater streams. It is omnivorous in nature and mostly feeds on vegetation.



Assessor: Mohammad Ali Azadi

Caridina weberi

Species ID: CR0054

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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	ATYIDAE

Scientific Name: *Caridina weberi* de Man, 1908

English Name: Pignose Caridina

Bengali Name: Not known

Synonym/s: *Caridina weberi typica* Bouvier, 1925

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: Although *Caridina weberi* is reported in Bangladesh there is no information to make a direct or indirect assessment of its risk of extinction based on its distribution and/or population status of the species inside Bangladesh waters. Therefore, *Caridina weberi* is assessed under the Category of Data Deficient.

Date Assessed: 18 August 2014

History

Regional Status: The species has never been assessed before in Bangladesh.

Geographic Range

Global: The species is globally widely distributed and occurring from Indo-West Pacific: India to Viet Nam, Palau and Polynesia also found in Federated States of Micronesia (Holthuis 1980, Chace 1997, Carpenter and Niem 1998).

Bangladesh: Not known

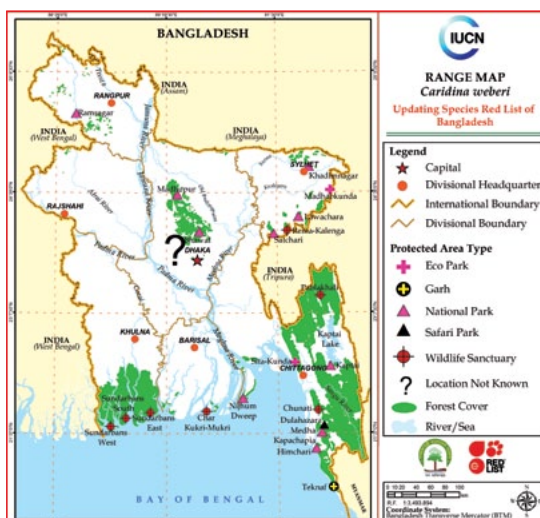


Caridina weberi

© 2009 Moorea Biocode

Habitat and Ecology

This is a freshwater species and inhabits mostly in middle or lowland of the river, streams and lakes, around densel aquatic vegetation but reproduces in brackish water.



Assessor: Afshana Parven

Exhippolysmata ensirostris

Species ID: CR0067

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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	HIPPOLYTIDAE

Scientific Name: *Exhippolysmata ensirostris* (Kemp, 1914)

English Name: Hunter Shrimp

Bengali Name: Shikari Chingri, Vasha Gura

Synonym/s: *Eualus ensirostris* (Kemp, 1914)

Hippolysmata ensirostris Kemp, 1914

Taxonomic Notes: None



Exhippolysmata ensirostris

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Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is no information on the distribution and/or population status of in *Exhippolysmata ensirostris* Bangladesh water. Based on above features, the species is assessed as Data Deficient.

Date Assessed: 22 October 2014

History

Regional Status: *Exhippolysmata ensirostris* was not assessed before in Bangladesh.

Geographic Range

Global: This species occurs along the east African coast from Kenya to South Africa (Natal), and on the west and south coasts of India and Sri Lanka. Further east, it extends as far as Bangladesh, Indonesia and New Guinea, Philippines and Western Central Pacific (Holthuis 1980).

Bangladesh: The shrimp is known to occur in the Kutubdia Channel.

Habitat and Ecology

The species lives in shallow inshore, estuarine and marine water.

EOO: 179 km²

AOO: 94 km²



Assessor: Mohammad Ali Azadi

Lysmata vittata

Species ID: CR0068

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	HIPPOLYTIDAE

Scientific Name: *Lysmata vittata* (Stimpson, 1860)

English Name: Indian Lined Shrimp

Bengali Name: Lona Chingri

Synonym/s: *Hippolysmata vittata* Stimpson, 1860

Nauticaris unirecedens Bate, 1888

Hippolysmata vittata subtilis Thallwitz, 1891

Hippolysmata durbanensis Stebbing, 1921

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: In view of the absence of sufficient information on its Extent of Occurrence, ecological requirement, population size and trend, and any long-term threat, *Lysmata vittata* is assessed as Data Deficient.

Date Assessed: 22 October 2014

History

Regional Status: *Lysmata vittata* was not assessed before in Bangladesh.

Geographic Range

Global: This shrimp species occurs in the Indo-West Pacific from Red Sea and South East Africa to China, Japan, Malay Archipelago, New Zealand and Philippines (Holthuis 1980).

Bangladesh: Not known



Lysmata vittata

© www.masa.asn.au

Habitat and Ecology

The species inhabits in marine water with a depth of 0-54 meter.



Assessor: Mohammad Ali Azadi

Exopalaemon modestus

Species ID: CR0061

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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALAEMONIDAE

Scientific Name: *Exopalaemon modestus* (Heller, 1862)

English Name: Siberian Prawn

Bengali Name: Gura Chingri

Synonym/s: *Leander modestus* Heller, 1862

Leander modestus sibirica Brashnikov, 1907

Palaemon (Leander) modestus Gee, 1925

Leander czerniavskyi lacustris Buldovsky, 1933

Taxonomic Notes: None



Exopalaemon modestus

© Balam Mahalder

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is inadequate information/data to make direct or indirect assessment of the species and its risk to extinction based on the fact that its distribution and population status are unknown. Based on above features, the species *Exopalaemon modestus* is assessed as Data Deficient.

Date Assessed: 09 September 2014

History

Regional Status: The species has never been assessed in Bangladesh.

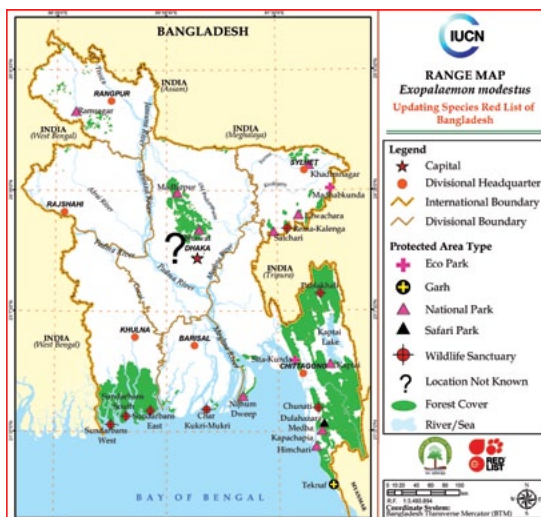
Geographic Range

Global: The species is available in China, Korea, Siberia and Taiwan (Holthuis 1980). It has been introduced into Kazakhstan and USA (Emmett *et al.* 2002, De Grave and Mann 2012).

Bangladesh: Not known

Habitat and Ecology

This benthopelagic species feeds mainly on algae and usually restricted to fresh and oligohaline waters, occurring in the large rivers, lakes, and reservoirs. The species is adhering to sandy-muddy shores.



Assessor: Md. Sirajul Islam

Exopalaemon styliferus

Species ID: CR0060

DATA DEFICIENT
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Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALAEMONIDAE

Scientific Name: *Exopalaemon styliferus* (H. Milne-Edwards, 1840)

English Name: Roshma Prawn

Bengali Name: Gara Icha, Ghora Chingri

Synonym/s: *Palaemon longirostris* H. Milne Edwards, 1837

Palaemon styliferus H. Milne-Edwards, 1840

Leander styliferus H. Milne-Edwards, 1840

Leander styliferus Kemp, 1915

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: Though the species was reported from the Sundarbans by a number of authors (Chantarasri 1994, Khan 1999, Bernaecsek 2001), there is no quantifiable study or the mention of the observation of any number of individuals, let alone the population estimation. Based on above features, the species *Exopalaemon styliferus* is assessed as Data Deficient (DD).

Date Assessed: 09 September 2014

History

Regional Status: This species has never been assessed in Bangladesh.

Geographic Range

Global: *Exopalaemon styliferus* is available in Indo-west Pacific region- Bangladesh, India, Indonesia, Pakistan and Thailand (Holthuis 1980).



Exopalaemon styliferus

© Nasrin Akter Sweety

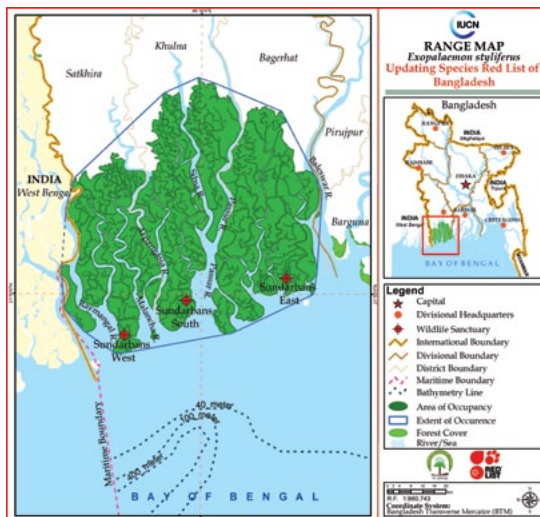
Bangladesh: In Bangladesh the species is recorded from the Sundarbans (Chantarasri 1994, Khan, 1999, Bernaecsek 2001).

EOO: 6,298 km²

AOO: 4,114 km²

Habitat and Ecology

The species live in shallow coastal waters and occasionally in freshwater.



Assessor: Mostafa Ali Reza Hossain

Leandrites celebensis

Species ID: CR0065

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALAEEMONIDAE

Scientific Name: *Leandrites celebensis* (de Man, 1881)

English Name: Leandrites

Bengali Name: Not known

Synonym/s: *Landrites indicus* Holthuis, 1950

Leander celebensis de Man, 1881

Palaemonetes hornelli Kemp, 1925

Landrites indicus Holthuis, 1950

Leander wieneckii Holthuis, 1950

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: Present or past population information of *Leandrites celebensis* is unknown. There is no information to make a direct or indirect assessment of its risk of extinction based on its distribution and/or population status inside Bangladesh waters. Based on above features, the species *Leandrites celebensis* is assessed under the category Data Deficient.

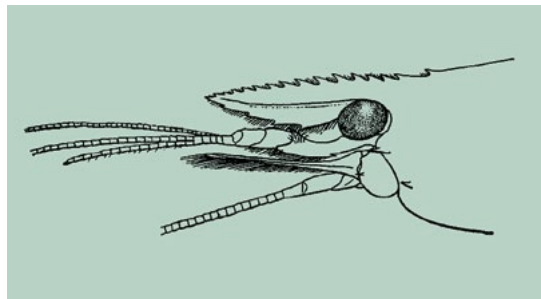
Date Assessed: 14 September 2014

History

Regional Status: The species has never been assessed in Bangladesh.

Geographic Range

Global: The species is reported from Indonesia (Celebes



Leandrites celebensis

© Stanley Kemp

and Java) Pakistan, North Australia, Singapore, and South India (Jayachandran 2001, Kazmi *et al* 2009).

Bangladesh: Not known

Habitat and Ecology

The omnivorous species mostly consumes a variety of organic materia, algae, tender leaves and stems of aquatic plants, copepod, mollusks, aquatic insects, worms, and other crustaceans (Pillai 1974). It lives in shallow brackish water.



Assessor: Muhammad Abdur Rouf

Associate Assessor/s: Sheik Istiak Md. Shahriar

Macrobrachium equidens

Species ID: CR0056

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALAEONIDAE

Scientific Name: *Macrobrachium equidens* (Dana, 1852)

English Name: Rough River Prawn

Bengali Name: Not available

Synonym/s: *Palaemon equidens* Dana, 1852

Palaemon sundaicus bataviana de Man, 1897

Palaemon sundaicus brachydactyla Nobili, 1899

Palaemon sundaicus baramensis de Man, 1902

Palaemon nasutus Nobili, 1903

Palaemon delagoae Stebbing, 1915

Urocaridella borradalei Stebbing, 1923

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: *Macrobrachium equidens* is listed as Data Deficient in view of the absence of sufficient information on its extent of occurrence, ecological requirement, population size and trend in Bangladesh

Date Assessed: 09 September 2014

History

Regional Status: The species has never been assessed in Bangladesh.

Geographic Range

Global: *Macrobrachium equidens* is widely available in Indo-west pacific areas - Madagascar, India to Southern



Macrobrachium equidens

© Md. Ashrafur Islam

China and Philippines. It is also found in New Britain and New Caledonia, Fiji and Vietnam (Holthuis 1980, Carpenter and Niem 1998).

Bangladesh: Not known

Habitat and Ecology

The species is omnivorous in nature, feeds on insect larva, plants and small decomposed animals in the wild. The euryhaline species occurs from the middle to lower reaches of streams, river mouths and estuaries, occasionally upstream to the limit of tidal influence; also found in brackish water of high salinity; rarely found in true freshwater but often in sea water.



Assessor: Mostafa Ali Reza Hossain

Macrobrachium idella

Species ID: CR0057

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALAEEMONIDAE

Scientific Name: *Macrobrachium idella* (Hilgendorf, 1898)

English Name: Slender River Prawn

Bengali Name: Chikna Chingri

Synonym/s: *Palaemon (Eupalaemon) multidens* Coutière, 1900

Taxonomic Notes: There are two sub species–*Macrobrachium idella georgii* Jayachandran and Joseph 1985 - found in the four river systems of Indian state of Kerala and *Macrobrachium idella idella* (Hilgendorf 1898) – found in Tanzania and Madagascar. It appears that both taxa should be elevated to species level (De Grave 2013).

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: Little is known about *Macrobrachium idella* and its distribution, habitat requirement, population, or threats in Bangladesh. In addition, information is needed on the potential effect of any development activities on the species or on its habitat. Based on above features, the species is listed as Data Deficient.

Date Assessed: 09 September 2014

History

Regional Status: The species has not been assessed before in Bangladesh.

Geographic Range

Global: *Macrobrachium idella* is found in the East Africa and Indo-West Pacific region (Holthuis, 1980).



Macrobrachium idella

© Muntasir Akash

Bangladesh: Not known

Habitat and Ecology

This freshwater prawn is known to inhabit larger river systems.



Assessor: Mostafa Ali Reza Hossain

Macrobrachium lanchesteri

Species ID: CR0059

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALAEONIDAE

Scientific Name: *Macrobrachium lanchesteri* (de Man, 1911)

English Name: Rice Land Prawn

Bengali Name: Dhanua Chingri

Synonym/s: *Palaemon paucidens* Lanchester, 1901

Cryphiops lanchesteri de Man, 1911

Cryphiops lanchesteri Johnson, 1966

Taxonomic Notes: None



Macrobrachium lanchesteri

© Md. Sherazul Islam

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: Data on abundance and distribution of *Macrobrachium lanchesteri* are lacking. It seems there is inadequate information to make a direct or indirect assessment of extinction risks based on its distribution and population status of this species in Bangladesh. Based on above features, *Macrobrachium lanchesteri* is assessed as Data Deficient (DD).

Date Assessed: 09 September 2014

Bangladesh: Not known

History

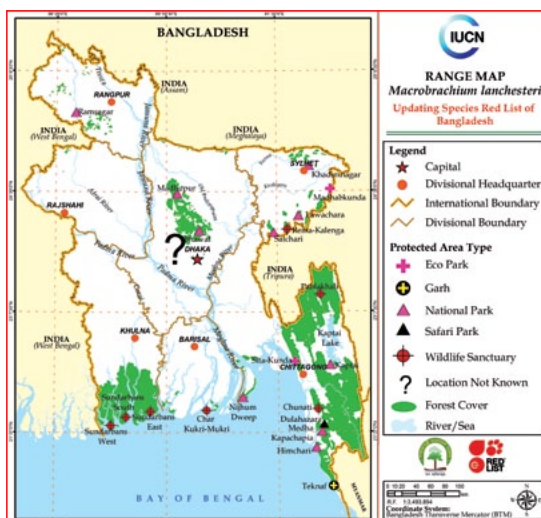
Regional Status: The species has not been assessed in Bangladesh.

Habitat and Ecology

The species is found in freshwater bodies, rice fields, ponds, reservoirs, streams, rivers and also in brackish water habitat.

Geographic Range

Global: The species is widely distributed in Indo-west Pacific, occurring in India, Laos, Malaysia, southern and central Thailand and Singapore (Holthuis 1980, Chace and Bruce 1993).



Assessor: Mostafa Ali Reza Hossain

Macrobrachium lar

Species ID: CR0021

DATA
DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALAEMONIDAE

Scientific Name: *Macrobrachium lar* (Fabricius, 1798)

English Name: Monkey River Prawn

Bengali Name: Not Known

Synonym/s: *Palaemon lar* Fabricius, 1798

Palaemon longimanus Fabricius, 1798

Palaemon madagascariensis Hoffman, 1874

Palaemon mayottensis Hoffman, 1874

Palaemon reunionnensis Hoffman, 1874

Leander dionyx Nobili, 1905

Cancer teatae Curtiss, 1938

Macrobrachium ornatus Jayachandran
& Raji, 2004

Taxonomic Notes: None



Macrobrachium lar

© Mohammad Ali Reza Khan

Assessment Information

Red List Category & Criteria: Data Deficient ver 3.1

Justification: There is no information on the population of *Macrobrachium lar* in Bangladesh. Therefore, this species is assessed as Data Deficient.

Date Assessed: 26 June 2014

History

Regional Status: The species was not assessed before in Bangladesh.

Geographic Range

Global: *Macrobrachium lar* is native in Australia (Queensland), China, Province of China (main island),

Comoros, Fiji, French Polynesia (Marquesas), Guam, Indonesia (Java), Japan (Kyushu), Kenya, Lesser Sunda Island, Papua, Sulawesi), Madagascar, Malaysia (Sarawak), Mauritius (main island and Rodrigues), Mozambique, New Caledonia, Northern Mariana Islands, Papua New Guinea (main island), Philippines, Taiwan, and Tanzania. The species is introduced in the United States (Hawai) (Holthuis 1980).

Bangladesh: Only confirmed record of it is by Khan 2014 who photographed a specimen of it in the Boga Lake- the highest such freshwater body in Bangladesh under the District of Bandarban (Khan, Mohammad Ali Reza, Chief National Technical Expert of this Red List Project based on the picture he took on 31 March 2014 and identified by Mostafa A R Hossain, Lead Assessor of this Crustacean Group).

EOO: 0.09 km²

AOO: 0.07 km²

Habitat and Ecology

Macrobrachium lar lives in freshwater and largely restricted to flowing rivers and creeks from near sea level up to medium elevation. It has been found in the Boga Lake, the highest freshwater body of Bangladesh in the Bandarban District. Juvenile stage is spent in brackish and salt water.



Assessor: Mohd. Golam Quader Khan

Nematopalaemon tenuipes

Species ID: CR0062

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALAEMONIDAE

Scientific Name: *Nematopalaemon tenuipes* (Henderson, 1893)

English Name: Spider Prawn

Bengali Name: Lotia Icha, Gura Icha

Synonym/s: *Leander tenuipes* Henderson, 1893

Palaemon tenuipes Henderson, 1893

Leander luzonensis Blanco, 1939

Palaemon luzonensis Blanco, 1939

Palaemon (Nematopalaemon) tenuipes

Holthuis, 1950

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: The population trend of the species is not known and appropriate data on abundance and distribution are also lacking. Based on above features, the species *Nematopalaemon tenuipes* is assessed as Data Deficient.

Date Assessed: 06 September 2014

History

Regional Status: The species has never been assessed in Bangladesh.

Geographic Range

Global: The species is available in Bangladesh, Burma, India Malaysia, Philippines and New Zealand (Holthuis 1980, Chace and Bruce 1993).



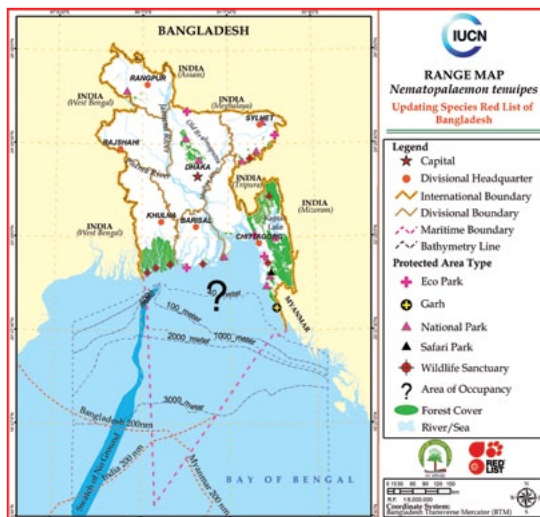
Nematopalaemon tenuipes

© Md. Ashrafur Islam

Bangladesh: Not known

Habitat and Ecology

It inhabits shallow coastal waters at depths of 17 to 20 m and also found in estuarine and marine waters.



Assessor: Md. Sirajul Islam

Palaemon serrifer

Species ID: CR0064

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PALAEONIDAE

Scientific Name: *Palaemon serrifer* (Stimpson, 1860)

English Name: Carpenter Shrimp, Barred Estuarine Shrimp

Bengali Name: Chingri

Synonym/s: *Leander fagei* Yu, 1930

Leander serrifer Yu, 1930

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: Neither present nor past population size of *Palaemon serrifer* is known. There is no information to make a direct or indirect assessment of the risk of extinction based on distribution and/or population status of Carpenter shrimp, *Palaemon serrifer* inside Bangladesh waters. Based on above features, the species is assessed under the category Data Deficient.

Date Assessed: 20 September 2014

History

Regional Status: The species has never been assessed in Bangladesh.

Geographic Range

Global: The species is available in Australia, Bangladesh, China, Hong Kong, India, Indonesia, Japan, Korea, Myanmar, Siberia and Taiwan (Holthuis 1980, Ahmed 1991).



Palaemon serrifer

© Mostafa A R Hossain

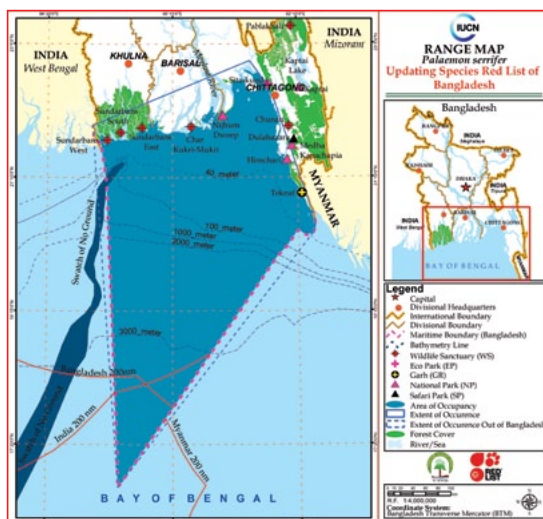
Bangladesh: The species is distributed in marine waters of Bay of Bengal.

EOO: 1,45,569 km²

AOO: 1,17,086 km²

Habitat and Ecology

The species is found in intertidal zone, particularly in the tidal pools (Kim 2008).



Assessor: Md. Enamul Hoq

Heterocarpus gibbosus

Species ID: CR0069

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PANDALIDAE

Scientific Name: *Heterocarpus gibbosus* Bate, 1888

English Name: Humpback Nylon Shrimp

Bengali Name: Nylon Chingri

Synonym/s: None

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is no information on the distribution and/or population status of *Heterocarpus gibbosus* in Bangladesh. Therefore, the species is assessed as Data Deficient.

Date Assessed: 22 October 2014

History

Regional Status: This species was not assessed before in Bangladesh.

Geographic Range

Global: The specie is found in Indo-West Pacific region - East Africa to the Philippines and Indonesia (Holthuis 1980).

Bangladesh: Bay of Bengal.

EOO: 41,046 km²

AOO: 36,518 km²

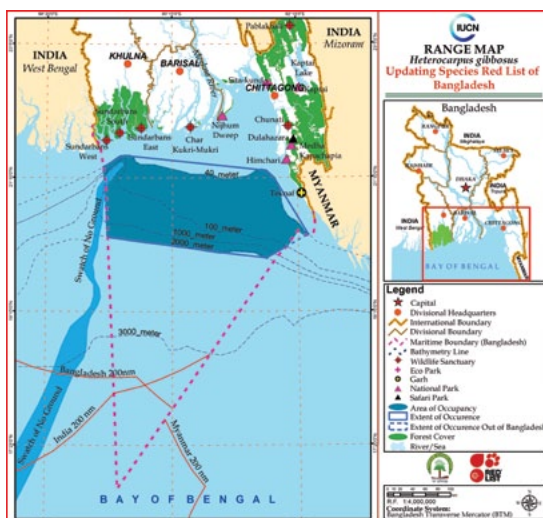


Heterocarpus gibbosus

© Fisheries Research Institute, Taiwan

Habitat and Ecology

Heterocarpus gibbosus inhabits in a depth of 265 to 1280 m. Its diet consists of euphausiids, foraminiferans, sponges and detritus.



Assessor: Mohd. Golam Quader Khan

Heterocarpus woodmasoni

Species ID: CR0070

DATA
DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PANDALIDAE

Scientific Name: *Heterocarpus woodmasoni* Alcock, 1901

English Name: Indian Nylon Shrimp

Bengali Name: Nylon Chingri

Synonym/s: None

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: Neither present nor past population size of *Heterocarpus woodmasoni* is known. There is no information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status of this species in Bangladesh water. Based on above features, the species is assessed as Data Deficient.

Date Assessed: 22 October 2014

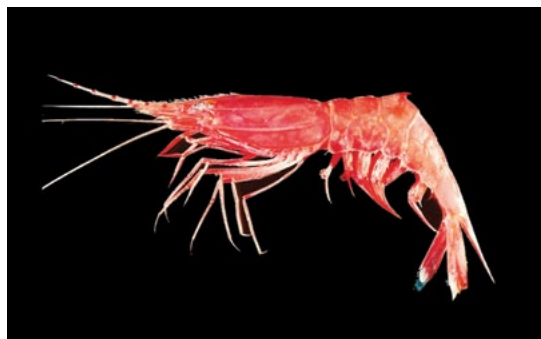
History

Regional Status: This species was not assessed before in Bangladesh.

Geographic Range

Global: The species is distributed in Indo-West Pacific: East Africa to Indonesia (Holthuis 1980).

Bangladesh: Bay of Bengal.



Heterocarpus woodmasoni

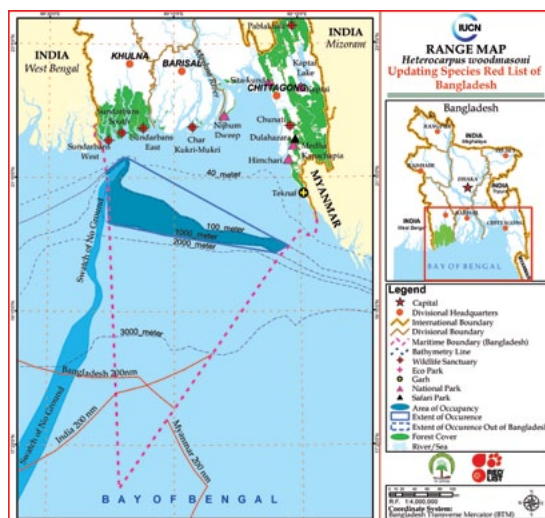
© Fisheries Research Institute, Taiwan

EOO: 19,862 km²

AOO: 9,927 km²

Habitat and Ecology

The species inhabits in a depth of 290 to 640 meter. The diet of this species consists of euphausiids, foraminiferans, sponges and detritus.



Assessor: Mohd. Golam Quader Khan

Plesionika martia

Species ID: CR0071

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PANDALIDAE

Scientific Name: *Plesionika martia* (A. Milne-Edwards, 1883)

English Name: Golden Shrimp, Golden Prawn

Bengali Name: Sonali Chingri

Synonym/s: *Pandalus martius* A. Milne Edwards, 1883

Plesionika semilaevis Bate, 1888

Plesionika sicherii Riggio, 1900

Plesionika cottei Kotte, 1902

Taxonomic Notes: None



Plesionika martia

© Balam Mahalder

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: The species *Plesionika martia* is listed as Data Deficient in view of the absence of sufficient information on its Extent of Occurrence, ecological requirement, population size and trend, and any long-term threat.

Date Assessed: 17 October 2014

History

Regional Status: The species was not assessed before in Bangladesh.

Geographic Range

Global: The species is distributed throughout Atlantic and the Mediterranean, northward extending into the Mediterranean and South Carolina, Gulf of Mexico and Brazil and along the Atlantic coasts of Europe up to Ireland and southward to South Africa- Mediterranean. Indo-West

Pacific: Gulf of Aden and S.E. Africa to Japan, Hawaii, Australia and Kermadec Islands (Holthuis 1980).

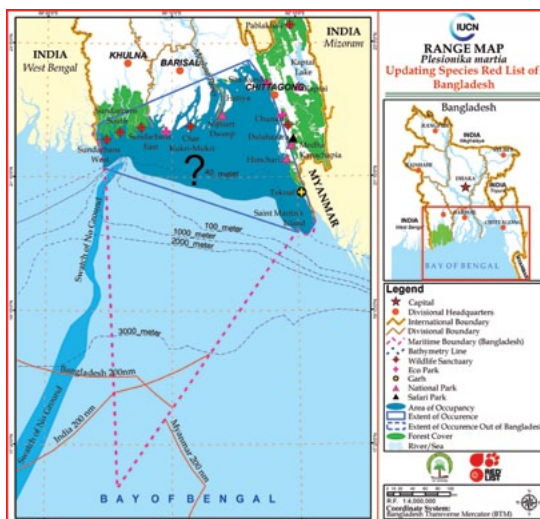
Bangladesh: Possibly it occurs in 180-210m depth ranges of the Bay of Bengal.

EOO: 57,097 km²

AOO: 36,520 km²

Habitat and Ecology

Plesionika martia is a subtropical, demersal benthic species inhabiting muddy bottoms, soft mud and coarse sand at depths of 176 to 700 m. The species feeds on crustaceans (Pasyphaeidae, euphausiids) and carrion.



Assessor: Mst. Kaniz Fatema

Fenneropenaeus penicillatus

Species ID: CR0038

DATA
DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Fenneropenaeus penicillatus* (Alcock, 1905)

English Name: Red-tailed Prawn

Bengali Name: Lalchama Chingri

Synonym/s: *Penaeus (Fenneropenaeus) merguensis* de Man, 1888

Penaeus (Fenneropenaeus) indicus H.

Milne Edwards, 1937

Penaeus (Fenneropenaeus) silasi Muthu and Motoh, 1979

Taxonomic Notes: *Penaeus penicillatus* is presently named as *Fenneropenaeus penicillatus*.

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: Present or past population information of *Fenneropenaeus penicillatus* is unknown. There is no information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status inside Bangladesh waters. Based on above features, the species is assessed under the Category Data Deficient.

Date Assessed: 24 July 2014

History

Regional Status: The species has never been assessed in Bangladesh.



Fenneropenaeus penicillatus

© Mostafa A R Hossain

Geographic Range

Global: The species is present in Indo-West Pacific region from Pakistan to Indonesia. It is also available in the north-east Arabian Sea, Bangladesh, China, India (east coast) and Taiwan (Carpenter and Niem 1998).

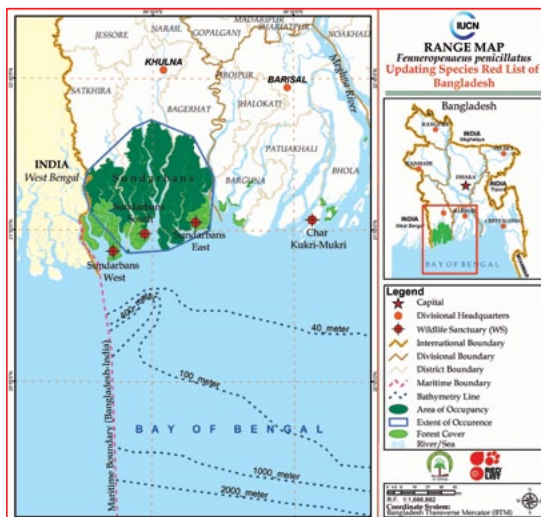
Bangladesh: The species is known to occur in the Sunderban Reserved Forest.

EOO: 5,681 km²

AOO: 3,246 km²

Habitat and Ecology

Fenneropenaeus penicillatus is mostly abundant in shallow waters near the shore on mud and sand substrate. The species is omnivorous in nature, consumes a variety of organic materials, algae, tender leaves and stems of aquatic plants, copepod, mollusks, aquatic insects, worms, and other crustaceans.



Assessor: Muhammad Abdur Rouf

Metapenaeopsis andamanensis

Species ID: CR0040

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Metapenaeopsis andamanensis* (Wood-Mason and Alcock 1891)

English Name: Rice Velvet Shrimp

Bengali Name: Dhaina Icha

Synonym/s: *Metapenaeus ensis* de Haan, 1844

Metapenaeus philippinensis var.

andamanensis Wood-Mason and Alcock, 1891

Penaeus (Metapenaeus) coniger andamanensis Alcock, 1901

Penaeopsis coniger andamanensis de Man, 1911

Metapenaeus philippinensis Motosh and Muthu 1979

Taxonomic Notes: None



Metapenaeopsis andamanensis

© Real -www.biosearch.in

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: Neither present nor past population size of *Metapenaeopsis andamanensis* is known. There is no information to make a direct or indirect assessment of its risk of extinction based on its distribution and/or population status of *M. andamanensis* in Bangladesh water. Based on above features, the species is assessed as Data Deficient.

Date Assessed: 24 July 2014

History

Regional Status: The taxon has never been assessed in Bangladesh.

Geographic Range

Global: The species is distributed in Bali Sea, Japan, Cochin, Gulf of Manner, Andaman Island, Tuticorin (India), Malaya and South China Sea (Holthuis 1980).

Bangladesh: Not known

Habitat and Ecology

The species inhabit between depths of 150 and 350 m.



Assessor: Md. Enamul Hoq

Metapenaeopsis stridulans

Species ID: CR0043

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Metapenaeopsis stridulans* (Alcock, 1905)

English Name: Fiddler Shrimp

Bengali Name: Chama Chingri, Loilla lcha

Synonym/s: *Metapenaeus stridulans* Alcock, 1905

Penaeopsis stridulans Alcock, 1905

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is no information to make a direct or indirect assessment of its risk of extinction based on its distribution and/or population status of *Metapenaeopsis stridulans* inside Bangladesh waters. Based on above features, the species- *Metapenaeopsis stridulans* is assessed as Data Deficient.

Date Assessed: 14 July 2014

History

Regional Status: The species was not assessed before in Bangladesh.

Geographic Range

Global: The species is found in Indo-West Pacific from the Persian Gulf to the South China Sea and New Caledonia and Arabian Sea to the Malay Archipelago, New Guinea and New Britain (Holthuis 1980, Carpenter and Niem 1998).

Bangladesh: Not known



Metapenaeopsis stridulans © Muhammad Moazzam Khan, www.sealifebase.org

Habitat and Ecology

The species lives in sandy or muddy bottom, between depths of 10-90 m.



Assessor: Md. Enamul Hoq

Metapenaeus affinis

Species ID: CR0023

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Metapenaeus affinis* (H. Milne Edwards, 1837)

English Name: Jinga Shrimp

Bengali Name: Karaney Chingri, Honey Chingri, Kharkharia Chingri, Kharkhore Chingri, Kucho Chingri, Lalia Chingri, Bara Chama

Synonym/s: *Penaeopsis affinis* H. Milne Edwards, 1837

Penaeus mutatus Lanchester, 1901

Parapenaeus affinis M. J. Rathbun, 1902

Metapenaeus mutatus Nobili, 1903

Penaeopsis affinis De Man, 1911

Metapenaeus necopinans Hall, 1956

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: It seems there is inadequate information to make a direct; or indirect, assessment of its risk of extinction based on the distribution and/or population status of *Metapenaeus affinis*. Though the taxon is fairly well studied and its biology is well known, appropriate data on its abundance and/or distribution inside Bangladesh are lacking. So far, only one reference, which is more than 10 years old, described, the presence of *M. affinis* during experimental survey in the Bay of Bengal by trawl net that only contributed less than 0.01% by weight (Mustafa, 2003). Based on above features, the taxon - *M. affinis* mulls over Data Deficient.

Date Assessed: 26 June 2014



Metapenaeus affinis

© Balam Mahalder

History

Regional Status: *Metapenaeus affinis* was not assessed before in Bangladesh.

Geographic Range

Global: *Metapenaeus affinis* is distributed in Indo-West Pacific region - Arabian Sea to South China Sea - Malay Archipelago and Hong Kong and Hawaii. The species is available in Bangladesh, Pakistan, Persian Gulf, along west coast and southern part of east coast Sri Lanka, east and west coast of Malaya and in Hong Kong (Holthuis 1980, Kamal and Khan 2009, Hossain 2013).

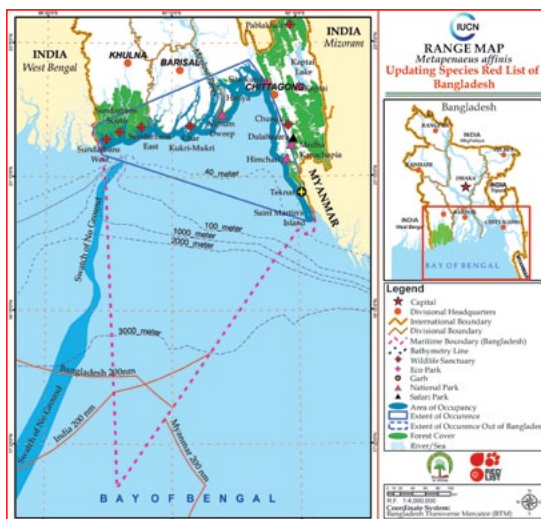
Bangladesh: *Metapenaeus affinis* is found in the Bay of Bengal area of Bangladesh.

EOO: 46,947 km²

AOO: 10,178 km²

Habitat and Ecology

Metapenaeus affinis is an omnivore; however, the diet appears to be predominantly made up of benthic animals- nematodes, Foraminifera, mollusks, copepods, gastropods and bivalves. Maximum length of male is 150 mm and female is 190 mm. *Metapenaeus affinis* is tropical, demersal and coastal brackish water shrimp. The species is common in edge subtidal to depth of 60 m, can be found up to 92 m prefer mud and sandy mud bottom and juveniles are found in intertidal zone. The shrimp is available in coast during July-September, however, again it goes back to marine water before becoming mature.



Assessor: Mostafa Ali Reza Hossain

Metapenaeus dobsoni

Species ID: CR0025

DATA
DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Metapenaeus dobsoni* (Miers, 1878)

English Name: Kadal shrimp

Bengali Name: Lona Chingri, Gosa Chingri

Synonym/s: *Penaeus dobsoni* Miers, 1878

Mangalura dobsoni (Miers, 1878)

Penaeopsis dobsoni (Miers, 1878)

Metapenaeus dobsoni choprai Nataraj, 1942

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is inadequate information to make a direct or indirect assessment of risk of extinction based on distribution and population status of Kadal shrimp, *Metapenaeus dobsoni* inside Bangladesh. Though the population trend of the taxon is well-studied in neighbouring countries like India (Sukumaran *et al.* 1993, Pillai and Thirumilu, 2013), but appropriate data on abundance and/or distribution inside Bangladesh are lacking. Based on above features, *M. dobsoni* is listed as Data Deficient.

Date Assessed: 26 June 2014

History

Regional Status: *Metapenaeus dobsoni* has never been assessed in Bangladesh.



Metapenaeus dobsoni

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Geographic Range

Global: *Metapenaeus dobsoni* is distributed in the Indo-West Pacific area: West coast of India, Srilanka to Indonesia, Malaysia, New Guinea and Philippines. This prawn is commercially important in Kuwait (Holthuis 1980, Carpenter and Niem 1998).

Bangladesh: Not known

Habitat and Ecology

Metapenaeus dobsoni is a bottom feeder carnivore and feeds on *Cladophora* mixed with mud, diatoms, entire or partly digested bodies of Foraminifera, Copepoda, Nematoda, Amphipoda and Gastropoda. Male can attain a maximum length of 11.8 cm and female 13.0 cm. The species breeds throughout the year with two peaks in February–June and December–January (Jayawardane *et al.* 2003). This is a marine and brackish water (1-37 m) demersal shrimp and lives in muddy bottom.



Assessor: Mostafa Ali Reza Hossain

Metapenaeus ensis

Species ID: CR0026

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Metapenaeus ensis* (De Haan, 1844)

English Name: Greasyback Shrimp, Offshore Greasyback Shrimp

Bengali Name: Not known

Synonym/s: *Penaeus ensis* de Haan, 1844

Penaeopsis ensis (De Haan, 1844)

Penaeus mastersii Haswell, 1878

Metapenaeus mastersii (Haswell, 1878)

Penaeopsis mastersii (Haswell, 1878)

Penaeus incisipes Bate, 1888

Parapenaeus incisipes (Bate, 1888)

Metapenaeus incisipes (Bate, 1888)

Penaeopsis incisipes (Bate, 1888)

Taxonomic Notes: None



Metapenaeus ensis

© Mohammed Noman

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is no data available on the population of *Metapenaeus ensis* in the waters of Bangladesh.

No information was found to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. On the basis of this unavailability of data, *M. ensis* is assessed as Data Deficient.

Date Assessed: 20 June 2014

History

Regional Status: *Metapenaeus ensis* has not been assessed in Bangladesh.

Geographic Range

Global: *Metapenaeus ensis* is available in Indo-West Pacific region: Sri Lanka and Malaya to Australia (Western, Northern and Eastern), China (Southeast), Indonesia, Japan, Malay Archipelago, Papua New Guinea, Philippines and Thailand. This species is economically important and one of the high-priced sea-food in Hong Kong. There is an extensive aquaculture of this shrimp in Taiwan, Philippines, Thailand, Malaysia and Hong Kong (Holthuis 1980, Carpenter and Niem 1998).

Bangladesh: Not known

Habitat and Ecology

The demersal Greasyback Shrimp (*Metapenaeus ensis*) is found on the mud and sandy-mud of marine and estuarine turbid waters down to a depth of 95 m. Maximum total length of male was reported as 132 mm and the female reached 159 mm and commonly between 70 and 140 mm. This brackish and marine water demersal shrimp's juveniles are sometimes found in sea grass beds, mangrove banks, mud flats and open channels.



Assessor: Mostafa Ali Reza Hossain

Metapenaeus tenuipes

Species ID: CR0029

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Metapenaeus tenuipes* Kubo, 1949

English Name: Stork Shrimp

Bengali Name: Laila Chingri, Chama Chingri

Synonym/s: *Metapenaeus spinulatus* Kubo, 1949

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: Population size of *Metapenaeus tenuipes* is not known. There is no information to make a direct, or indirect, assessment of risk of extinction based on its distribution and/or population status inside Bangladesh waters. Considering above features, *M. tenuipes* is assessed as Data Deficient.

Date Assessed: 20 June 2014

History

Regional Status: *Metapenaeus tenuipes* was not assessed before in Bangladesh.

Geographic Range

Global: *Metapenaeus tenuipes* is distributed in Indo-West Pacific: Indonesia (west), Malaysia, Singapore and Thailand (Holthuis 1980, Carpenter and Niem 1998).

Bangladesh: Not known

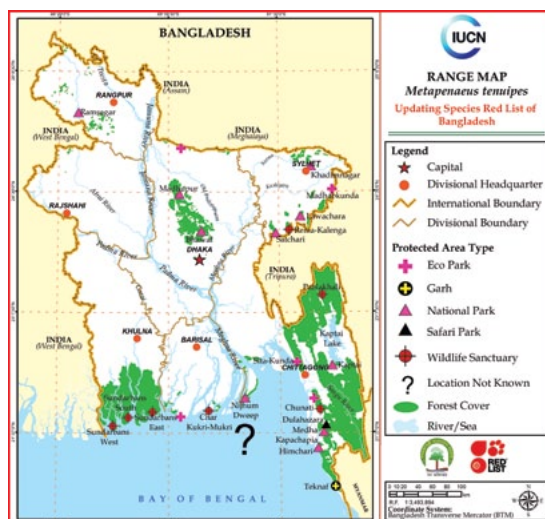


Metapenaeus tenuipes

© Mostafa A R Hossain

Habitat and Ecology

This stork shrimp occurs from the coastline and brackish waters to a depth of 30 m and caught by trawls, set nets, traps, seines, and artisanal gear. This shrimp is nowhere very abundant and caught only as a by-catch. It is a bottom dwelling brackish water species.



Assessor: Mostafa Ali Reza Hossain

Parapenaeopsis coromandelica

Species ID: CR0030

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Parapenaeopsis coromandelica* Alcock, 1906

English Name: Coromandel Shrimp

Bengali Name: Chama Chingri, Chamna Chingri

Synonym/s: *Parapenaeopsis stylifera* (Milne-Edwards, 1837)

Parapenaeopsis stylifera stylifera
(Milne-Edwards, 1837)

Penaeopsis stylifera (Milne-Edwards, 1837)

Penaeus styliferus Milne-Edwards, 1837

Parapenaeopsis stylifera coromandelica

Alcock, 1906

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: Neither present nor past population size of *Parapenaeopsis coromandelica* is known. No information is available to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status inside Bangladesh waters. Therefore, *P. coromandelica* is assessed as Data Deficient.

Date Assessed: 20 June 2014

History

Regional Status: *Parapenaeopsis coromandelica* was not assessed before in Bangladesh.

Geographic Range

Global: *Parapenaeopsis coromandelica* is found in Indian Ocean: in Persian Gulf- from Kuwait and Pakistan



Parapenaeopsis coromandelica

© Mostafa A R Hossain

to Bangladesh India and Sri Lanka, East coast of India to Indonesia. The species is commonly found in shrimp catches in Malaysia and Thailand (Holthuis 1980, Carpenter and Niern 1998, de Croos *et al.* 2012).

Bangladesh: Not known

Habitat and Ecology

Marine bottom dwelling *Parapenaeopsis coromandelica* can attain a maximum total length 120 mm by female and 145 mm by male. Coromandel Shrimps found in marine shallow waters to a depth of about 11m, mainly on mud. This shrimp is caught mainly by seine nets and shrimp gill nets, also by artisanal gear. Like other shrimps, *P. coromandelica* spends the early stage of life cycle in the sea and then comes to the estuary and again go back to the sea before reaching maturity. It is caught in set bag net catch during July to October at the down of the estuary, particularly during ebb period at the dawn.



Assessor: Mostafa Ali Reza Hossain

Parapenaeopsis hardwickii

Species ID: CR0031

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Parapenaeopsis hardwickii* Miers, 1878

English Name: Spear Shrimp, Hard Spear Shrimp

Bengali Name: Shukno Chingri, Gosa Chingri, Godda Chingri, Goddi

Synonym/s: *Penaeus hardwickii* Miers, 1878

Parapenaeopsis sculptilis hardwickii
(Miers, 1878)

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There are no data on the past and present population size and distribution of *Parapenaeopsis hardwickii* in the Bangladesh. Due to the lack of any useful data, *P. hardwickii* is placed under the category of Data Deficient.

Date Assessed: 20 June 2014

History

Regional Status: *Parapenaeopsis hardwickii* has not been assessed in Bangladesh.

Geographic Range

Global *Parapenaeopsis hardwickii* is distributed in Indo-West Pacific regions from Pakistan to Borneo, China, India (north-west), Indonesia, Japan, Singapore, Taiwan and Thailand (Holthuis 1980).



Parapenaeopsis hardwickii

© Md. Enamul Hoq

Bangladesh: Not known

Habitat and Ecology

Marine bottom dwelling *Parapenaeopsis hardwickii* can attain a maximum body length 135 mm by female and 111 mm by male. It is found in the marine water from the coastline to depths of about 90 m, usually less than 20 m, on bottom of mud, sandy-mud or sand. Juveniles mainly inhabit estuaries and backwaters. This shrimp is caught by trawls, sometimes also by boat seines and stake nets, with females usually outnumbering males in the catches. They are available during June-September (though very little quantity) at the down of the estuary particularly at the dawn in low tide by set bag net.



Assessor: Mostafa Ali Reza Hossain

Parapenaeopsis maxillipedo

Species ID: CR0032

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Parapenaeopsis maxillipedo* Alcock, 1905

English Name: Torpedo Shrimp

Bengali Name: Torpedo Chingri

Synonym/s: *Parapenaeopsis cornuta maxillipedo* Alcock, 1905

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There are no data on the past and present population size and distribution of Torpedo shrimp, *Parapenaeopsis maxillipedo* inside Bangladesh waters. Therefore, *P. maxillipedo* is assessed as Data Deficient.

Date Assessed: 21 June 2014

History

Regional Status: *Parapenaeopsis maxillipedo* was not assessed before in Bangladesh.

Geographic Range

Global: *Parapenaeopsis maxillipedo* is distributed in Indo-West Pacific: from the west coast of India and Sri Lanka to Indonesia, Malaya, New Guinea, Northern Australia and Philippines (Holthuis 1980, Carpenter and Niem 1998).

Bangladesh: Not known

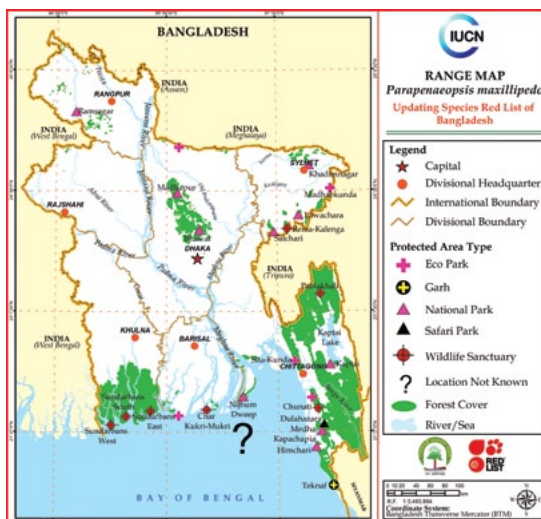


Parapenaeopsis maxillipedo

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Habitat and Ecology

Parapenaeopsis maxillipedo can attain a maximum body length of 125 mm by female and 100 mm by male. *Parapenaeopsis maxillipedo* is a marine demersal shrimp found at sea in shallow depths of less than 30 m (general range 9-11 m) on mud-banks, or sandy-mud bottom and caught by trawls, gill nets, push nets, and shore seines (Subramanian 2000).



Assessor: Mostafa Ali Reza Hossain

Parapenaeopsis uncta

Species ID: CR0035

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Parapenaeopsis uncta* Alcock, 1905
English Name: Uncta Shrimp, Pink Shrimp
Bengali Name: Khoira Chingri, Tara Chingri, Tiga Chingri
Synonym/s: *Parapenaeopsis probata* Hall, 1961
Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: No data on population or its trends of *Parapenaeopsis uncta* are available inside Bangladesh. There is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status of Uncta shrimp, *Parapenaeopsis uncta*. Based on above features, *Parapenaeopsis uncta* mulls over to Data Deficient.

Date Assessed: 26 June 2014

History

Regional Status: *Parapenaeopsis uncta* was not assessed before in Bangladesh.

Geographic Range

Global: *Parapenaeopsis uncta* is reported from Indo-West Pacific: Bangladesh, India, Indonesia, Kuwait, Malaysia, Pakistan and Sri Lanka (Holthuis 1980, Carpenter and Niem 1998).

Bangladesh: Not known.



Parapenaeopsis uncta

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Habitat and Ecology

Male *Parapenaeopsis uncta* can attain a maximum total length of 120 mm. The marine demersal *Parapenaeopsis uncta* is found in a depth of 5-90 m on the clean sand and sometimes in sand mixed with shell fragments.



Assessor: Mostafa Ali Reza Hossain

Penaeus canaliculatus

Species ID: CR0036

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Penaeus canaliculatus* (Olivier, 1811)

English Name: Striped Prawn, Witch Prawn

Bengali Name: Dorakata Chingri

Synonym/s: *Melicertus canaliculatus* Olivier, 1811

Palaemon canaliculatus Olivier, 1811

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Date Deficient (DD) ver 3.1

Justification: *Penaeus canaliculatus* is listed as Data Deficient in view of the absence of sufficient information on its Extent of Occurrence, ecological requirement, population size, trend and any long-term threat.

Date Assessed: 22 February 2015

History

Regional Status: The species has never been assessed in Bangladesh.

Geographic Range

Global: *Penaeus canaliculatus* is widely but not densely distributed through the Indo-West Pacific region from Southeast Africa to Taiwan, including the Malay archipelago, Okinawa and in Polynesia (Carpenter and Niem 1998) It is also found in Bangladesh (Ahmad 1957),



Penaeus canaliculatus

© Mostafa A R Hossain

Indonesia, Pakistan, the Philippines and Tones Strait off Queensland. The species is reported to be rather common in eastern New Guinea.

Bangladesh: Not known

Habitat and Ecology

Penaeus canaliculatus is a marine shrimp that inhabits sandy bottom within a depth range of 33 to 50 meters in sandy-muddy substratum (Choy 1983, Carpenter and Niem 1998).



Assessor: Md. Enamul Hoq

Trachysalambria curvirostris

Species ID: CR0042

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PENAEIDAE

Scientific Name: *Trachysalambria curvirostris* (Stimpson, 1860)

English Name: Southern Rough Shrimp

Bengali Name: Kharkharia Chingri, Khaskhasia Chingri

Synonym/s: *Penaeus longipes* Paulson, 1875

Parapenaeus curvirostris Rathbun, 1902

Trachypeneus asper Alcock, 1905

Metapenaeus curvirostris Nobili, 1906

Trachypenaeus curvirostris malaiana

Balss, 1933

Trachypeneus (Trachysalambria) curvirostris

Burkenroad, 1934

Trachypeneus (Trachysalambria) curvirostris

palaestinensis Burkenroad, 1950

Trachypeneus (Trachysalambria) curvirostris

malaiana Burkenroad, 1959

Taxonomic Notes: None



Trachysalambria curvirostris

© Fisheries Research Institute, Taiwan

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is no information to make a direct or indirect assessment of its risk of extinction based on the distribution and/or population status of the species *Trachysalambria curvirostris* inside Bangladesh waters. Based on above features, *T. curvirostris* is assessed under the category of Data Deficient.

Date Assessed: 14 August 2014

History

Regional Status: The species was not assessed before in Bangladesh.

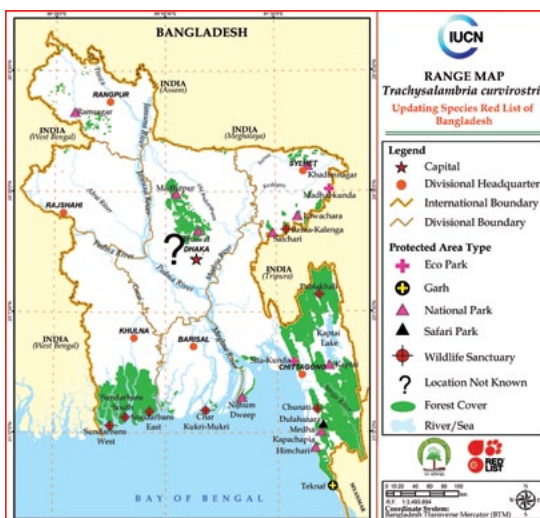
Geographic Range

Global: *Trachysalambria curvirostris* is available in Indo-West Pacific, Red Sea, East Africa and Madagascar to Australia, China and, Japan. The species is also found in the eastern Mediterranean through the Suez Canal and has been reported from Egypt, Israel and Turkey (Holthuis 1980, Carpenter and Niem 1998).

Bangladesh: Not known

Habitat and Ecology

The species inhabits between depth of 10 to 300 m but usually between 30 and 60 m. It prefers sand, mud, or sandy-mud bottom.



Assessor: Md. Enamul Hoq

Acetes chinensis

Species ID: CR0046

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	SERGESTIDAE

Scientific Name: *Acetes chinensis* Hansen, 1919

English Name: Northern Mauxia Shrimp, Penicillated Shrimp

Bengali Name: Lona Chingri

Synonym/s: None

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: In view of the absence of sufficient information on its Extent of Occurrence, cological requirement, population size and trend, and any long-term threat, *Acetes chinensis* is assessed as Data Deficient.

Date Assessed: 16 August 2014

History

Regional Status: *Acetes chinensis* was not assessed before in Bangladesh.

Geographic Range

Global: The species is widely distributed to in tropical, subtropical and temperate region such as Indo-west pacific including China, India, Japan, Korea and Taiwan (Holthuis 1980).

Bangladesh: The species is available in the Bangladesh coastal areas, including the Sundarbans (Kamal and Khan 2009).



Acetes chinensis

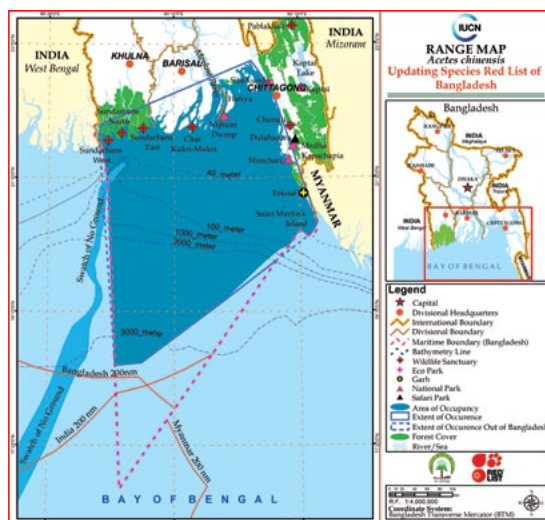
© Mostafa A R Hossain

EOO: 1,11,058 km²

AOO: 97,440 km²

Habitat and Ecology

The species lives in shallow coastal waters and marine habitat, is a nocturnal predator and likes to feed on zooplanktons, especially diatoms.



Assessor: Md. Sherazul Islam

Acetes erythraeus

Species ID: CR0047

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	SERGESTIDAE

Scientific Name: *Acetes erythraeus* Nobili, 1905

English Name: Tsivakihini Paste Shrimp

Bengali Name: Vorta Chingri, Loila Chingri

Synonym/s: None

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: *Acetes erythraeus* is listed as Data Deficient in view of the absence of sufficient information on its Extent of Occurrence, ecological requirement, population size and trend; and any long-term threat.

Date Assessed: 17 August 2014

History

Regional Status: This species was not assessed before in Bangladesh.

Geographic Range

Global: The species is distributed in Indo-west pacific region including Red sea and South-east Africa to China, Hong Kong, India, Indonesia, Kenya, Madagascar, N.E. Australia, Malaysia, Mozambique, Tanzania and Thailand (Holthuis 1980).

Bangladesh: The species is found in the coastal areas bordering the Sundarbans (Vyas 2012).



Acetes erythraeus

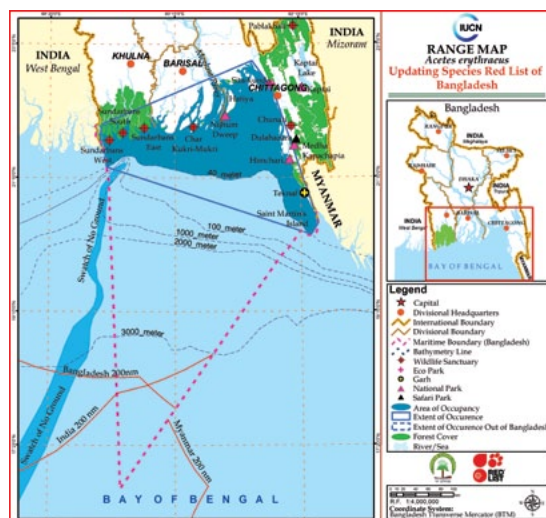
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EOO: 54,628 km²

AOO: 29,659 km²

Habitat and Ecology

Acetes erythraeus is reported mostly in brackish water, muddy or sandy bottom up to a depth of 55 m.



Assessor: Md. Sherazul Islam

Acetes intermedius

Species ID: CR0049

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	SERGESTIDAE

Scientific Name: *Acetes intermedius* Omori, 1975

English Name: Taiwan Mauxia Shrimp

Bengali Name: Not known

Synonym/s: None

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: *Acetes intermedius* is listed as Data Deficient in view of the absence of sufficient information on its Extent of Occurrence and other ecological parameters.

Date Assessed: 22 August 2014

History

Regional Status: This species has not been assessed in Bangladesh.

Geographic Range

Global: *Acetes intermedius* is abundant in Indo-West Pacific region, India to Africa, Indonesia to Taiwan, Philippines and the southern coast of Java (Holthuis 1980, Carpenter and Niem 1998).

Bangladesh: Not known

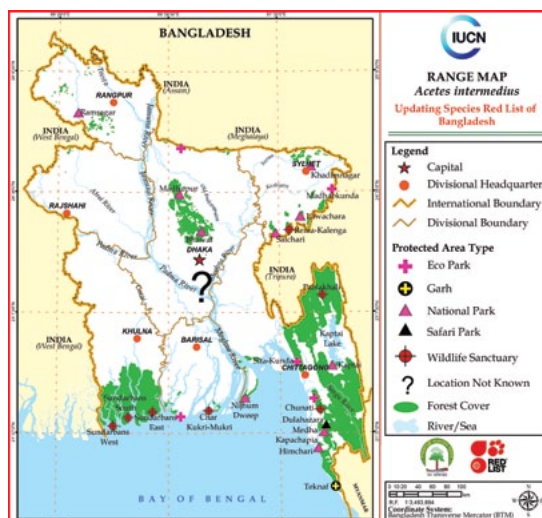


Acetes intermedius

© Fisheries Research Institute, Taiwan

Habitat and Ecology

Acetes intermedius feeds on phytoplankton, zooplankton and amorphous materials. It performs a nocturnal vertical migration to avoid predators and to allow for safe feeding (Chiou *et al.* 2005).



Assessor: Mohd. Golam Quader Khan

Acetes vulgaris

Species ID: CR0051

DATA
DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	SERGESTIDAE

Scientific Name: *Acetes vulgaris* Hansen, 1919

English Name: Jembret Shrimp, Rebon Shrimp

Bengali Name: Chingri, Shada Icha

Synonym/s: None

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: *Acetes vulgaris* is considered as Data Deficient as there exists no information on its distribution, population trend and ecology.

Date Assessed: 01 August 2014

History

Regional Status: *Acetes vulgaris* was not assessed before in Bangladesh.

Geographic Range

Global: *Acetes vulgaris* is distributed in Bangladesh, China, Indonesia, Malaysia, Singapore, Thailand, Timor-Leste and Vietnam (Holthuis 1980, Carpenter and Niem 1998).

Bangladesh: The shrimp is found possibly in the Bay of Bengal part of Bangladesh.

Habitat and Ecology

The epipelagic species is found over sandy and muddy bottoms in depths of 9 to 55 m. The species is omnivorous-detrivorous in nature.



Acetes vulgaris

© Amin et al.



Assessor: Mst. Kaniz Fatema

Solenocera melantho

Species ID: CR0045

DATA
DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	SOLENICERIDAE

Scientific Name: *Solenocera melantho* de Man, 1907

English Name: Razor Mud Shrimp

Bengali Name: Cara Chingri, Shora Chingri, Ghora Chingri

Synonym/s: *Solenocera prominens* Kubo, 1949

Solenocera koelbeli de Man, 1911

Solenocera halli Starobogatov, 1972

Solenocera australiana Pérez Farfante and Grey, 1980

Solenocera alfonso Pérez Farfante, 1981

Taxonomic Notes: Pérez Farfante, (1981) described the species as *Solenocera alfonso*. Present valid name is *Solenocera melantho*

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: *Solenocera melantho* is listed as Data Deficient in view of the absence of sufficient information on its Extent of Occurrence, ecological requirement, population size and trend, and any long-term threat.

Date Assessed: 20 August 2014

History

Regional Status: This species has not yet been assessed in Bangladesh.

Geographic Range

Global: *Solenocera melantho* is present in Western Pacific and definitely known from China, Indonesia, Japan, Korea, the Philippines and Taiwan (Carpenter and Niem 1998).



Solenocera melantho

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Bangladesh: Not known

Habitat and Ecology

The species inhabit the upper slopes of continental shelves at depths from 78 to 400 m, in sandy mud bottom. It is nocturnal and mainly feeds on small zooplanktons, phytoplanktons and debris.



Assessor: Md. Sagir Ahmed

Scyllarus depressus

Species ID: CR0077

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	SCYLLARIDAE

Scientific Name: *Scyllarus depressus* (Smith, 1881)

English Name: Scaled Slipper Lobster

Bengali Name: Not known

Synonym/s: *Arctus depressus* Smith, 1881

Scyllarus nearctus Holthuis, 1960

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is no information to make a direct or indirect assessment of its risk of extinction based on its distribution and/or population status of *Scyllarus depressus* inside Bangladesh waters. Therefore, *Scyllarus depressus* is assessed under the Category Data Deficient.

Date Assessed: 20 October 2014

History

Regional Status: The species has never has been assessed in Bangladesh.

Geographic Range

Global: This species is reported from the west central Atlantic (Holthuis 1991) and from the tropical northwestern Atlantic, the Gulf of Mexico and in the western Caribbean waters (Manzanilla-Dominguez and Gasca 2004).

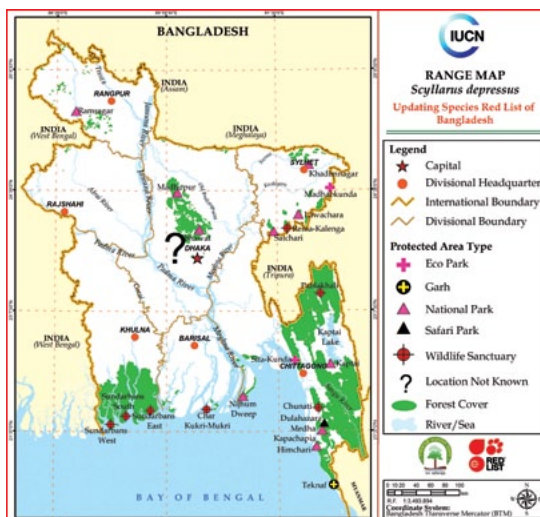
Bangladesh: Not known



Scyllarus depressus © David Walker, NOAA Fisheries Service, NOAA Teacher at Sea

Habitat and Ecology

Scyllarus depressus is found on bottoms composed of sponge, dead and living coralline algae with little sand but much silt. It occurs from 29 to 263 m depth (Williams 1986).



Assessor: Md. Enamul Hoq

Cypris subglobosa

Species ID: CR0116

DATA
DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	OSTRACODA	PODOCOPIDA	CYPRIDIDAE

Scientific Name: *Cypris subglobosa* (Sowerby, 1840)

English Name: Seed Shrimp

Bengali Name: Not known

Synonym/s: *Paracyprretta subglobosa* (Sowerby, 1840)

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: No information is available on distribution and/or population status of *Cypris subglobosa* inside Bangladesh to make any assessment of its risk of Extinction. Therefore, *Cypris subglobosa* is assessed as Data Deficient.

Date Assessed: 22 January 2015

History

Regional Status: *Cypris subglobosa* has never been assessed in Bangladesh.

Geographic Range

Global: *Cypris subglobosa* is distributed in Africa, America and Asia (Saxena *et al.* 2011, Karuthapandi *et al.* 2012).

Bangladesh: Not known

Habitat and Ecology

Cypris subglobosa is a nektobenthic ostracod reproduces asexually. It occurs in all kinds of freshwater and marine environments.



Cypris subglobosa

© Md. Mizanur Rahman



Assessor: Md. Enamul Hoq

Eucypris virens

Species ID: CR0120

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	OSTRACODA	PODOCOPIDA	CYPRIDIDAE

Scientific Name: *Eucypris virens* (Jurine, 1820)

English Name: Seed Shrimp, Mussel Shrimp

Bengali Name: Not known

Synonym/s: *Monoculus virens* Jurine, 1820

Taxonomic Notes: In Bangladesh most of the taxonomic study of zooplankton including this species (*Eucypris virens*) have been done only up-to the generic level (*Eucypris* spp.). More study upto species level is needed to confirm the presence of *Eucypris virens* in different freshwater bodies.

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is very little or no information available on the biology of this species in Bangladesh. Therefore, it is considered as Data Deficient.

Date Assessed: 20 March 2015

History

Regional Status: *Eucypris virens* was not assessed in Bangladesh.

Geographic Range

Global: *Eucypris virens* is distributed throughout the Europe, Asia, North America, Australia, North Africa, New Zealand, Middle East, Central Asia, China (Schmit *et al.* 2007, Meisch 2000).



Eucypris virens

© Md. Mizanur Rahman

Bangladesh: only the genus (*Eucypris*) of the species *Eucypris virens* is reported from the Beel Koshba, Northern Bangladesh (Islam *et al.* 2010).

EOO: 39 km²

AOO: 30 km²

Habitat and Ecology

Eucypris virens is mostly a bottom dweller feeding on algae, decaying organic material, plants and small animals both alive and dead (Schmit *et al.* 2007). Ecologically, this ostracod can be classified as mesothermophilic, titanoeuryplastic and oligohalophilic (Meisch 2000 cited in Kulkoyluoglu 2004).



Assessor: Mohammad Ali Azadi

Stenocypris fontinalis

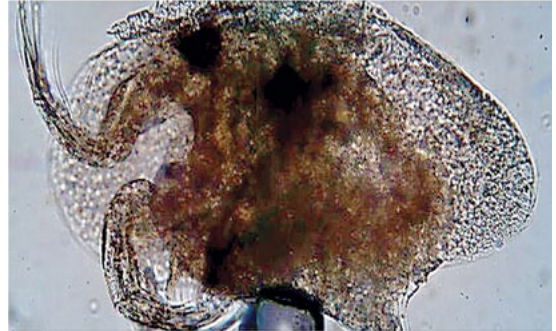
Species ID: CR0117

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	OSTRACODA	PODOCOPIDA	CYPRIDIDAE

Scientific Name: *Stenocypris fontinalis* Vavra, 1895
English Name: Seed Shrimp
Bengali Name: Not known
Synonym/s: Not known
Taxonomic Notes: None



Stenocypris fontinalis

© Mukhtiar Ahmed Mahar, University of Sindh

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is no literature on the population size, occurrence and distribution of *Stenocypris fontinalis* in Bangladesh. Therefore, the species is assessed as Data Deficient.

Date Assessed: 17 February 2015

History

Regional Status: *Stenocypris fontinalis* has never been assessed in Bangladesh.

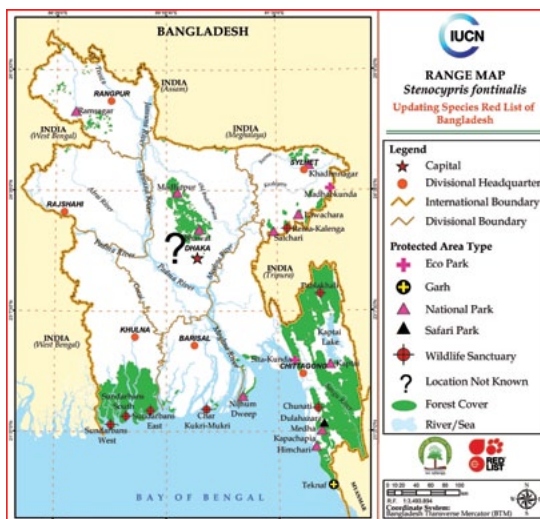
Geographic Range

Global: The species is recorded from India (Sontakke and Mokashe 2014) and Pakistan (Chaudhari *et al.* 1986).

Bangladesh: Not known

Habitat and Ecology

Not known



Assessor: Md. Selim Reza

Stenocypris malcolmsoni

Species ID: CR0118

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	OSTRACODA	PODOCOPIDA	CYPRIDIDAE

Scientific Name: *Stenocypris malcolmsoni* Brady, 1886

English Name: Not known

Bengali Name: Not known

Synonym/s: *Stenocypris archoplites* Ferguson, 1964

Stenocypris bolieki Ferguson, 1962

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is no published information available on any aspect of *Stenocypris malcolmsoni* in Bangladesh. Therefore, *S. malcolmsoni* is assessed under the category of Data Deficient.

Date Assessed: 17 February 2015

History

Regional Status: *Stenocypris malcolmsoni* was not assessed in Bangladesh.

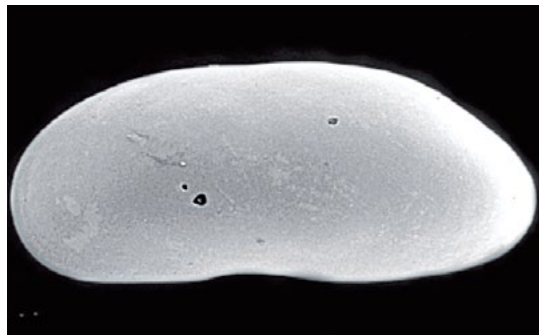
Geographic Range

Global: This species has been reported from many areas (Victor and Fernando 1981) and is widespread in Asia (Victor and Fernando 1981, Okubo and Ida 1989).

Bangladesh: Not known

Habitat and Ecology

Stenocypris malcolmsoni is a non-marine species.



Stenocypris malcolmsoni

© Pérez et al 2009



Assessor: Jannatul Ferdous

Associate Assessor/s: Md. Selim Reza

Cyclestheria hislopi

Species ID: CR0124

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	BRANCHIOPODA	DIPLOSTRACA	CYCLESTHERIIDAE

Scientific Name: *Cyclestheria hislopi* (Baird, 1859)

English Name: Clam Shrimp

Bengali Name: Not known

Synonym/s: Not known

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data deficient (DD) ver 3.1

Justification: *Cyclestheria hislopi* has not yet been reported from Bangladesh but is conjectured to be present here because it occurs in the neighbouring countries. Therefore, it is assessed as Data Deficient.

Date Assessed: 15 March 2015

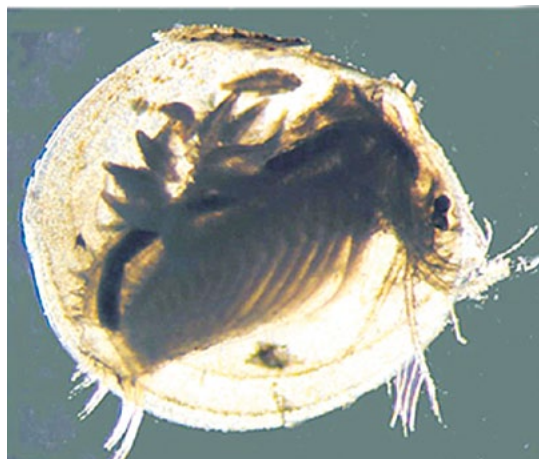
History

Regional Status: *Cyclestheria hislopi* has not been assessed in Bangladesh.

Geographic Range

Global: *Cyclestheria hislopi* is widely distributed in all the continents except Antarctica with a very wide range from India, Asia, the tropics of most continents, Australia, Africa, Central and South America, and North America and Mexico (Paul and Nayar 1977, Olesen *et al.* 1996, Yashima *et al.* 2011, Padhye and Dahanukar 2015).

Bangladesh: Not known

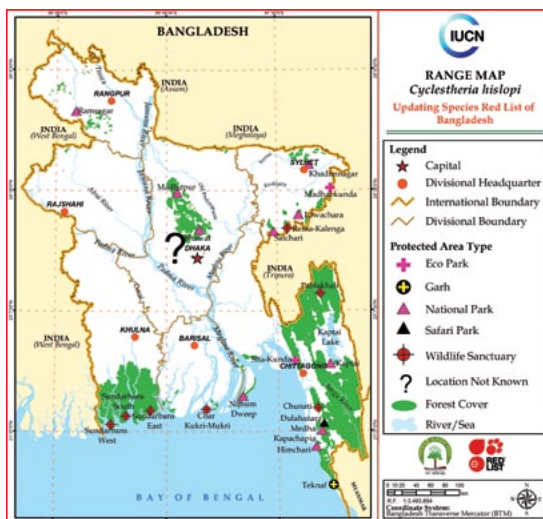


Cyclestheria hislopi

© Hemant Ghate & Sameer Padhye

Habitat and Ecology

Cyclestheria hislopi is benthic but many can swim actively and are often associated with macrophytes. It is a filter-feeder deriving its food from suspended particles or solids stirred up from the bottom. It reproduces parthenogenetically. It is found in freshwater habitats - ponds, rivers and water reservoirs, also occur sometimes in ephemeral ponds (typical), but also in permanent bodies of water and almost always associated with a thick algal mat or other aquatic vegetation, especially *Hydrilla verticellata* and less frequently *Eichornia*.



Assessor: Mostafa Ali Reza Hossain

Calappa bilineata

Species ID: CR0142

DATA
DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	CALAPPIDAE

Scientific Name: *Calappa bilineata* (Ng, Lai and Aungtonya, 2002)

English Name: Two Stripped Box Crab

Bengali Name: Not known

Synonym/s: Not known

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: *Calappa bilineata* is recently recorded in the catch from the St. Martin's Island, Teknaf and Cox's Bazar. Little is known about this species' distribution, population, habitat requirements or threats. The species is therefore, assessed as Data Deficient.

Date Assessed: 28 August 2015

History

Regional Status: *Calappa bilineata* has not been assessed in Bangladesh.

Geographic Range

Global: The species has Indo-West Pacific distribution and is generally found in Malaysia, Sri Lanka and Thailand (Ng *et al.* 2002). The species is also recorded from Bangladesh (pers. com.) and India (Kumar *et al.* 2013, Saravanan and Ramamoorthy 2013, Kamalakkannan 2015).



Calappa bilineata

© Muntasir Akash

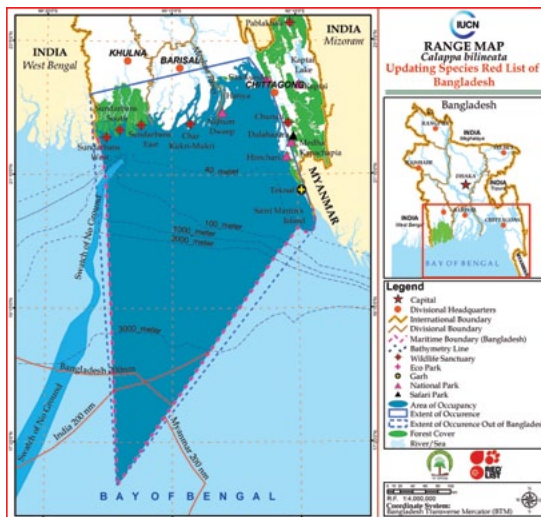
Bangladesh: *Calappa bilineata* is available in the Bay of Bengal. Only confirmed record of it is by Muntasir Akash 2012 who photographed a specimen of it in the Saint Martin's Island under the District of Cox's Bazar (Akash, Muntashir pers. comm. MS Student, Department of Zoology (Wildlife), University of Dhaka), based on the picture he took on 07 December 2012 and identified by Mostafa Ali Reza Hossain, Lead Assessor of Updating Red List Project (Crustaceans).

EOO: 1,45,569 km²

AOO: 1,17,086 km²

Habitat and Ecology

Not known



Assessor: Mostafa Ali Reza Hossain

Calappa lophos

Species ID: CR0081

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	ISOPODA	CALAPPIDAE

Scientific Name: *Calappa lophos* (Herbst, 1782)

English Name: Common Box Crab

Bengali Name: Not Known

Synonym/s: *Cancer lophos* Herbst, 1782

Calappa guerini Brito Capello, 1871

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is no information on *Calappa lophos* inside Bangladesh. Therefore, the species is assessed as Data Deficient.

Date Assessed: 18 November 2014

History

Regional Status: *Calappa lophos* has not been assessed before in Bangladesh.

Geographic Range

Global: *Calappa lophos* is distributed in Indo-Pacific and Atlantic Ocean: Japan, China to Southeast Asia, Australia to Sri Lanka. It is also available in Mozambique and Tanzania. (Carpenter and Niem 1998).

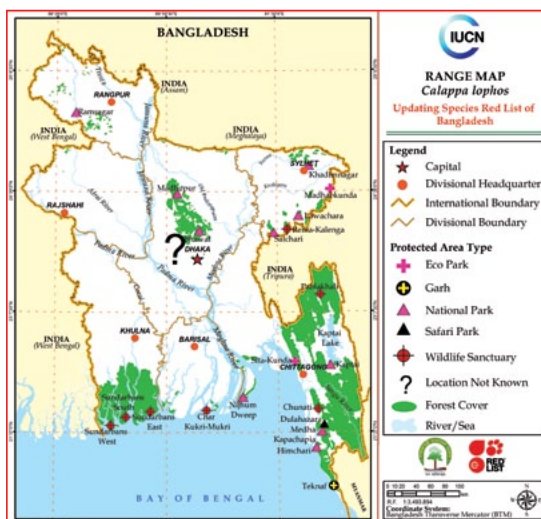
Bangladesh: Not known



Calappa lophos © 2016 Guido & Philippe Poppe - www.conchology.be

Habitat and Ecology

Calappa lophos lives in sandy-muddy area, burrows body on soft and mud substrates and inhabits from depths of 10 to 100 m.



Assessor: Mostafa Ali Reza Hossain

Calappa pustulosa

Species ID: CR0082

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	CALAPPIDAE

Scientific Name: *Calappa pustulosa* Alcock, 1896

English Name: Pustulous Box Crab

Bengali Name: Not known

Synonym/s: Not known

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: Nothing is known about the species *Calappa pustulosa* inside Bangladesh. Therefore, the taxon is assessed as Data Deficient.

Date Assessed: 18 November 2014

History

Regional Status: *Calappa pustulosa* has not been assessed before in Bangladesh.

Geographic Range

Global: *Calappa pustulosa* is found in China, India (Lakshadweep islands and Orissa coast), Japan, Maldives, Myanmar, Philippines and Viet Nam (Sekai 1976, Galil 1997).

Bangladesh: Not known

Habitat and Ecology

The species is found the bottoms of soft sand or broken shells at 50-150 m depth.



Calappa pustulosa © 2016 Guido & Philippe Poppe - www.conchology.be



Assessor: Mostafa Ali Reza Hossain

Carpilius maculatus

Species ID: CR0092

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	CARPILLIDAE

Scientific Name: *Carpilius maculatus* (Linnaeus, 1758)
English Name: Spotted Reef Crab, Reef Crab, Seven-Eleven Crab, Spotted Reef Crab, Dark-Finger Coral Crab and Large Spotted Crab
Bengali Name: Not Known
Synonym/s: *Cancer maculatus* Linnaeus, 1758
Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: Neither present nor past population size of *Carpilius maculatus* is known. There is no information to make a direct or indirect assessment of its risk of extinction based on distribution and/or population status of *Carpilius maculatus* inside Bangladesh waters. Therefore, the taxon is assessed as Data Deficient.

Date Assessed: 24 February 2015

History

Regional Status: *Carpilius maculatus* has not been evaluated in Bangladesh.

Geographic Range

Global: *Carpilius maculatus* is distributed Indo-West Pacific region, Cocos Islands up to Hawaii and French Polynesia (Carpenter and Niem 1998), the far western Pacific, the Indian Ocean and the Red Sea (Wetzer *et al.* 2003).

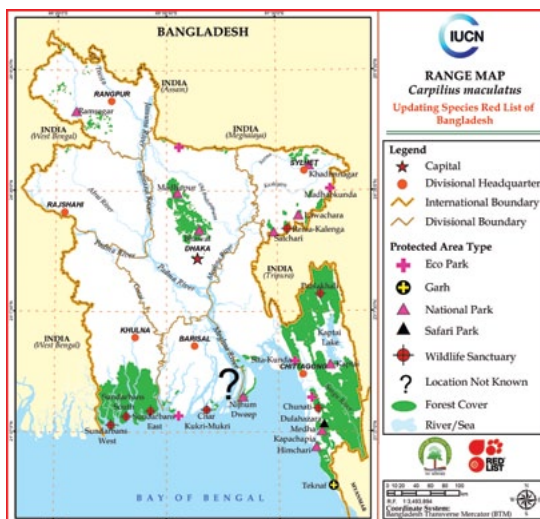


Carpilius maculatus © 2016 Guido & Philippe Poppe - www.conchology.be

Bangladesh: Not known

Habitat and Ecology

Carpilius maculatus inhabits reefs in a depth range of 0-6 m. It lives in subtropical and tropical climates and feeds on marine snails.



Assessor: Mostafa Ali Reza Hossain

Daldorfia horrida

Species ID: CR0087

DATA
DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	DALDORFIIDAE

Scientific Name: *Daldorfia horrida* (Linnaeus, 1758)

English Name: Horrida Elbow Crab

Bengali Name: Shila Kakra

Synonym/s: *Cancer horridum* Linnaeus, 1758

Maja horrida Bosc, 1802

Daldorfia horrid Rathbun, 1904

Taxonomic Notes: *Daldorfia horrida* differs from *D. rathbunae* having more rugose carapace. In *D. horrida*, only the teeth tips are slightly bent onwards, whereas in *D. rathbunae* about half the length of teeth are bent onwards at an angle of 90°.

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: *Daldorfia horrida* is reported from the only coral-ringed Island, the Saint Martin's in the Bay of Bengal (Ahmed 2008). Although, the Extent of Occurrence and the Area of Occupancy are found small enough to assess the species as Critically Endangered, as no other information is available on the population size, stocks or level of exploitation of this species from Bangladesh waters therefore, the species has been assessed as Data Deficient.

Date Assessed: 20 November 2014

History

Regional Status: *Daldorfia horrida* has not been assessed before in Bangladesh.



Daldorfia horrida

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Geographic Range

Global: The species is widely reported from Indo-west Pacific from Japan to south-east Asia, Sri Lanka, Mauritius and Red Sea (Flipse 1930).

Bangladesh: It has only been reported from the Saint Martin's Island of Bangladesh (Ahmed 2008).

EOO: 8 km²

AOO: 4 km²

Habitat and Ecology

It is an omnivorous, predatory and scavenging species; feeds on small crabs, mollusks and seaweeds. The species is found in hard bottom, coral reefs along shoreline to 50 m depth.



Assessor: Md. Sagir Ahmed

Dotilla myctiroides

Species ID: CR0099

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	DOTILIDAE

Scientific Name: *Dotilla myctiroides* (H. Milne-Edwards, 1852)

English Name: Sand Bubbler Crab

Bengali Name: Not known

Synonym/s: *Dotilla sulcata* Forskål, 1775

Dotilla fenestrata Hilgendorf, 1869

Dotilla intermedia De Man, 1888

Dotilla wichmanni De Man, 1892

Dotilla blanfordi Alcock, 1900

Dotilla malabarica Nobili 1903

Dotilla pertinax Kemp, 1915

Taxonomic Notes: The first sand bubbler crab to be described was *Cancer sulcatus* (now *Dotilla sulcata*) by Peter Forskål in 1775. The genus *Scopimera* was originally described as a subgenus of *Ocypode* by Wilhem de Haan in 1833, although the first species, *Scopimera globosa* was not validly described until 1835. At the same time, de Haan tried to erect the genus *Doto* for Forskål's *Cancer sulcatus*, not realising that the name was preoccupied by the mollusc genus *Doto*. The first available name for that genus was published by William Stimpson in 1858, who called it *Dotilla*.



Dotilla myctiroides

© Chak Jawa - www.wildsingapore.com

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: The species is available in Saint Martin's Island. It is possibly the commonest tiny beach crab available in Bangladesh coastal zone (M A R Khan pers. comm.) but due to absence of any published literature *Dotilla myctiroides* is assessed as Data Deficient.

Date Assessed: 20 December 2014

History

Regional Status: *Dotilla myctiroides* was not assessed in Bangladesh.

Geographic Range

Global: *Dotilla myctiroides* is available in tropical Asia and East Asia - Bangladesh, India, Japan, Myanmar, Pakistan Sri Lanka, and Thailand (Alcock 1900, Thompson and Islam 2010, Raju *et al.* 2015).

Bangladesh: It is found intertidal sandy beaches of Cox's Bazar, Saint Martin's Island (Thompson and Islam 2010) Kochikhali Beach in the Sundarban and possibly in most other sandy beaches along the shoreline of the Bay of Bengal in Bangladesh.

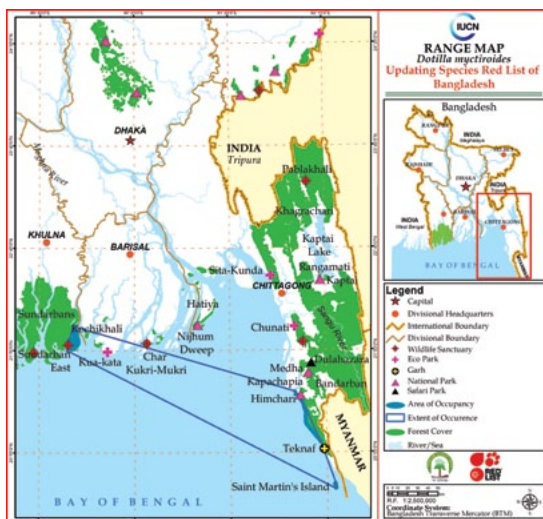
EEO: 13,229 km²

AOO: 146 km²

Habitat and Ecology

Dotilla myctiroides is omnivorous and scavenger in nature. This species builds a burrow, called an "igloo", in unstable sand as well as in well-drained and firm sand. In building the igloo, the crab excavates sand and forms it into spherical pellets. These pellets are used to form a circular wall and roof in the burrow. The resulting structure holds a small amount of air in addition to the crab itself (Takeda *et al.* 1996). It lives in inter-tidal sandy beach.

Assessor: Zannatul Ferdoushi



Grapsus albolineatus

Species ID: CR0112

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	GRAPSIDAE

Scientific Name: *Grapsus albolineatus* Latreille, in Milbert, 1812

English Name: Mottled Sally Lightfoot Crab

Bengali Name: Not known

Synonym/s: *Cancer strigosus* Herbst, 1799

Grapsus strigosus Herbst, 1799

Grapse albolineata Latreille, in Milbert, 1812

Grapsus albolineatus Lamarck, 1818

Grapsus (Goniopsis) flavipes MacLeay, 1838

Grapsus peroni H. Milne Edwards, 1853

Grapsus longipes Stimpson, 1858

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is no documentation or report regarding the distribution or population size of *Grapsus albolineatus* in Bangladesh, on the basis of which status of this Mottled Sally Lightfoot Crab can be drawn. Due to the paucity of reports on its occurrence and distribution, this species is assessed as Data Deficient.

Date Assessed: 20 January 2015

History

Regional Status: *Grapsus albolineatus* was not assessed in Bangladesh.

Geographic Range

Global: *Grapsus albolineatus* is found in West Indian



Grapsus albolineatus

© Aal Maruf Russell

Ocean, Red Sea and Indo pacific region (Carpenter and Niem 1998).

Bangladesh: Not known

Habitat and Ecology

Grapsus albolineatus prefers mostly rocky shores and few mangrove muddy substrate. It is available mostly on rocks in the splash zone and in the infra-tidal zone. It is restricted to offshore islands. It is a bottom dwelling scavenger and an omnivore crab. It feeds also on selective filamentous algae/seaweeds, specifically green and brown turf species (Ng *et al.* 2008).



Assessor: Muhammad Abdur Rouf

Associate Assessor/s: Md. Noman Siddiqui

Metopograpsus messor

Species ID: CR0106

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	GRAPSIDAE

Scientific Name: *Metopograpsus messor* (Forskål, 1775)

English Name: Alamihi, Paddler Crab

Bengali Name: Gasho Kankra

Synonym/s: *Cancer messor* Forskål, 1775

Grapsus aethiopicus Hilgendorf, 1869

Grapsus gaimardi Audouin, 1826

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: Basically there is very little or no information on the non-commercial crab fauna of Bangladesh, which is a debacle in the analysis of species information for Updating Species Red List of Bangladesh (M A R Khan pers. com.). *Metopograpsus messor* is no exception. In the absence of basic data on its occurrence and abundance in the country, it is considered as Data Deficient.

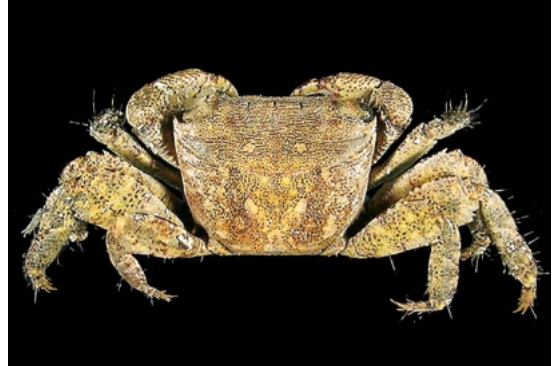
Date Assessed: 22 December 2014

History

Regional Status: *Metopograpsus messor* has not been assessed before in Bangladesh.

Geographic Range

Global: *Metopograpsus messor* is abundant in tropical Indo-Pacific, from East Africa, along the coast of the Indian ocean, Red Sea and the Persian Gulf, east coast



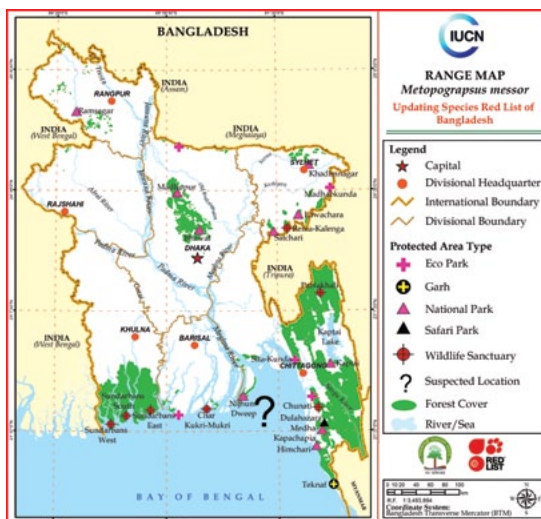
Metopograpsus messor © 2016 Guido & Philippe Poppe - www.conchology.be

of Africa, Madagascar, West Pacific, also distributed in Australia and at least as far east as Fiji. (Edmondson 1959, Hartnoll 1975, Vannini & Valmori 1981, Shokita *et al.* 2000).

Bangladesh: There is no published literature on it but it is apparently one of the commonest coastal and brackish water crabs of Bangladesh (M A R Khan pers. com.).

Habitat and Ecology

Metopograpsus messor lives under rotting wood or brush, amongst boulders in promontories, on the wooden or concrete jetties in harbours and is capable of climbing trees and other vertical structures. (Vannini *et al.* 1997, M A R Khan pers. comm).



Assessor: Mostafa Ali Reza Hossain

Philyra globosa

Species ID: CR0083

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	LEUCOSIIDAE

Scientific Name: *Philyra globosa* de Man, 1888

English Name: Purse Crab

Bengali Name: Not known

Synonym/s: *Philyra polita* Henderson, 1893

Taxonomic Notes: The species is also described as *Philyra globosa* (Fabricius, 1888)

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: This species is documented by Shafi and Quddus 1982 with probable availability in Cox's Bazar, Moheshkhali, Kutubdia and Sonadia Islands. Since then, there has not been any record of sighting, habitat quality, population trend and number of locations. Therefore, the status of *Philyra globosa* is assessed as Data Deficient.

Date Assessed: 20 November 2014

History

Regional Status: *Philyra globosa* has not been assessed before in Bangladesh.

Geographic Range

Global: *Philyra globosa* is distributed in Persian Gulf, Pakistan, India (East and West coast, Andaman and Nicobar islands) (Alcock 1896, Chhappgar 1957, Shafi and Quddus 1982, Kollimalai and Fernando 2012).



Philyra globosa

© Galil B S 2009

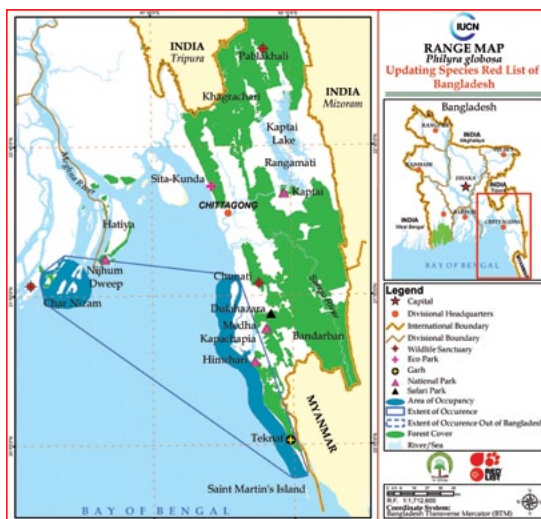
Bangladesh: It is found in coasts of Cox's Bazar, Moheshkhali, Kutubdia, Sonadia Islands (Shafi and Quddus 1982).

EOO: 12,429 km²

AOO: 2,435 km²

Habitat and Ecology

Philyra globosa is found in sandy bottoms from low tidal mark to a depth of 30 m.



Assessor: Mostafa Ali Reza Hossain

Matuta planipes

Species ID: CR0085

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	MATUTIDAE

Scientific Name: *Matuta planipes* (Fabricius, 1798)

English Name: Flower Moon Crab

Bengali Name: Lajjabati Kankra

Synonym/s: *Cancer americanu*, Seba, 1758
Cancer planipes Weber, 1795
Matuta planipes Fabricius, 1798
Matuta appendiculata Bosc, 1830
Matuta lineifera Miers, 1877
Matuta rubrolineata, Miers, 1877
Matuta laevidactyla Miers, 1880
Matuta victor Alcock, 1896
Matuta flagra Shen, 1936

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: *Matuta planipes* is reported from a wide range of local areas from where there is no further information. The species is therefore, assessed as Data Deficient.

Date Assessed: 18 November 2014

History

Regional Status: *Matuta planipes* has not been assessed before in Bangladesh.

Geographic Range

Global: *Matuta planipes* is distributed in Australia, Burma, China, India (Indian Ocean, Bangladesh-Indian Sundarbans



Matuta planipes

© Mostafa A R Hossain

and Gangetic Delta), Indonesia Malaysia, Pakistan- Japan, Persian Gulf, Sri Lanka (Tirmizi and Kazmi 1991, Gall and Clark 1995, Carpenter and Niemi 1998).

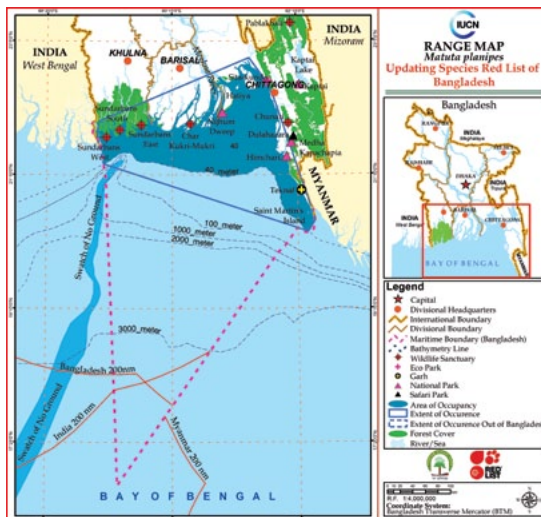
Bangladesh: The species is available in the intertidal zone of Cox's Bazar, Moheskhal, Kutubdia, Sonadia islands, St. Martin Island (Shafi and Quddus 1982), Bay of Bengal and the Sundarbans (Chowdhury and Hafijuddin 1991, Silambarasan 2013).

EEO: 54,628 km²

AOO: 29,659 km²

Habitat and Ecology

Matuta planipes is demersal in nature found in shallow sandy beach, between high and low tide marks to a depth of 10-15 m, generally burrowing. They swim in shallow waters, on sandy areas and near sea grasses at night time (Varadharajan 2012).



Assessor: Md. Sherazul Islam

Matuta victor

Species ID: CR0086

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	MATUTIDAE

Scientific Name: *Matuta victor* (Fabricius, 1781)

English Name: Common Moon Crab

Bengali Name: Chandhi Kakra

Synonym/s: *Matuta lesueurii* Leach, 1817

Matuta peronii Leach, 1817

Matuta victrix var. *crebripunctata* Miers, 1877

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: *Matuta victor* lacks any information on the basis of which it can be assessed following IUCN Criteria and Categories. Thus, the species is assessed as Data Deficient.

Date Assessed: 18 November 2014

History

Regional Status: *Matuta victor* has not been assessed before in Bangladesh.

Geographic Range

Global: *Matuta victor* is found in the Southeast Asia to the Philippines, New Caledonia, Fiji, and New Hebrides (Carpenter and Niem 1998, Galil and Mendelson 2013, Peter *et al.* 2002).



Matuta victor

© Fisheries Research Institute, Taiwan

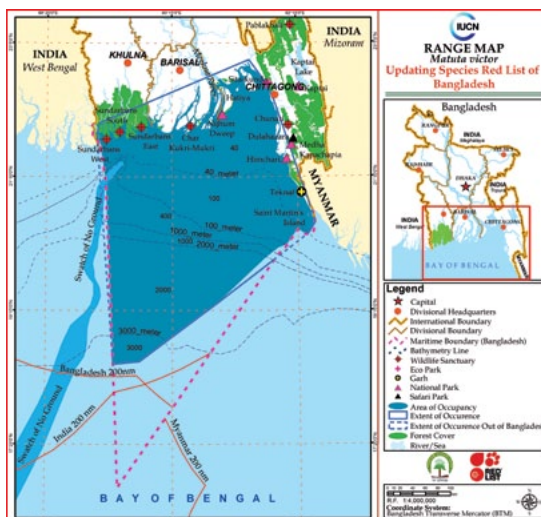
Bangladesh: The species is found in the Sundarbans and Bay of Bengal.

EOO: 1,11,058 km²

AOO: 97,440 km²

Habitat and Ecology

It is a marine species and prefers shallow waters (including intertidal areas) where it burrows into soft sand. The species is nocturnal, carnivorous and scavenger. It is demersal in nature, lives in depth range 0-20 m, generally burrowing (Ng 1998).



Assessor: Md. Sherazul Islam

Associate Assessor/s: Sumana Sharmin

Uca annulipes

Species ID: CR0100

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	OCYPODIDAE

Scientific Name: *Uca annulipes* (H. Milne-Edwards, 1837)

English Name: Mangrove Crab, Ring-legged Fiddler Crab

Bengali Name: Behala Badok Kakra

Synonym/s: *Gelasimus annulipes* H. Milne Edwards, 1837 (basionym)

Uca (Paraleptuca) annulipes (H. Milne Edwards, 1837)

Gelasimus chlorophthalmus MacLeay, 1838

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: It is to be noted that *Uca annulipes* is one of commonest crabs along coastline and estuaries having some ground cover. It is widely distributed with presumably large population and in the absence of any known major threat, it is assessed as Least Concern.

Date Assessed: 20 December 2014

History

Regional Status: *Uca annulipes* was not assessed in Bangladesh.

Geographic Range

Global: *Uca annulipes* is found in Indo-West Pacific: Madagascar, India to southern China, Indonesia, Malaysia Philippines and South Africa to Somalia (Vannini and



Uca annulipes

© IUCN/ Mohammed Noman

Valmori 1981, Rosenberg 2015).

Bangladesh: The species is found in the Sundarban Mangrove forest and other off-shore Mangrove islands of Bangladesh.

EOO: 6,298 km²

AOO: 4,114 km²

Habitat and Ecology

Uca annulipes is scavenger, detritus feeder and omnivorous (Icely and Jones 1978). (Icely and Jones 1978). It lives in brackish water, mangrove area, burrowing to about 50 cm depth. The crab is found primarily higher on the shore but can be found occur throughout the mangroves. It can survive in sediments with low organic matter and in a wide range of salinities (Gillikin 2000).



Assessor: Zannatul Ferdoushi

Uca dussumieri

Species ID: CR0101

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	OCYPODIDAE

Scientific Name: *Uca dussumieri* (Milne-Edwards, 1852)

English Name: Not known

Bengali Name: Not known

Synonym/s: *Gelasimus dussumieri* Milne Edwards H., 1852

Gelasimus dubius Stimpson, 1858

Uca dubia Miyake, 1936

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There exists no information on the Extent of Occurrence and Area of Occupancy of *Uca dussumieri* in Bangladesh. Therefore, the crab is assessed as Data Deficient.

Date Assessed: 17 December 2014

History

Regional Status: *Uca dussumieri* has not been assessed before in Bangladesh.

Geographic Range

Global: Thus crab is abundant in Eastern Australia, China, India, Indonesia, Japan Madagascar, Malaysia, Indonesia New Caledonia, New Guinea, Philippines, West Malay Peninsula, Solomon Islands, Sulu Archipelago, Sumatra, Thailand and Taiwan (Crane 1975, Ng *et al.* 2008).



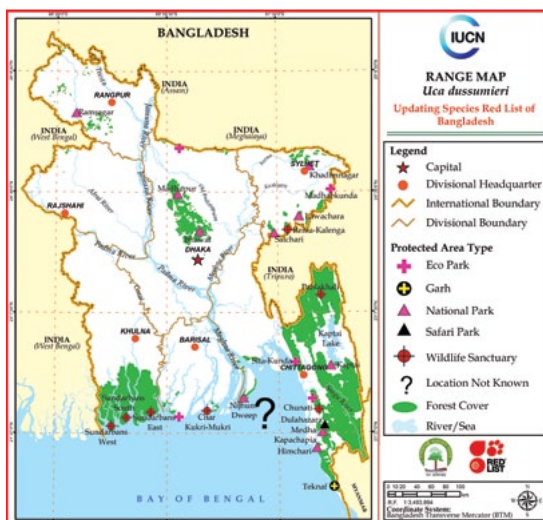
Uca dussumieri

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Bangladesh: Not known

Habitat and Ecology

Uca dussumieri inhabit mostly in the sandy beach of brackish water. The species is detritivore in nature. Chimney construction and courtship activities occurred only for several days close to the time of new moon during June-July (Crane 1975).



Assessor: Mohd. Golam Quader Khan

Uca rosea

Species ID: CR0102

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	OCYPODIDAE

Scientific Name: *Uca rosea* (Tweedie, 1937)

English Name: Rosy Fiddler Crab

Bengali Name: Not known

Synonym/s: *Gelasimus rosea* Tweedie, 1937

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is no information to make a direct or indirect assessment of risk of extinction of *Uca rosea*. Therefore, it is assessed as Data Deficient.

Date Assessed: 17 December 2014

History

Regional Status: *Uca rosea* has not been assessed before in Bangladesh.

Geographic Range

Global: *Uca rosea* is abundant in Western Central Pacific: Malaysia, Singapore and Bay of Bengal countries - Northeast India, Burma and west coast of Malay Peninsula, Sumatra and Borneo (Crane 1975, Ng *et al.* 2008, Yeo *et al.* 2008).

Bangladesh: Not known

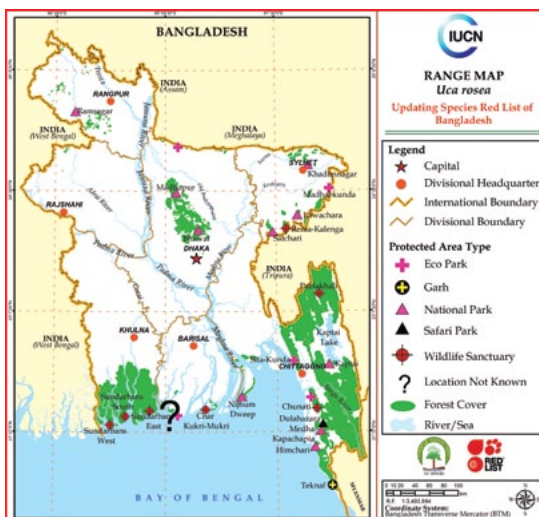


Uca rosea

© Muntasir Akash

Habitat and Ecology

Uca rosea inhabit brackish water and are found mostly in sheltered mud close to mangroves, in salt marshes, and on sandy or muddy beaches. It builds its burrow in muddy stream banks. (Crane 1975). It is a detritivore species, feeds on algae, microbes, fungus, etc.



Assessor: Mohd. Golam Quader Khan

Uca triangularis

Species ID: CR0103

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	OCYPODIDAE

Scientific Name: *Uca triangularis* (A. Milne-Edwards, 1873)

English Name: Triangular Fiddler Crab, Fiddler Crab

Bengali Name: Not known

Synonym/s: *Uca (Paraleptuca) triangularis* A. Milne-Edwards, 1873

Gelasimus triangularis A. Milne-Edwards, 1873

Gelasimus triangularis var. *variabilis* de Man, 1891

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is no published literature on the basis of which the Extent of Occurrence or Area of Occupancy of triangular fiddler crab can be determined inside Bangladesh waters. Therefore, *Uca triangularis* is assessed as Data Deficient.

Date Assessed: 17 December 2014

History

Regional Status: *Uca triangularis* has not been assessed before in Bangladesh.

Geographic Range

Global: *Uca triangularis* is found in Western Central Pacific and Indo-West Pacific: Australia, China, India, Indonesia, Japan, Malaysia, Myanmar, Philippines, Papua New Guinea, Taiwan (Crane 1975, Sakai 1976). It has



Uca triangularis

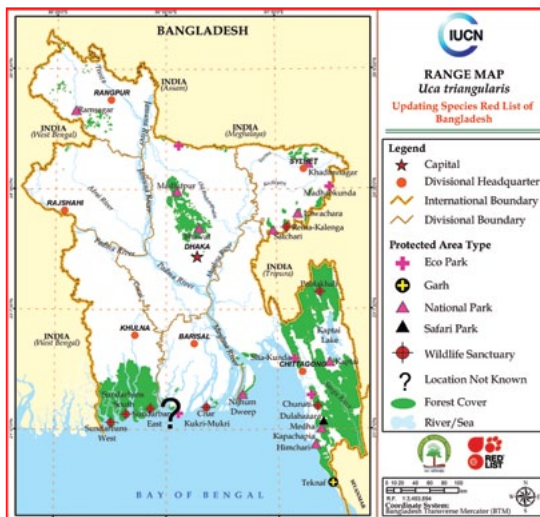
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been recorded in the Sundarbans (Sundarban Biosphere Reserve 2006).

Bangladesh: Not known

Habitat and Ecology

Uca triangularis largely diurnal, active at low tide and gregarious. It feeds by filtering bits of organic matter from the shore surface. It is tropical and very common in muddy shores particularly in mangrove area, where it lives in large, deep burrows. (Crane 1975). It feeds on spartina cordgrass, algae, bacteria, etc.



Assessor: Mst. Kaniz Fatema

Uca urvillei

Species ID: CR0104

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	OCYPODIDAE

Scientific Name: *Uca urvillei* (H. Milne Edwards, 1852)

English Name: d'Urville's Fiddler Crab

Bengali Name: Not known

Synonym/s: *Gelasimus urvillei* H. Milne Edwards, 1852

Uca (Tubuca) urvillei H. Milne Edwards, 1852

Taxonomic Notes: None



Uca urvillei

© IUCN/ Mohammed Noman

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is no information available on the basis of which the Extent of Occurrence or Area of Occupancy of *Uca urvillei* can be determined inside Bangladesh waters. Therefore, *Uca urvillei* is assessed as Data Deficient.

Date Assessed: 17 December 2014

History

Regional Status: *Uca urvillei* has not been assessed before in Bangladesh.

Geographic Range

Global: *Uca urvillei* occurs in Indo-West Pacific: South Africa to Tanzania, India (Western), Pakistan, Saudi Arabia (Red Sea), Thailand. The species is also available in East coast of Africa from Gumbo, Somalia, to Cape Province to Madagascar (Crane 1975, Hartnoll 1975, Ghory and Siddiqui 2006).

Bangladesh: Not known

Habitat and Ecology

Uca urvillei is common in muddy shores and feeds on spartina cordgrass, algae, bacteria, etc. It is largely diurnal, active at low tide and gregarious. It feeds by filtering bits of organic matter from the shore surface.



Assessor: Mst. Kaniz Fatema

Uca vocans

Species ID: CR0105

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	OCYPODIDAE

Scientific Name: *Uca vocans* (Linnaeus, 1758)

English Name: Calling Fiddler Crab, Orange Fiddler Crab

Bengali Name: Not known

Synonym/s: *Cancer vocans* Linnaeus, 1758

Ocypode citharoedicus Say, 1817

Gelasimus marionis Desmarest, 1823

Uca marionis Desmarest, 1823

Gelasimus cultrimanus White, 1847

Gelasimus nitidus Dana, 1851

Taxonomic Notes: Several phenotypically forms of *Uca vocans* have been recorded, with their authors often granting them the taxonomic rank of full species or subspecies. The genus is also known as a Subgenus – *Gelasimus* (Serène 1973).

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is no confirmed record of occurrence of *Uca vocans* in Bangladesh waters. Therefore, this taxon is assessed under the Category of Data Deficient.

Date Assessed: 22 December 2014

History

Regional Status: *Uca vocans* has not been assessed before in Bangladesh.

Geographic Range

Global: *Uca vocans* is distributed in Indo-Pacific region - from Red Sea, Zanzibar and Madagascar to, China, India,



Uca vocans

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Fiji, Hong Kong, Indonesia, Japan, Malaysia, Myanmar, New Guinea, Philippines, Samoa, Sri Lanka, Taiwan, and the central Pacific Ocean. (Crane 1975, Vannini and Valmori 1981, Gillikin and Verheyden 2002).

Bangladesh: Not known

Habitat and Ecology

Uca vocans is commonly observed on natural undisturbed shores, usually on softer, unshaded muddier areas more exposed to wave action along lower tide level. It lives in burrows up to 50 cm deep (Crane 1975). It feeds on detritus (Crane 1975, Gillikin and Verheyden 2002).



Assessor: Mostafa Ali Reza Hossain

Thalamita crenata

Species ID: CR0091

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PORTUNIDAE

Scientific Name: *Thalamita crenata* (Rüppell, 1830)

English Name: Mangrove Swimming Crab

Bengali Name: Not Known

Synonym/s: *Talamita crenata* Rüppell, 1830

Portunus crenatus Milne Edwards H., 1834

Thalamita crenata Milne Edwards H., 1834

Thalamita prymna crenata (Latreille, 1829)

Thalamita ceranata Hashmi, 1963

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: Its Extent of Occurrence is 161.66 km² and Area of Occupancy is 160.03 km² and occurs only in one location of Bangladesh. Based on these very limited records, it is not possible to clearly define the taxon's distribution, habitat requirements or threats associated with this species. Based on the above data, *Thalamita crenata* is considered as Data Deficient.

Date Assessed: 15 March 2015

History

Regional Status: *Thalamita crenata* has not been assessed in Bangladesh.

Geographic Range

Global: *Thalamita crenata* is distributed throughout Eastern Africa and the Western Indian Ocean islands -



Thalamita crenata © 2016 Guido & Philippe Poppe - www.conchology.be

China, Indonesia, Malaysia, Singapore, Australia, Tuamotu, Tonga, French Polynesia, and Hawaii (Carpenter and Niem 1998), Bangladesh (Thompson & Islam (eds.) 2010) and in Pakistan (Ahmad *et al.* 1973). It is abundant in Indo-Pacific, Kenya, Madagascar, Mauritius, Mozambique, New Caledonia, Red Sea, Seychelles, Somalia and South Africa (<http://www.catalogueoflife.org>).

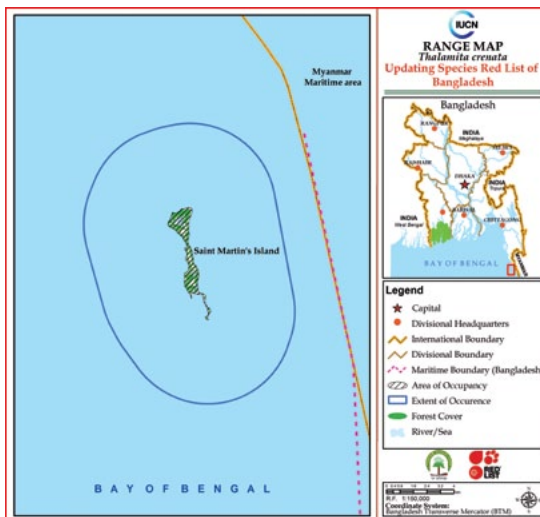
Bangladesh: It is found in five km to the sea area and half a km to the land of Saint Martin's Island (Thompson and Islam 2010).

EOO: 162 km²

AOO: 160 km²

Habitat and Ecology

Not known



Assessor: Selina Sultana

Associate Assessor/s: Mohammed Noman

Coenobita variabilis

Species ID: CR0078

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	COENOBITIDAE

Scientific Name: *Coenobita variabilis* (McCulloch, 1909)

English Name: Australian Land Hermit Crab, Aussie Land Hermit Crab, Terrestrial Hermit Crab, Crazy Crab.

Bengali Name: Not known

Synonym/s: *Coenobita spinosus variabilis* McCulloch, 1909

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data deficient (DD) ver 3.1

Justification: Neither present nor past population size of Australian Hermit Crab, *Coenobita variabilis* is known. There is no information to make a direct or indirect assessment of its risk of extinction based on distribution and/or population status of this taxon inside Bangladesh waters. Therefore, it is considered as Data Deficient.

Date Assessed: 17 October 2014

History

Regional Status: *Coenobita variabilis* has never been assessed before in Bangladesh.

Geographic Range

Global: *Coenobita variabilis* distributed in Indo-Pacific region: Australia (Davie (ed.) 2002).

Bangladesh: Not known



Coenobita variabilis

© Aal Maruf Russell

Habitat and Ecology

Coenobita variabilis occurs between the tides and higher on the shore, often hundreds of meters above high tide level. It lives in the area 100 m (or above) far away from the beach and can usually be found near the mangrove, but sometimes appear in the beach or sandy area. *Coenobita variabilis* is tropical and benthic. It is commonly found on sandy shores behind mangroves, hiding under debris and rocks in northern Australia (Jones and Morgan 1994). This species is nocturnal.



Assessor: Mst. Kaniz Fatema

Pagurus bernhardus

Species ID: CR0079

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PAGURIDAE

Scientific Name: *Pagurus bernhardus* (Fabricius, 1775)
English Name: Common Hermit Crab, Solider Crab
Bengali Name: Not known
Synonym/s: Not known
Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is inadequate information/ data to make direct or indirect assessment of the *Pagurus bernhardus* and its risk to extinction based on its distribution and population status is unknown. Thus, the species is assessed as Data Deficient.

Date Assessed: 01 October 2014

History

Regional Status: *Pagurus bernhardus* has never been assessed before in Bangladesh.

Geographic Range

Global: The species is found in the Arctic waters of Iceland, Svalbard and Russia as far south as southern Portugal but its range does not extend as far as the Mediterranean Sea (Türkyay 2011).

Bangladesh: Not known



Pagurus bernhardus

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Habitat and Ecology

Pagurus bernhardus uses shells of a number of gastropod species for protection (Brian 1967). It is an omnivorous detritivore that opportunistically scavenges for carrion (Laidre and Elwood 2008) and which can also filter feed when necessary (Gerlach *et al.* 1976). It can be found in pools on the upper shore and at the mean tide level down to a depth of approximately 140 m, with smaller specimens generally found in rock pools around the middle shore and lower shore regions with larger individuals at depth. It is nocturnal.



Assessor: Md. Sirajul Islam

Parapagurus nudus

Species ID: CR0080

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	DECAPODA	PAGURIDAE

Scientific Name: *Parapagurus nudus* (A. Milne-Edwards, 1891)

English Name: Not known

Bengali Name: Not known

Synonym/s: *Parapagurus pilosimanus nudus*

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is no information available on the species to determine its threat level in Bangladesh. Therefore, it is assessed as Data Deficient.

Date Assessed: 01 October 2014

History

Regional Status: *Parapagurus nudus* has never been assessed before in Bangladesh.

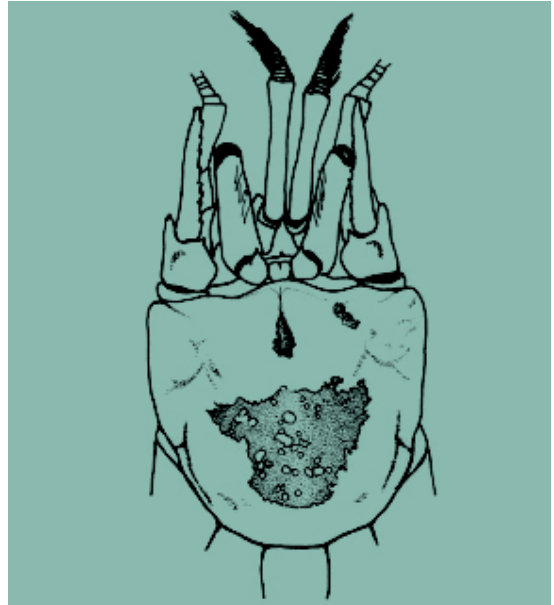
Geographic Range

Global: The species occurs in the Western Atlantic Ocean (Türkyay 2012).

Bangladesh: Not known

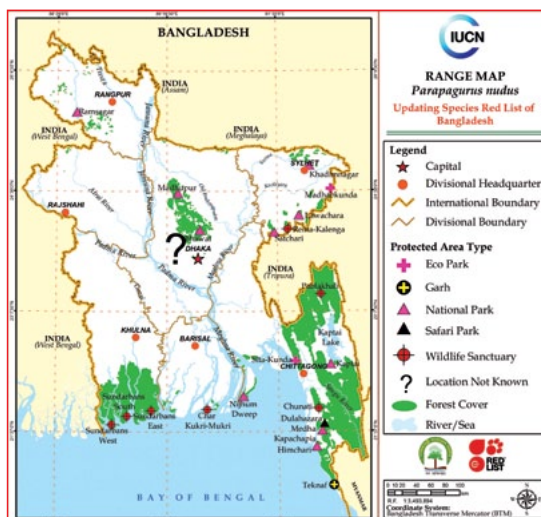
Habitat and Ecology

Not known.



Parapagurus nudus

© Lemaitre R 1986



Assessor: Md. Sirajul Islam

Chthamalus challengerii

Species ID: CR0121

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MAXILLOPODA	SESILLIA	CHTHAMALIDAE

Scientific Name: *Chthamalus challengerii* Hoek, 1883
English Name: Barnacle
Bengali Name: Not known
Synonym/s: *Chthamalus challengerii nipponensis* (Pilsbry, 1916)
Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: Although the genus *Chthamalus* has been recorded in Indian coast, there is no published record of it from Bangladesh coast. Therefore, *Chthamalus challengerii* is assessed as Data Deficient.

Date Assessed: 19 March 2015

History

Regional Status: *Chthamalus challengerii* has never been assessed in Bangladesh.

Geographic Range

Global: *Chthamalus challengerii* is distributed in Indo-west pacific region, Indian Ocean, Bay of Bengal, Red sea, China, Japan and Philippine coast (Daniel 1972, Apolinçrio 1999, Chan 2007).

Bangladesh: Not known

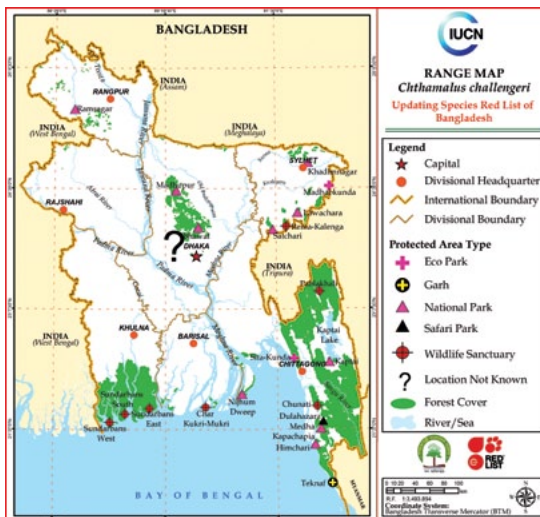


Chthamalus challengerii

© M. Ali Azadi

Habitat and Ecology

Chthamalus challengerii is a filter feeder barnacle in rocky intertidal zone. It is abundant in high beach rocks, covered only during high tide in wave-exposed localities.



Assessor: Md. Enamul Hoq

Tetraclita squamosa

Species ID: CR0122

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MAXILLOPODA	SESILLIA	TETRACLITIDAE

Scientific Name: *Tetraclita squamosa* (Bruguière, 1789)

English Name: Barnacle, Pink Barnacle

Bengali Name: Not known

Synonym/s: *Tetraclita squamosa squamosa* (Bruguière, 1789)

Tetraclita squamosa patellaris Darwin, 1854

Tetraclita squamosa rubescens Darwin, 1854

Tetraclita squamosa milleporosa Pilsbry, 1916

Tetraclita squamosa panamensis Pilsbry, 1916

Tetraclita squamosa rufotincta Pilsbry, 1916

Tetraclita squamosa perfecta Nilsson-Cantell, 1931

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: The data on the present or past population size of *Tetraclita squamosa* is lacking. There is no information to make a direct, or indirect assessment of its risk of extinction. Therefore, the taxon is assessed as Data Deficient.

Date Assessed: 18 March 2015

History

Regional Status: *Tetraclita squamosa* has not been assessed in Bangladesh.

Geographic Range

Global: *Tetraclita squamosa* is distributed in Africa -



Tetraclita squamosa

© M. Ali Azadi

Seychelles, Asia - Andaman, Cambodia, China, Hong Kong, India, Indonesia, Japan, Myanmar, Philippines, Ryukyu Island, Taiwan and Viet Nam, North America - USA, South America- Brazil, Oceania- Australia, Caroline Island and Palau (Chan 2001).

Bangladesh: Not known

Habitat and Ecology

Tetraclita squamosa is a benthic sessile barnacle. This barnacle prefers marine-neritic littoral and sub-littoral rocky bottom zone.



Assessor: Mohd. Golam Quader Khan

Cymothoa indica

Species ID: CR0114

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	ISOPODA	CYMOTHOIDAE

Scientific Name: *Cymothoa indica* Schioedte & Meinert, 1884
English Name: Tongue-Eating Louse
Bengali Name: Not known
Synonym/s: Not known
Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: No published information is available on *Cymothoa indica* from Bangladesh. Therefore, the species is considered as Data Deficient.

Date Assessed: 15 January 2015

History

Regional Status: *Cymothoa indica* has never been assessed before in Bangladesh or at global level.

Geographic Range

Global: *Cymothoa indica* is distributed in Eastern Indian Ocean -Egypt, India, Lebanon, Thailand and Red Sea (Rajkumar *et al.* 2005, Trilles and Bariche, 2006, Ravi and Rajkumar 2007, El-Shahawy and Desouky 2010, Al-Zubaidy and Mhaisen 2014).

Bangladesh: Not known



Cymothoa indica

© Mostafa A R Hossain

Habitat and Ecology

Cymothoa indica is an obligatory fish parasite infesting many fishes as host and cause substantial damages on aquaculture as well as wild fishery. It is protandrous hermaphrodites and bloodsuckers. It is a tropical brackish water isopod, lives on the skin, gill filaments or in the mouth of fishes.



Assessor: Mostafa Ali Reza Hossain

Probopyrus bengalensis

Species ID: CR0115

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MALACOSTRACA	ISOPODA	BOPYRIDAE

Scientific Name: *Probopyrus bengalensis* (Chopra, 1923)

English Name: Crustacean Parasites

Bengali Name: Not known

Synonym/s: *Palaegyge bengalensis* (Chopra, 1923)

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is no published information available on the species in Bangladesh. Therefore, it is assessed as Data Deficient.

Date Assessed: 22 January 2015

History

Regional Status: *Probopyrus bengalensis* was not assessed in Bangladesh.

Geographic Range

Global: *Probopyrus bengalensis* is distributed in India and Thailand as parasites of marine prawn/shrimp (Markham 1985, Schotte *et al.* 1995, Boyko *et al.* 2008).

Bangladesh: Not known

Habitat and Ecology

Probopyrus bengalensis is a marine water isopod parasite



Probopyrus bengalensis

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on shrimp/prawn. It is recorded from the host *Palaemon malcolmsoni* and from the closely allied *Palaemon carcinus* (Devi 1982).



Assessor: Md. Enamul Hoq

Eubosmina (Bosmina) coregoni

Species ID: CR0125

DATA
DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	BRANCHIOPODA	DIPLOSTRACA	BOSMOINIDAE

Scientific Name: *Eubosmina (Bosmina) coregoni* (Baird, 1857)

English Name: Water Fleas

Bengali Name: Panir Poka

Synonym/s: *Bosmina (Eubosmina) longispina* Leydig, 1860
Bosmina obtusirostris G.O. Sars, 1861
Bosmina (Eubosmina) coregoni maritima P.E.Müller, 1867
Bosmina maritima P.E. Muller, 1868
Bosmina (Eubosmina) longispina reflexa Seligo, 1900

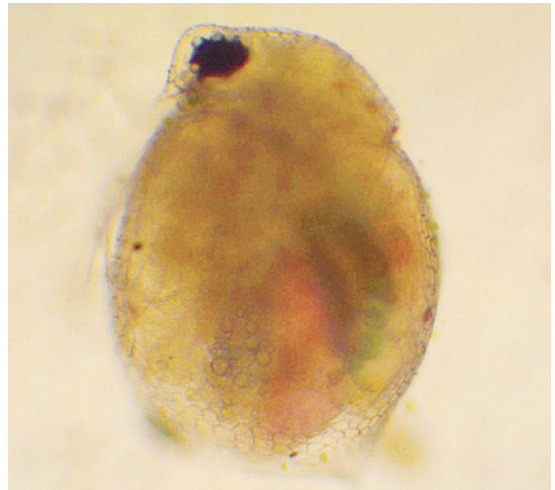
Taxonomic Notes: In Bangladesh most of the taxonomic study of zooplankton including this species (*Bosmina coregoni*) have been done only up to the generic level (*Bosmina* spp.). More study up to species level is needed to confirm the wide presence of *Eubosmina (Bosmina) coregoni* in different freshwater bodies in Bangladesh.

Assessment Information

Red List Category & Criteria: Data deficient (DD) ver 3.1

Justification: Information on the freshwater cladoceran, *Eubosmina coregoni* upto species level is so far known from very small locations (Islam *et al.*, 2010, Bhouyain and 1992). On the basis of Extent of Occurrence, Area of Occupancy and number of locations it is difficult to justify whether this species should be placed under the Criteria of Critically Endangered, Endangered or Vulnerable. In the absence of required data *Eubosmina (Bosmina) coregoni* is considered as Data Deficient.

Date Assessed: 20 March 2015



Eubosmina (Bosmina) coregoni

© Md. Moniruzzaman

History

Regional Status: *Eubosmina (Bosmina) coregoni* has not been assessed in Bangladesh.

Geographic Range

Global: *Eubosmina (Bosmina) coregoni* is found in Asia, Europe, Africa and America (Balcer *et al.* 1984, Boxshall 2001).

Bangladesh: Species level identification of *Eubosmina (Bosmina) coregoni* was recorded from Beel Koshba, Northern Bangladesh (Islam *et al.*, 2010), Freshwater bodies without specific locations (Bhouyain and Asmat, 1992). Genus level identification was recorded from different water bodies of various areas and locations like beels, ponds, rivers, reservoirs (Afzal *et al.* 2013, Islam and Chowdhury 2013, Mozumdar *et al.* 2012, Islam 2011, Rahman 2011, Ferdous 2009, Azadi 1996, Patra and Azadi 1987).

EOO: 314 km²

AOO: 135 km²

Habitat and Ecology

Eubosmina (Bosmina) coregoni is a freshwater algae feeder. It occurs in non-polluted to polluted freshwater bodies.

Assessor: Mohammad Ali Azadi



Macrothrix laticornis

Species ID: CR0134

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	BRANCHIOPODA	DIPLOSTRACA	MACROTHRICIDAE

Scientific Name: *Macrothrix laticornis* Jurine, 1820

English Name: Not known

Bengali Name: Not known

Synonym/s: Not known

Taxonomic Notes : *Macrothrix laticornis* was redescribed (Silva-Briano *et al.* 1999) on the basis of typical dorsal serration of the valve and ridge of the valve as well as reticulation on valve and head shield, and compared with populations from central North America (Mexico) and from south-east Asia (Vietnam). This species was found to be closely related with two species, viz., *M. sierrafriatensis* (Mexico) and *M. vietnamensis* (Viet Nam).

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: The data on the present or past population size and trend of *Macrothrix laticornis* is missing. There is not enough information to make a direct or indirect assessment of its risk of extinction based on distribution and/or population status of this species inside Bangladesh territory. Therefore, the species is assessed as Data Deficient.

Date Assessed: 19 March 2015

History

Regional Status: *Macrothrix laticornis* has never been assessed before in Bangladesh.



Macrothrix laticornis

© Md. Sadiqul Islam

Geographic Range

Global: *Macrothrix laticornis* is distributed in Europe, Mexico, Viet Nam (Silva-Briano *et al.* 1999).

Bangladesh: *Macrothrix laticornis* has been found in Koshba beel of Naogaon in Bangladesh (Islam *et al.* 2010).

EOO: 314 km²

AOO: 135 km²

Habitat and Ecology

Macrothrix laticornis is found in bottom sediment.



Assessor: Mohd. Golam Quader Khan

Moina brachiata

Species ID: CR0137

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	BRANCHIOPODA	DIPLOSTRACA	MOINIDAE

Scientific Name: *Moina brachiata* (Jurine, 1820)

English Name: Water Flea

Bengali Name: Not known

Synonym/s: *Monoculus brachiatus* Jurine, 1820

Moina liljeborgi Schödler 1877

Macrothrix magnantennula Cosmovici 1900

Moina caucasica Schikleev 1930

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is no information on *Moina brachiata* population or its distribution inside Bangladesh. As its species level has not yet been determined from the locations in Bangladesh it is considered as Data Deficient.

Date Assessed: 15 March 2015

History

Regional Status: *Moina brachiata* has not been assessed before in Bangladesh.

Geographic Range

Global: *Moina brachiata* is commonest among the *Moina* species occurring globally. It is a widely distributed taxon throughout most part of the World (Goulden 1968, Forro 1997, Nédli *et al.* 2014).

Bangladesh: Species level of *Moina brachiata* has only



Moina brachiata

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been reported from Gumti Floodplain, Comilla (Kabir *et al.* 1996) and Sona Dighi, Rajshahi (Naz and Najia 2008) and up to Genus level is reported from Khulna University campus (2003-04), Jahan-E-Nizam Bahumukhi Krishi Khamar, Manikgonj (2003-2004), Rajshahi University campus (2008), Ghkukshi Beel, Naogaon (2008-09), Trimohini Beel, Rajshahi (2010-11) and Bangladesh Agricultural University campus, Mymensingh (2011).

EOO: 7,555 km²

AOO: 1,423 km²

Habitat and Ecology

Moina brachiata occurs primarily or exclusively in temporary ponds and pools, including saline and alkaline waters. It also inhabits various types of astatic waters, including sodic ones. Mostly *M. brachiata* is the only species of *Moina* in these water bodies, but in a number of small, temporary pools. It is a cyclical parthenogen; possess a high degree of physiological adaptation to temporary environments.



Assessor: Mostafa Ali Reza Hossain

Moina macrocopa

Species ID: CR0138

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	BRANCHIOPODA	CLADOCERA	MOINIDAE

Scientific Name: *Moina macrocopa* Straus, 1820

English Name: Water Flea

Bengali Name: Panir Poka, makhon Poka

Synonym/s: *Moina azorica* Moniez, 1888

Moina banffyi Daday, 1883

Moina casani Arévalo 1920

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: The freshwater cladoceran *Moina macrocopa* although widely distributed globally but in Bangladesh so far, studies were found up to generic level (*Moina* sp.), i.e. from four ponds of Sylhet (Miah *et al.* 2013), Beels Koshba, Naogaon district (Islam *et al.* 2010), Trimohni Beel, Rajshahi (Islam and Chowdhury 2013), Guukshi Beel, Naogaon district (Afzal *et al.* 2013); Rivers Halda, Karnaphuli, Chittagong (Islam 2011), and Rivers Chandkhali, Shikalbaha, Chittagong (Rahman 2011). Therefore, it is assessed as Data Deficient.

Date Assessed: 20 March 2015

History

Regional Status: *Moina macrocopa* was not assessed in Bangladesh.

Geographic Range

Global: *Moina macrocopa* is found globally in: Asia



Moina macrocopa

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(Bangladesh, India), Europe, Africa, North and South America. (Norman *et al.* 1979, Wong 1992, Martínez and Gutiérrez 1991, Petrussek 2002, Elmoor-Loureiro *et al.* 2010, Vanjare *et al.* 2010, Loh *et al.* 2012, Vignatti *et al.* 2013).

Bangladesh: Generic level of *Moina* sp. is reported from four freshwater ponds at Shahjalal University of Science and Technology Campus, Sylhet (Miah *et al.* 2013); Beels Koshba, Naogaon district (Islam *et al.* 2010), Trimohni Beel, Rajshahi (Islam and Chowdhury 2013), Guukshi Beel, Naogaon District (Afzal *et al.* 2013); Rivers Halda, Karnaphuli (Islam 2011) and River Chandkhali, Shikalbaha (Rahman 2011).

EOO: 55,743 km²

AOO: 456 km²

Habitat and Ecology

Moina macrocopa occurs in surface to shallow bottom of non-polluted to polluted freshwaters. It feeds on phytoplankton. (Nandini and Sarma 2000; Sarma and Nandini 2001).

Assessor: Mohammad Ali Azadi



Moina reticulata

Species ID: CR0139

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	BRANCHIOPODA	DIPLOSTRACA	MOINIDAE

Scientific Name: *Moina reticulata* (Daday, 1905)

English Name: Water Flea

Bengali Name: Not known

Synonym/s: Not known

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: *Moina* sp. was recorded in Bangladesh during 2003-11 from six locations but no study identified the Genus *Moina* up to species level (*Moina reticulata*). Therefore, *M. reticulata* is assessed as Data Deficient.

Date Assessed: 15 March 2015

History

Regional Status: *Moina reticulata* has not been assessed in Bangladesh.

Geographic Range

Global: *Moina reticulata* is recorded from South America Asia and Africa (Paggi 1973, Lamoot and Dumont 1974, Gaviria and Aranguren 2007, Zoppi De Roa and Lopez 2008, Pascual *et al.* 2014).

Bangladesh: *Moina reticulata* was not identified up to species level in Bangladesh.

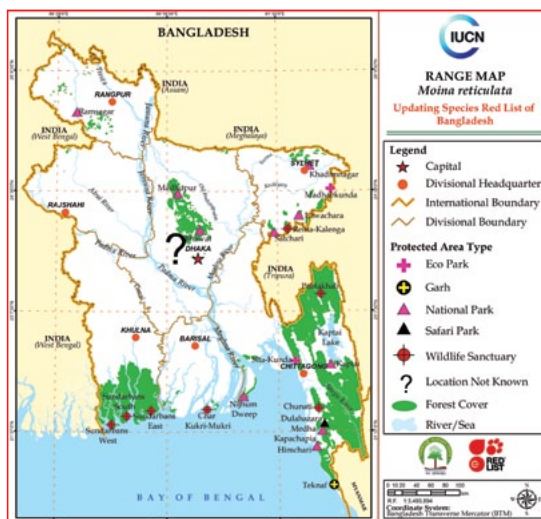
Habitat and Ecology

Not known



Moina reticulata

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Assessor: Mostafa Ali Reza Hossain

Notodiaptomus transitans

Species ID: CR0132

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MAXILLOPODA	CALANOIDA	DIAPTOMIDAE

Scientific Name: *Notodiaptomus transitans* (Kiefer, 1929)

English Name: Not known

Bengali Name: Not known

Synonym/s: *Skistodiaptomus pygmaeus* (Pearse, 1906)

Diaptomus mildredae Brehm, 1960

Diaptomus pygmaeus Brehm, 1956

Diaptomus transitans Kiefer, 1929

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: So far, it is reported from only the Sona Dighi in Rajshahi District (Naz and Najia 2008) and described by a junior synonym *Diaptomus pygmaeus* and there is no further information to make an assessment of its risk of extinction. Therefore, the species is assessed as Data Deficient.

Date Assessed: 20 March 2015

History

Regional Status: *Notodiaptomus transitans* has not been assessed before in Bangladesh.

Geographic Range

Global: Atlantic Maritime Ecozone, North America and Canada (Brooks and Dodson 1965, Hill and Blaney 2009).



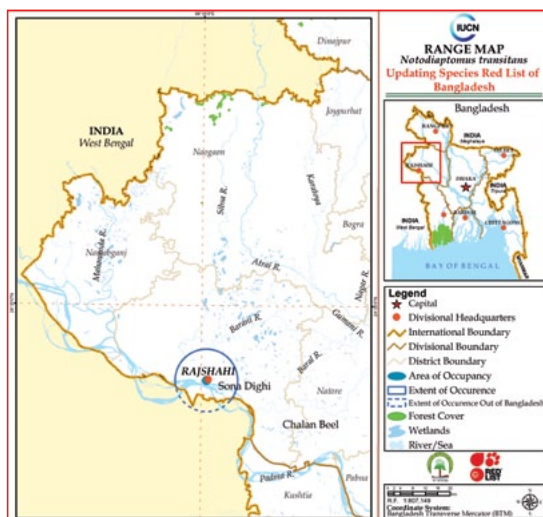
Notodiaptomus transitans

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Bangladesh: The species is recorded only from a 3,633 m² reservoir - Sona Dighi in the Rajshahi City.

Habitat and Ecology

Notodiaptomus transitans is a copepod of larger freshwater lakes and still waters.



Assessor: Md. Ahsanul Islam

Associate Assessor/s: Selina Sultana and Mohammed Noman

Cyclops bicolor

Species ID: CR0127

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MAXILLOPODA	CYCLOPOIDA	CYCLOPIDAE

Scientific Name: *Cyclops bicolor* (Sars, 1863)

English Name: Zooplankton

Bengali Name: Not known

Synonym/s: *Microcyclops bicolor* (Sars G.O., 1863)
Microcyclops bicolor bicolor (Sars G.O., 1863)
Cryptocyclops bicolor (Sars G.O., 1863)
Cyclops ignaeus Poggenpol, 1874
Cyclops brevisetosus Daday, 1885
Cyclops tenuicaudis Daday, 1885
Cryptocyclops bicolor linjanticus (Kiefer, 1928)

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data deficient (DD) ver 3.1

Justification: It has so far been reported only from the Sona Dighi in Rajshahi District (Naz and Najia, 2008). There is no further data on it that can aid in assessment of the risk of extinction of *Cyclops bicolor* inside Bangladesh waters. Therefore, *Cyclops bicolor* is assessed as Data Deficient.

Date Assessed: 16 March 2015

History

Regional Status: *Cyclops bicolor* has never been assessed in Bangladesh.

Geographic Range

Global: The Cyclop, *Cyclops bicolor* is circumglobal and



Cyclops bicolor

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widely distributed, except Australia (Fernando and Ponyi 1981, Lim and Fernando 1985, Naz and Najia 2008).

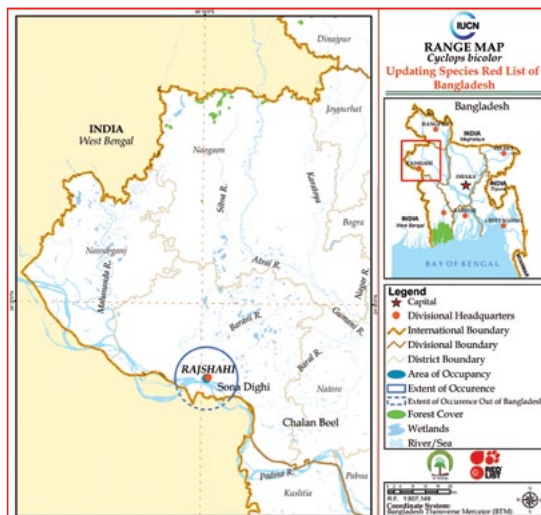
Bangladesh: *Cyclops bicolor* is reported from Sona Dighi, Rajshahi, Bangladesh (Naz and Najia 2008).

EOO: 0.005 km²

AOO: 0.005 km²

Habitat and Ecology

Cyclops bicolor feeds on large quantities of bacteria and phytoplankton and are the main prey items of larval and juvenile fishes that link pelagic food webs. This zooplankton lives in pond in Bangladesh.



Assessor: Mst. Kaniz Fatema

Macrocyclus distinctus

Species ID: CR0133

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MAXILLOPODA	CYCLOPOIDA	CYCLOPIDAE

Scientific Name: *Macrocyclus distinctus* Richard, 1887

English Name: Not known

Bengali Name: Not known

Synonym/s: *Cyclops distinctus* (Richard, 1887)

Taxonomic Notes: Morphologically *M. distinctus* is very close to *M. fuscus* and often confused with one another. Schmeil (1892) considered *M. distinctus* to be a hybrid between *M. albidus* and *M. fuscus*, though later (1998) it was stated that it was an independent species.

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: The data on the present or past population size and trend, of *Macrocyclus distinctus* is lacking. There is no information to make a direct or indirect assessment of its risk of extinction based on distribution and/or population status of *Macrocyclus distinctus* inside Bangladesh waters. Therefore, the taxon falls in the Category Data Deficient.

Date Assessed: 19 March 2015

History

Regional Status: *Macrocyclus distinctus* has not been assessed before in Bangladesh.

Geographic Range

Global: *Macrocyclus distinctus* is occurs in Asia, Australia, North America and Reservoirs of Europe, (Lindberg 1949, Harding and Smith 1960).



Macrocyclus distinctus

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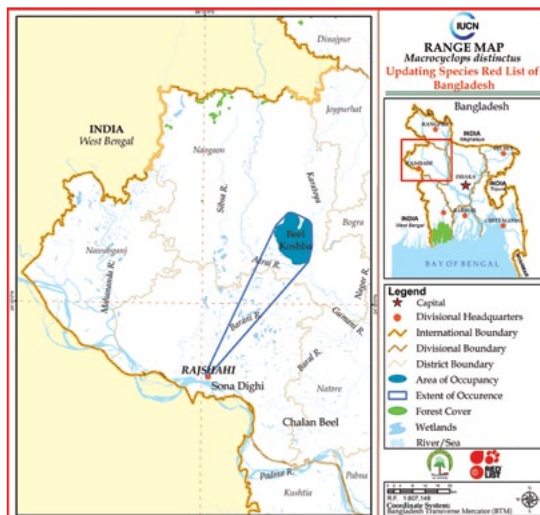
Bangladesh: *Macrocyclus distinctus* has recently been found in Koshba beel of Naogaon (Islam *et al.* 2010) and also recorded in Sona dighi in Rajshahi district (Naz and Najia 2008).

EOO: 510 km²

AOO: 135 km²

Habitat and Ecology

Macrocyclus distinctus lives in littoral and demersal strata of freshwater reservoirs.



Assessor: Mohd. Golam Quader Khan

Mesocyclops dybowskii

Species ID: CR0135

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MAXILLOPODA	CYCLOPOIDA	CYCLOPIDAE

Scientific Name: *Mesocyclops dybowskii* (Lande, 1890)

English Name: Not known

Bengali Name: Not known

Synonym/s: *Thermocyclops dybowskii* (Lande, 1890).

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: Though during 2008-10, *Mesocyclops dybowskii* was recorded from two locations and identified upto species level, there is no data on its present or past population size and trend. There is not enough information to make a direct or indirect assessment of its risk of extinction based on distribution and/or population status of this species inside Bangladesh territory. Therefore, *Mesocyclops dybowskii* is assessed as Data Deficient.

Date Assessed: 15 March 2015

History

Regional Status: This taxon has not been assessed before in Bangladesh.

Geographic Range

Global: *Mesocyclops dybowskii* is widespread globally but relatively rare cyclopoid copepod. This species is found in freshwater of Asia, Europe and America (Ulomskii 1965, Croker 1973, Reid 1989).



Mesocyclops dybowskii

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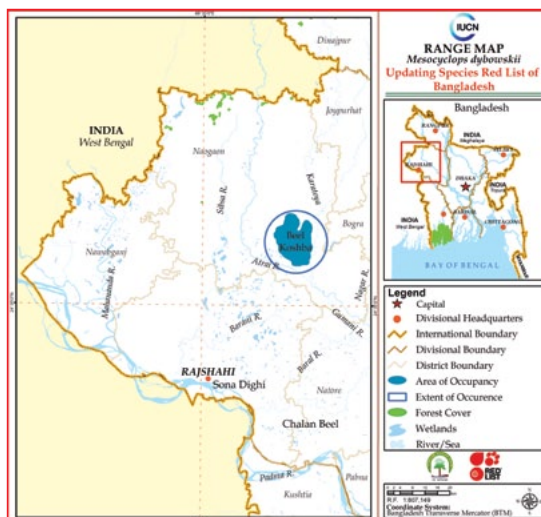
Bangladesh: *Mesocyclops dybowskii* species level identification was done from Beel Koshba, Naogaon (Islam *et al.* 2010).

EOO: 314 km²

AOO: 135 km²

Habitat and Ecology

Mesocyclops dybowskii occurs in freshwater. Its population never reaches significant numbers and in low temperature completely disappears from the water-bodies, leaving quiescent eggs for reproduction of the next generation. *Mesocyclops dybowskii* lives in shallow calm littoral water bodies with dense, mildly overgrown submerged macrophytes (ponds, the littoral lakes).



Assessor: Mostafa Ali Reza Hossain

Paracyclops fimbriatus

Species ID: CR0140

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MAXILLOPODA	CYCLOPOIDA	CYCLOPIDAE

Scientific Name: *Paracyclops fimbriatus* (Fischer, 1853)
English Name: Zooplankton
Bengali Name: Not known
Synonym/s: *Paracyclops fimbriatus poppei* (Rehberg, 1880)
Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data Deficient (DD) ver 3.1

Justification: There is no enough information to make a direct, or indirect assessment of its risk of extinction based on its distribution and/or population status of *Paracyclops fimbriatus* inside Bangladesh waters, although only one reference is available (Naz and Najja, 2008). Based on above information, *P. fimbriatus* is assessed under the category Data Deficient.

Date Assessed: 19 March 2015

History

Regional Status: *Paracyclops fimbriatus* has not been assessed in Bangladesh.

Geographic Range

Global: *Paracyclops fimbriatus* is reported from a wide range of freshwater habitat and indicate a cosmopolitan distribution (Dussart and Defaye 1985, Kawabata and Defaye 1994, Karaytug and Boxshall 1996, Laurentiis et al. 1999, Azémar 2002, Gordon 2010).



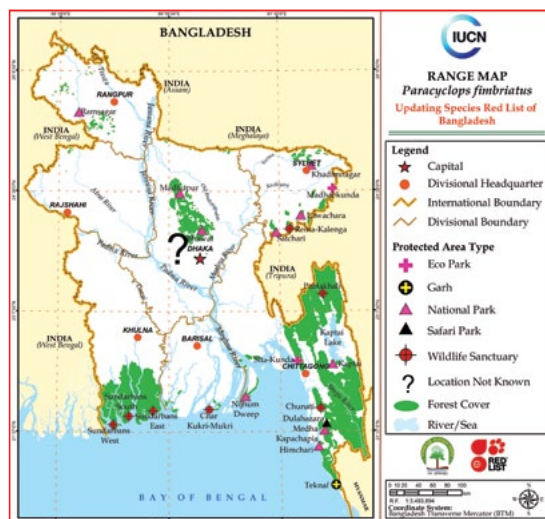
Paracyclops fimbriatus

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Bangladesh: Not known

Habitat and Ecology

Paracyclops fimbriatus occurs from sea level to alpine zone. This cyclopoid is recorded from subterranean water and saline water of 31 ppt salinity.



Assessor: Md. Enamul Hoq

Thermocyclops inversus

Species ID: CR0136

DATA DEFICIENT
<DD>

Taxonomy

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	MAXILLOPODA	CYCLOPOIDA	CYCLOPIDAE

Scientific Name: *Thermocyclops inversus* Kiefer, 1936

English Name: Zooplankton

Bengali Name: Not known

Synonym/s: *Mesocyclops inversus* Kiefer, 1936

Taxonomic Notes: None

Assessment Information

Red List Category & Criteria: Data deficient (DD) ver 3.1

Justification: So far, it is reported from only the Sona Dighi in Rajshahi District (Naz and Najia, 2008) and there is no further information to make an assessment of its risk of extinction. So, the species is assessed as Data Deficient.

Date Assessed: 16 March 2015

History

Regional Status: *Thermocyclops inversus* has not been assessed before in Bangladesh.

Geographic Range

Global: *Thermocyclops inversus* is a circumglobal and widely distributed species (Reid 1989, Silva and Matsumua-Tundisi 2005, Bezerra-Neto and Pinto-Coelho 2007).

Bangladesh: *Thermocyclops inversus* is reported only from the Sona Dighi in Rajshahi, Bangladesh.



Thermocyclops inversus

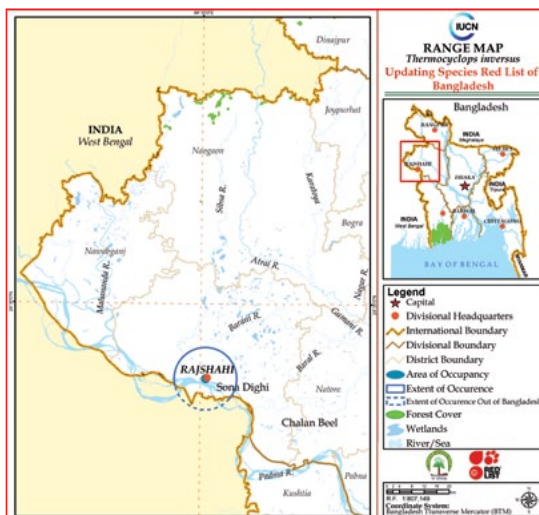
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EEO: 0.005 km²

AOO: 0.005 km²

Habitat and Ecology

Thermocyclops inversus is a non-marine freshwater copepod. It occurs in water depth of 20m. This is a potential bio indicator species and an indicator of oligotrophic/mesotrophic water bodies. It may prefer mildly carbonate waters and inhabits large and small reservoirs, natural lakes, ponds, wells and caves.

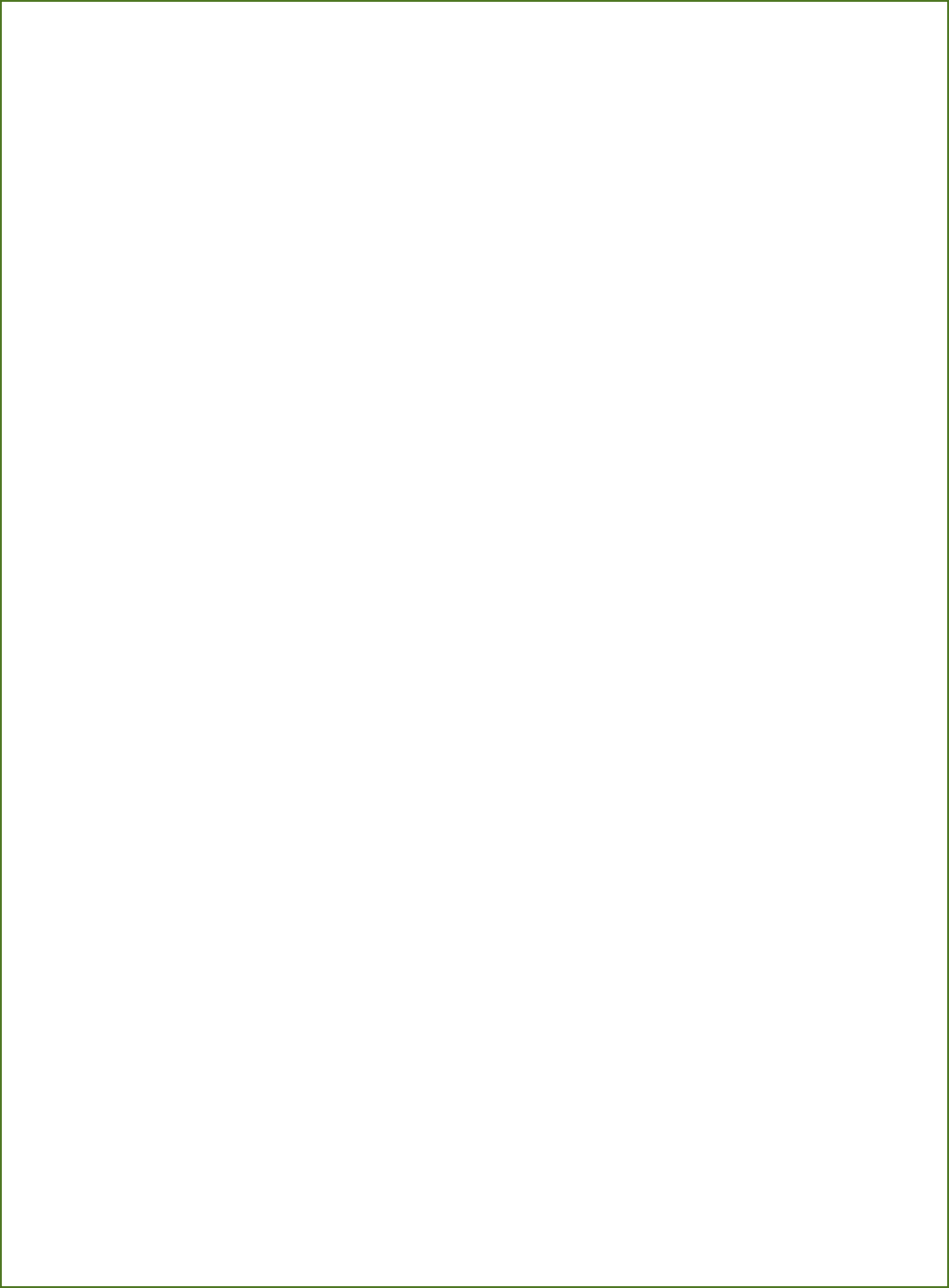


Assessor: Mst. Kaniz Fatema



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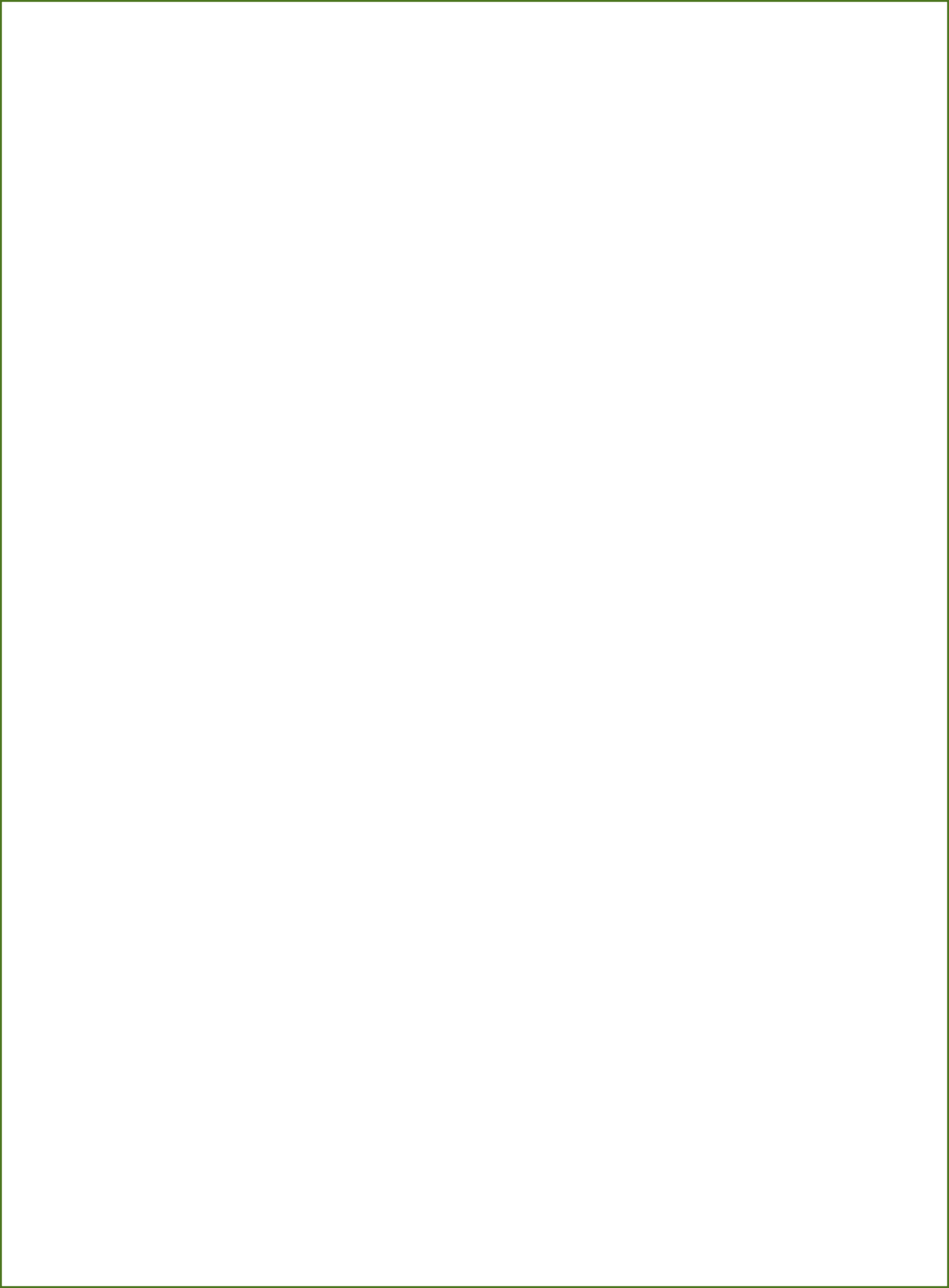
Crustacean Red List Expedition Team at Sonar Char, Bhola

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APPENDICES





Appendix-i

Status of Crustaceans in Bangladesh (arranged in taxonomic order)

Status Code: CR- Critically Endangered, EN- Endangered, VU- Vulnerable, NT- Near Threatened, LC- Least Concern, DD- Data Deficient, NE- Not Evaluated.

Sl. No.	Class	Order	Family	Scientific Name	English Name	Status in Bangladesh	Status Global	Species ID	Page No.
1	Malacostraca	Decapoda	Palaemonidae	<i>Macrobrachium malcolmsonii</i>	Moonsoon River Prawn	LC	LC	CR0001	100
2	Malacostraca	Decapoda	Palaemonidae	<i>Macrobrachium villosimanus</i>	Dimua River prawn	LC	LC	CR0002	104
3	Malacostraca	Decapoda	Palaemonidae	<i>Macrobrachium dolichodactylus</i>	Ghoda River Prawn	LC	NE	CR0003	98
4	Malacostraca	Decapoda	Palaemonidae	<i>Macrobrachium dayanus</i>	Kaira River Prawn	LC	NE	CR0004	97
5	Malacostraca	Decapoda	Palaemonidae	<i>Macrobrachium birmanicum</i>	Birma River Prawn	LC	LC	CR0005	96
6	Malacostraca	Decapoda	Palaemonidae	<i>Macrobrachium mirabile</i>	Short-leg River Prawn	LC	NE	CR0006	101
7	Malacostraca	Decapoda	Portunidae	<i>Charybdis feriata</i>	Crucifix crab, Coral crab	VU	NE	CR0007	81
8	Malacostraca	Decapoda	Portunidae	<i>Charybdis hellerii</i>	Pacific Swimming Crab	LC	NE	CR0008	127
9	Malacostraca	Decapoda	Portunidae	<i>Charybdis natator</i>	Ridged Swimming Crab	VU	NE	CR0009	82
10	Malacostraca	Decapoda	Portunidae	<i>Charybdis variegata</i>	Swimming Crab	VU	NE	CR0010	83
11	Malacostraca	Decapoda	Portunidae	<i>Portunus pelagicus</i>	Blue swimmer, Flower crab	LC	NE	CR0011	128
12	Malacostraca	Decapoda	Portunidae	<i>Portunus sanguinolentus</i>	Three Spot Swimming Crab	VU	NE	CR0012	84
13	Malacostraca	Decapoda	Penaëidae	<i>Penaeus monodon</i>	Giant Tiger Shrimp	LC	NE	CR0013	115
14	Malacostraca	Decapoda	Penaëidae	<i>Penaeus indicus</i>	Indian White Shrimp, Indian Prawn	LC	NE	CR0014	113
15	Malacostraca	Decapoda	Penaëidae	<i>Penaeus japonicus</i>	Tiger Shrimp	LC	NE	CR0015	114
16	Malacostraca	Decapoda	Palaemonidae	<i>Macrobrachium rosenbergii</i>	Giant Freshwater Shrimp, Giant River Prawn	LC	LC	CR0016	102
17	Malacostraca	Decapoda	Palaemonidae	<i>Macrobrachium rude</i>	Hairy River Prawn	LC	LC	CR0017	103
18	Malacostraca	Decapoda	Penaëidae	<i>Fenneropenaeus merguensis</i>	Banana prawn, White shrimp	LC	NE	CR0018	106
19	Malacostraca	Decapoda	Solenoceridae	<i>Solenocera indicus</i>	Coastal Mud Shrimp, Red Prawn	LC	NE	CR0019	121
20	Malacostraca	Decapoda	Solenoceridae	<i>Solenocera hextii</i>	Deep Sea Mud Shrimp	LC	NE	CR0020	120
21	Malacostraca	Decapoda	Palaemonidae	<i>Macrobrachium lar</i>	Monkey river prawn	DD	LC	CR0021	158
22	Malacostraca	Decapoda	Palaemonidae	<i>Leptocarpus potamiscus</i>	Bombay Prawn, Bouquet Bombay Prawn	LC	LC	CR0022	95
23	Malacostraca	Decapoda	Penaëidae	<i>Metapenaeus affinis</i>	Jinga Shrimp	DD	NE	CR0023	167
24	Malacostraca	Decapoda	Penaëidae	<i>Metapenaeus brevicornis</i>	Yellow shrimp	LC	NE	CR0024	108
25	Malacostraca	Decapoda	Penaëidae	<i>Metapenaeus dobsoni</i>	Kadal shrimp	DD	NE	CR0025	168
26	Malacostraca	Decapoda	Penaëidae	<i>Metapenaeus ensis</i>	Greasyback Shrimp	DD	NE	CR0026	169

Sl. No.	Class	Order	Family	Scientific Name	English Name	Status in Bangladesh	Status Global	Species ID	Page No.
27	Malacostraca	Decapoda	Penaeidae	<i>Metapenaeus lysianassa</i>	Bird Shrimp	LC	NE	CR0027	109
28	Malacostraca	Decapoda	Penaeidae	<i>Metapenaeus monoceros</i>	Brown Shrimp	LC	NE	CR0028	110
29	Malacostraca	Decapoda	Penaeidae	<i>Metapenaeus tenuipes</i>	Stork Shrimp	DD	NE	CR0029	170
30	Malacostraca	Decapoda	Penaeidae	<i>Parapenaeopsis coromandelica</i>	Coromoandel Shrimp	DD	NE	CR0030	171
31	Malacostraca	Decapoda	Penaeidae	<i>Parapenaeopsis hardwickii</i>	Spear Shrimp, Hard Spear Shrimp	DD	NE	CR0031	172
32	Malacostraca	Decapoda	Penaeidae	<i>Parapenaeopsis maxillipedo</i>	Torpedo Shrimp	DD	NE	CR0032	173
33	Malacostraca	Decapoda	Penaeidae	<i>Parapenaeopsis sculptilis</i>	Rainbow Shrimp, Coral Shrimp	LC	NE	CR0033	111
34	Malacostraca	Decapoda	Penaeidae	<i>Parapenaeopsis stylifera</i>	Kiddi shrimp	LC	NE	CR0034	112
35	Malacostraca	Decapoda	Penaeidae	<i>Parapenaeopsis uncta</i>	Uncta Shrimp, Pink Shrimp	DD	NE	CR0035	174
36	Malacostraca	Decapoda	Penaeidae	<i>Penaeus canaliculatus</i>	Striped Prawn, Witch Prawn	DD	NE	CR0036	175
37	Malacostraca	Decapoda	Penaeidae	<i>Melicertus latisulcatus</i>	Western King Prawn	LC	NE	CR0037	107
38	Malacostraca	Decapoda	Penaeidae	<i>Fenneropenaeus penicillatus</i>	Red-tailed Prawn	DD	NE	CR0038	164
39	Malacostraca	Decapoda	Penaeidae	<i>Penaeus semisulcatus</i>	Green Tiger Shrimp	LC	NE	CR0039	116
40	Malacostraca	Decapoda	Penaeidae	<i>Metapenaeopsis andamanensis</i>	Rice Velvet Shrimp	DD	NE	CR0040	165
41	Malacostraca	Decapoda	Penaeidae	<i>Trachysalambria curvirostris</i>	Southern Rough Shrimp	DD	NE	CR0042	176
42	Malacostraca	Decapoda	Penaeidae	<i>Metapenaeopsis stridulans</i>	Fiddler Shrimp	DD	NE	CR0043	166
43	Malacostraca	Decapoda	Soleniceridae	<i>Solenocera crassicornis</i>	Coastal Mud Shrimp, Red Prawn	LC	NE	CR0044	119
44	Malacostraca	Decapoda	Soleniceridae	<i>Solenocera melantho</i>	Razor mud shrimp	DD	NE	CR0045	181
45	Malacostraca	Decapoda	Sergestidae	<i>Acetes chinensis</i>	Northern Mauxia Shrimp, Penicillated Shrimp	DD	NE	CR0046	177
46	Malacostraca	Decapoda	Sergestidae	<i>Acetes erythraeus</i>	Tsivakhini Paste Shrimp	DD	NE	CR0047	178
47	Malacostraca	Decapoda	Sergestidae	<i>Acetes indicus</i>	Jawla Paste Shrimp	LC	NE	CR0048	117
48	Malacostraca	Decapoda	Sergestidae	<i>Acetes intermedius</i>	Taiwan Mauxia Shrimp	DD	NE	CR0049	179
49	Malacostraca	Decapoda	Sergestidae	<i>Acetes japonicus</i>	Akiami Paste Shrimp	LC	NE	CR0050	118
50	Malacostraca	Decapoda	Sergestidae	<i>Acetes vulgaris</i>	Jembret Shrimp, Rebon Shrimp	DD	NE	CR0051	180
51	Malacostraca	Decapoda	Atyidae	<i>Caridina gracilirostris</i>	Needle Nose Caridina, Red Nose Shrimp, Rhino Shrimp	DD	LC	CR0052	147
52	Malacostraca	Decapoda	Atyidae	<i>Caridina propinqua</i>	Hairy-Handed Prawn, Bengal Caridina	DD	LC	CR0053	148

Sl. No.	Class	Order	Family	Scientific Name	English Name	Status in Bangladesh	Status Global	Species ID	Page No.
53	Malacostraca	Decapoda	Atyidae	<i>Caridina weberi</i>	Pignose Caridina	DD	LC	CR0054	149
54	Malacostraca	Decapoda	Atyidae	<i>Atyopsis spinipes</i>	Soldier Brush Shrimp	DD	LC	CR0055	146
55	Malacostraca	Decapoda	Palaemonidae	<i>Macrobrachium equidens</i>	Rough river prawn	DD	LC	CR0056	155
56	Malacostraca	Decapoda	Palaemonidae	<i>Macrobrachium idella</i>	Slender river prawn	DD	LC	CR0057	156
57	Malacostraca	Decapoda	Palaemonidae	<i>Macrobrachium lamarrei</i>	Kuncho River Prawn	LC	LC	CR0058	99
58	Malacostraca	Decapoda	Palaemonidae	<i>Macrobrachium lanchesteri</i>	Rice land prawn	DD	LC	CR0059	157
59	Malacostraca	Decapoda	Palaemonidae	<i>Exopalaemon styliferus</i>	Roshma prawn	DD	NE	CR0060	153
60	Malacostraca	Decapoda	Palaemonidae	<i>Exopalaemon modestus</i>	Siberian prawn	DD	LC	CR0061	152
61	Malacostraca	Decapoda	Palaemonidae	<i>Nematopalaemon tenuipes</i>	Spider prawn	DD	NE	CR0062	159
62	Malacostraca	Decapoda	Palaemonidae	<i>Palaemon karnafulensis</i>	Karnafuli shrimp	LC	NE	CR0063	105
63	Malacostraca	Decapoda	Palaemonidae	<i>Palaemon serrifer</i>	Carpenter shrimp, Barred estuarine shrimp	DD	NE	CR0064	160
64	Malacostraca	Decapoda	Palaemonidae	<i>Leandrites celebensis</i>	Caridean Shrimp	DD	NE	CR0065	154
65	Malacostraca	Decapoda	Alpheidae	<i>Alpheus euprosyne</i>	Nymph Snapping Shrimp	DD	NE	CR0066	145
66	Malacostraca	Decapoda	Hippolytidae	<i>Exhippolydata ensirostris</i>	Hunter Shrimp	DD	NE	CR0067	150
67	Malacostraca	Decapoda	Hippolytidae	<i>Lysmata vittata</i>	Indian Lined Shrimp	DD	NE	CR0068	151
68	Malacostraca	Decapoda	Pandalidae	<i>Heterocarpus gibbosus</i>	Humpback Nylon Shrimp	DD	NE	CR0069	161
69	Malacostraca	Decapoda	Pandalidae	<i>Heterocarpus woodmasoni</i>	Indian Nylon Shrimp	DD	NE	CR0070	162
70	Malacostraca	Decapoda	Pandalidae	<i>Plesionika martia</i>	Golden Shrimp, Golden Prawn	DD	NE	CR0071	163
71	Malacostraca	Decapoda	Palinuridae	<i>Panulirus homarus</i>	Scalloped Spiny Lobster	VU	LC	CR0072	77
72	Malacostraca	Decapoda	Palinuridae	<i>Panulirus ornatus</i>	Ornate Spiny Lobster	VU	LC	CR0073	78
73	Malacostraca	Decapoda	Palinuridae	<i>Panulirus polyphagus</i>	Mud Spiny Lobster	VU	LC	CR0074	79
74	Malacostraca	Decapoda	Palinuridae	<i>Panulirus versicolor</i>	Painted Spiny Lobster	EN	LC	CR0075	73
75	Malacostraca	Decapoda	Scyllaridae	<i>Thenus orientalis</i>	Flathead lobster, Sand lobster	NT	LC	CR0076	91
76	Malacostraca	Decapoda	Scyllaridae	<i>Scyllarus depressus</i>	Scaled slipper lobster	DD	LC	CR0077	182
77	Malacostraca	Decapoda	Coenobitidae	<i>Coenobita variabilis</i>	Australian Land Hermit Crab	DD	NE	CR0078	206
78	Malacostraca	Decapoda	Paguridae	<i>Pagurus bernhardus</i>	Common Hermit Crab, Soldier Crab	DD	NE	CR0079	207
79	Malacostraca	Decapoda	Paguridae	<i>Parapagurus nudus</i>	Hermit Crab	DD	NE	CR0080	208
80	Malacostraca	Decapoda	Calappidae	<i>Calappa lophos</i>	Common box crab	DD	NE	CR0081	189
81	Malacostraca	Decapoda	Calappidae	<i>Calappa pustolosa</i>	Pustulous Box Crab	DD	NE	CR0082	190

Sl. No.	Class	Order	Family	Scientific Name	English Name	Status in Bangladesh	Status Global	Species ID	Page No.
82	Malacostraca	Decapoda	Leucosidae	<i>Philyra globosa</i>	Purse crab	DD	NE	CR0083	196
83	Malacostraca	Decapoda	Matutidae	<i>Matuta lunaris</i>	Common moon crab	VU	NE	CR0084	80
84	Malacostraca	Decapoda	Matutidae	<i>Matuta planipes</i>	Flower moon crab	DD	NE	CR0085	197
85	Malacostraca	Decapoda	Matutidae	<i>Matuta victor</i>	Common Moon crab	DD	NE	CR0086	198
86	Malacostraca	Decapoda	Daldorfidae	<i>Daldortia horrida</i>	Horrida elbow crab	DD	NE	CR0087	192
87	Merostomata	Xiphosura	Limulidae	<i>Carcinoscorpius rotundicauda</i>	Mangrove Horseshoe Crab	VU	DD	CR0088	85
88	Malacostraca	Decapoda	Portunidae	<i>Scylla olivacea</i>	Mud Crab, Orange Mud Crab	LC	NE	CR0089	129
89	Malacostraca	Decapoda	Portunidae	<i>Scylla serrata</i>	Giant Mud Crab, Mangrove Crab	LC	NE	CR0090	130
90	Malacostraca	Decapoda	Portunidae	<i>Thalmita crenata</i>	Mangrove swimming crab	DD	NE	CR0091	205
91	Malacostraca	Decapoda	Carpiliidae	<i>Carpilius maculatus</i>	Spotted Reef Crab	DD	NE	CR0092	191
92	Malacostraca	Decapoda	Potamidae	<i>Acanthopotamon martensi</i>	Freshwater Crab	LC	LC	CR0093	131
93	Malacostraca	Decapoda	Potamidae	<i>Sartoriana spinigera</i>	Freshwater Crab	LC	LC	CR0094	133
94	Malacostraca	Decapoda	Potamidae	<i>Lobothelphusa woodmasoni</i>	Freshwater Crab	LC	LC	CR0095	132
95	Malacostraca	Decapoda	Gecarcinucidae	<i>Austrothelphusa transversa</i>	Inland freshwater crab	LC	LC	CR0096	122
96	Malacostraca	Decapoda	Ocypodidae	<i>Ocypode ceratophthalma</i>	Horned Ghost Crab	LC	NE	CR0097	125
97	Malacostraca	Decapoda	Ocypodidae	<i>Ocypode macrocera</i>	Red ghost crab	LC	NE	CR0098	126
98	Malacostraca	Decapoda	Dotillidae	<i>Dotilla myctiroides</i>	Sand bubbler crab	DD	NE	CR0099	193
99	Malacostraca	Decapoda	Ocypodidae	<i>Uca annulipes</i>	Mangrove crab, Ring-legged Fiddler Crab	DD	NE	CR0100	199
100	Malacostraca	Decapoda	Ocypodidae	<i>Uca dussumieri</i>	Purple Fiddler Crab	DD	NE	CR0101	200
101	Malacostraca	Decapoda	Ocypodidae	<i>Uca rosea</i>	Rosy Fiddler Crab	DD	NE	CR0102	201
102	Malacostraca	Decapoda	Ocypodidae	<i>Uca triangularis</i>	Triangular fiddler crab, Fiddler crab	DD	NE	CR0103	202
103	Malacostraca	Decapoda	Ocypodidae	<i>Uca urvillei</i>	d'Urville's Fiddler Crab	DD	NE	CR0104	203
104	Malacostraca	Decapoda	Ocypodidae	<i>Uca vocans</i>	Calling Fiddler Crab, Orange Fiddler Crab	DD	NE	CR0105	204
105	Malacostraca	Decapoda	Grapsidae	<i>Metopograpsus messor</i>	Alamini, Paddler Crab	DD	NE	CR0106	195
106	Malacostraca	Decapoda	Grapsidae	<i>Pyxidognathus fluviatilis</i>	Grapsid Crab	LC	NE	CR0107	123
107	Malacostraca	Decapoda	Sesamidae	<i>Perisesarma bidens</i>	Red Clawed Crab	LC	NE	CR0108	136
108	Malacostraca	Decapoda	Sesamidae	<i>Episesarma mederi</i>	Thai Vinegar Crab	LC	NE	CR0109	134
109	Malacostraca	Decapoda	Sesamidae	<i>Episesarma versicolor</i>	Violet vinegar crab	LC	NE	CR0110	135
110	Malacostraca	Decapoda	Grapsidae	<i>Varuna litterata</i>	Oceanic Paddler Crab; Herring Bow Crab	LC	NE	CR0111	124
111	Malacostraca	Decapoda	Grapsidae	<i>Grapsus albolineatus</i>	Mottled Sally Light Foot Crab	DD	NE	CR0112	194

Sl. No.	Class	Order	Family	Scientific Name	English Name	Status in Bangladesh	Status Global	Species ID	Page No.
112	Malacostraca	Stomatopoda	Squillidae	<i>Oratosquilla perpersa</i>	Common Squillid Mantis Shrimp	EN	NE	CR0113	74
113	Malacostraca	Isopoda	Cymothoidae	<i>Cymothoa indica</i>	Tongue-Eating Louse	DD	NE	CR0114	211
114	Malacostraca	Isopoda	Bopyridae	<i>Probopyrus bengalensis</i>	Crustacean Parasites	DD	NE	CR0115	212
115	Ostracoda	Podocopida	Cypridae	<i>Cypris subglobosa</i>	Seed shrimp	DD	NE	CR0116	183
116	Ostracoda	Podocopida	Cypridae	<i>Stenocypris fontinalis</i>	Seed shrimp	DD	NE	CR0117	185
117	Ostracoda	Podocopida	Cypridae	<i>Stenocypris malcolmsoni</i>	Ostracode	DD	NE	CR0118	186
118	Oastracoda	Podocopida	Notodromadidae	<i>Cypris occidentalis</i>	Seed Shrimp, Ostracode	NE	NE	CR0119	43
119	Ostracoda	Podocopida	Cypridae	<i>Eucypris virens</i>	Seed Shrimp, Mussle Shrimp	DD	NE	CR0120	184
120	Maxillopoda	Sessilia	Chthamalidae	<i>Chthamalus challengeri</i>	Barnacle	DD	NE	CR0121	209
121	Maxillopoda	Sessilia	Tetracitidae	<i>Tetracitella squamosa</i>	Barnacle, Pink Barnacle	DD	NE	CR0122	210
122	Maxillopoda	Sessilia	Balanidae	<i>Balanus amphitrite</i>	Purple Acorn Barnacle	LC	NE	CR0123	138
123	Branchiopoda	Diplostraca	Cyclestheridae	<i>Cyclestheria hislopi</i>	Clam Shrimp	DD	NE	CR0124	187
124	Branchiopoda	Diplostraca	Bosminidae	<i>Eubosmina (Bosmina) coregoni</i>	Water Flea	DD	NE	CR0125	213
125	Branchiopoda	Diplostraca	Daphniidae	<i>Ceriodaphnia reticulata</i>	Water Flea	VU	NE	CR0126	86
126	Maxillopoda	Cyclopoida	Cyclopidae	<i>Cyclops bicolor</i>	Copepod Zooplankton	DD	NE	CR0127	219
127	Maxillopoda	Cyclopoida	Cyclopidae	<i>Cyclops nanus</i>	Zooplankton, Water Flea	LC	NE	CR0128	141
128	Branchiopoda	Diplostraca	Daphniidae	<i>Daphnia lumholtzi</i>	Water Flea	LC	NE	CR0129	139
129	Branchiopoda	Diplostraca	Daphniidae	<i>Daphnia magna</i>	Water Flea	LC	NE	CR0130	140
130	Maxillopoda	Calanoida	Diaptomidae	<i>Diaptomus gracilis</i>	Calanoid Copepod	VU	NE	CR0131	87
131	Maxillopoda	Calanoida	Diaptomidae	<i>Notodiaptomus transitans</i>	Calanoid Copepod	DD	NE	CR0132	218
132	Maxillopoda	Cyclopoida	Cyclopidae	<i>Macrocylops distinctus</i>	Cyclopoid Copepod	DD	NE	CR0133	220
133	Branchiopoda	Diplostraca	Macrothricidae	<i>Macrothrix laticornis</i>	Anomopod	DD	NE	CR0134	214
134	Maxillopoda	Cyclopoida	Cyclopidae	<i>Mesocyclops dybowskii</i>	Copepod	DD	NE	CR0135	221
135	Maxillopoda	Cyclopoida	Cyclopidae	<i>Thermocyclops inversus</i>	Copepod Zooplankton	DD	NE	CR0136	223
136	Branchiopoda	Diplostraca	Moinidae	<i>Moina brachiata</i>	Water Flea	DD	NE	CR0137	215
137	Branchiopoda	Diplostraca	Moinidae	<i>Moina macrocopa</i>	Water Flea	DD	NE	CR0138	216
138	Branchiopoda	Diplostraca	Moinidae	<i>Moina reticulata</i>	Water flea	DD	NE	CR0139	217
139	Maxillopoda	Cyclopoida	Cyclopidae	<i>Paracyclops fimbriatus</i>	Copepod Zooplankton	DD	NE	CR0140	222
140	Malacostraca	Decapoda	Diogenidae	<i>Clibanarius longitarsus</i>	Blue-stripped Hermit Crab	LC	NE	CR0141	137
141	Malacostraca	Decapoda	Calappidae	<i>Calappa bilineata</i>	Two Stripped Box Crab	DD	NE	CR0142	188

Appendix-ii

Sample Assessment Sheet

Updating Species Red List of Bangladesh Assessment Sheet

Name of Species:

Species ID:

Taxonomy

Kingdom	Phylum	Class	Order	Family

Scientific Name:

Species Authority:

English Name:	
Local Name:	
Synonym/s:	
Taxonomic Notes:	

Assessment Information

Red List Category & Criteria (Status):	
Justification:	
Level of Assessment:	
Date Assessed:	
History:	

Geographic Range

Global Range	
Global Status	
Global Population	
Local Range Description:	
Presence in Protected Areas:	
Extent of Occurrence	
Area of Occupancy	
Range Map:	

Population

Generation Time (Length)	
Total Population	
No. of Sub-population	
Trend	

Habitat and Ecology

Habit	
Habitat	
Niche	
Elevation	
Home Range	
Active Period	

Threats	
Habitat Destruction	
Trade	
Hunting/Poaching	
Other 1	
Other 2	

Conservation Actions	
Wildlife Legislation	
CITES	
Other 1	
Other 2	

Recommendations	
Research	
Management	
Captive stocks	
Other 1	
Other 2	

Sources/References	

Citation (To be filled up by Lead Assessor)

Name of the Contributors	
Assessor:	
Associate Assessor/s:	
Reviewer/s:	
Facilitator:	

Signature of the Assessor

Signature of the Lead Assessor

Population and Population Size (Criteria A, C and D)

The term 'population' is used in a specific sense in the Red List Criteria that is different to its common biological usage. Population is here defined as the total number of individuals of the taxon. For functional reasons, primarily owing to differences between life forms, population size is measured as numbers of mature individuals only. In the case of taxa obligately dependent on other taxa for all or part of their life cycles, biologically appropriate values for the host taxon should be used.

Subpopulations (Criteria B and C)

Subpopulations are defined as geographically or otherwise distinct groups in the population between which there is little demographic or genetic exchange (typically one successful migrant individual or gamete per year or less).

Mature individuals (Criteria A, B, C and D)

The number of mature individuals is the number of individuals known, estimated or inferred to be capable of reproduction. When estimating this quantity, the following points should be borne in mind:

- Mature individuals that will never produce new recruits should not be counted (e.g. densities are too low for fertilization).
- In the case of populations with biased adult or breeding sex ratios, it is appropriate to use lower estimates for the number of mature individuals, which take this into account.
- Where the population size fluctuates, use a lower estimate. In most cases this will be much less than the mean.
- Reproducing units within a clone should be counted as individuals, except where such units are unable to survive alone (e.g. corals).
- In the case of taxa that naturally lose all or a subset of mature individuals at some point in their life cycle, the estimate should be made at the appropriate time, when mature individuals are available for breeding.
- Re-introduced individuals must have produced viable offspring before they are counted as mature individuals.

Generation (Criteria A, C and E)

Generation length is the average age of parents of the current cohort (i.e. newborn individuals in the population). Generation length therefore reflects the turnover rate of breeding individuals in a population. Generation length is greater than the age at first breeding and less than the age of the oldest breeding individual, except in taxa that breed only once. Where generation length varies under threat, the more natural, i.e. predisturbance, generation length should be used.

Reduction (Criterion A)

A reduction is a decline in the number of mature individuals of at least the amount (%) stated under the criterion over the time period (years) specified, although the decline need not be continuing. A reduction should not be interpreted as part of a fluctuation unless there is good evidence for this. The downward phase of a fluctuation will not normally count as a reduction.

Continuing decline (Criteria B and C)

A continuing decline is a recent, current or projected future decline (which may be smooth, irregular or sporadic) which is liable to continue unless remedial measures are taken. Fluctuations will not normally count as continuing declines, but an observed decline should not be considered as a fluctuation unless there is evidence for this.

Extreme fluctuations (Criteria B and C)

Extreme fluctuations can be said to occur in a number of taxa when population size or distribution area varies widely, rapidly and frequently, typically with a variation greater than one order of magnitude (i.e. a tenfold increase or decrease).

Severely fragmented (Criterion B)

The phrase 'severely fragmented' refers to the situation in which increased extinction risk to the taxon results from the fact that most of its individuals are found in small and relatively isolated subpopulations (in certain circumstances this may be inferred from habitat information). These small subpopulations may go extinct, with a reduced probability of recolonization.

Extent of occurrence (Criteria A and B)

Extent of occurrence is defined as the area contained within the shortest continuous imaginary boundary which can be drawn to encompass all the known, inferred or projected sites of present occurrence of a taxon, excluding cases of vagrancy. This measure may exclude discontinuities or disjunctions within the overall distributions of taxa (e.g. large areas of obviously unsuitable habitat) (but see 'area of occupancy' below). Extent of occurrence can often be measured by a minimum convex polygon (the smallest polygon in which no internal angle exceeds 180 degrees and which contains all the sites of occurrence).

Area of occupancy (Criteria A, B and D)

Area of occupancy is defined as the area within its 'extent of occurrence' (see point 9 above) which is occupied by a taxon, excluding cases of vagrancy. The measure reflects the fact that a taxon will not usually occur throughout the area of its extent of occurrence, which may contain unsuitable or unoccupied habitats. In some cases (e.g. irreplaceable colonial nesting sites, crucial feeding sites for migratory taxa) the area of occupancy is the smallest area essential at any stage to the survival of existing populations of a taxon. The size of the area of occupancy will be a function of the scale at which it is measured, and should be at a scale appropriate to relevant biological aspects of the taxon, the nature of threats and the available data. To avoid inconsistencies and bias in assessments caused by estimating area of occupancy at different scales, it may be necessary to standardize estimates by applying a scale-correction factor. It is difficult to give strict guidance on how standardization should be done because different types of taxa have different scale-area relationships.

Location (Criteria B and D)

The term 'location' defines a geographically or ecologically distinct area in which a single threatening event can rapidly affect all individuals of the taxon present. The size of the location depends on the area covered by the threatening event and may include part of one or many subpopulations. Where a taxon is affected by more than one threatening event, location should

be defined by considering the most serious plausible threat.

Quantitative analysis (Criterion E)

A quantitative analysis is defined here as any form of analysis which estimates the extinction probability of a taxon based on known life history, habitat requirements, threats and any specified management options. Population viability analysis (PVA) is one such technique. Quantitative analyses should make full use of all relevant available data. In a situation in which there is limited information, such data as are available can be used to provide an estimate of extinction risk (for instance, estimating the impact of stochastic events on habitat). In presenting the results of quantitative analyses, the assumptions (which must be appropriate and defensible), the data used and the uncertainty in the data or quantitative model must be documented.

Benign introduction

An attempt to establish a taxon, for the purpose of conservation, outside its recorded distribution but within an appropriate habitat and ecogeographical area; a feasible conservation tool only when there is no remaining area left within a taxon's historic range (IUCN 1998).

Breeding population

A (sub) population that reproduces within the region, whether this involves the entire reproductive cycle or any essential part of it.

Conspecific population

Populations of the same species; here applied to any taxonomic unit at or below the species level.

Downlisting and uplisting

The process for adjusting the Red List Category of a regional population according to a decreased or increased risk of extinction; downlisting refers to a reduced extinction risk and uplisting to an increased extinction risk.

Endemic taxon

A taxon naturally found in any specific area and nowhere else; this is a relative term in that a taxon can be endemic to a small island, to a country, or to a continent.

Global population

Total number of individuals of a taxon (see Population).

Metapopulation

A collection of subpopulations of a taxon, each occupying a suitable patch of habitat in a landscape of otherwise unsuitable habitat. The survival of the metapopulation is dependent on the rate of local extinctions of occupied patches and the rate of (re-) colonization of empty patches (Levins 1969, Hanski 1999).

Natural range

Range of a taxon, excluding any portion that is the result of an introduction to a region or neighbouring region. The delimitation between wild and introduced populations within a region may be based on a pre-set year or event, but this decision is left to the regional Red List authority.

Population

This term is used in a specific sense in the IUCN Red List Criteria (IUCN 2001, 2012), different from its common biological usage. Population is defined as the total number of individuals of the taxon. Within the context of a regional assessment, it may be advisable to use the term global population for this. In the Guidelines the term population is used for convenience, when reference is made to a group of individuals of a given taxon that may or may not interchange propagules with other such entities (see Regional population and Subpopulations).

Propagule

A living entity capable of dispersal and of producing a new mature individual (e.g. a spore, seed, fruit, egg, larva, or part of or an entire individual). Gametes and pollen are not considered propagules in this context.

Region

A subglobal geographical area, such as a continent, country, state, or province.

Regional assessment

Process for determining the relative extinction risk of a regional population according to the Guidelines.

Regional population

The portion of the global population within the area being studied, which may comprise one or more subpopulations.

Rescue effect

Process by which immigrating propagules result in a lower extinction risk for the target population.

Sink

An area where the local reproduction of a taxon is lower than local mortality. The term is normally used for a subpopulation experiencing immigration from a source where the local reproduction is higher than the local mortality

Subpopulations

Geographically or otherwise distinct groups in the (global) population between which there is little demographic or genetic exchange (typically one successful migrant individual or gamete per year or less; IUCN 2001, 2012); a subpopulation may or may not be restricted to a region.

Taxon

A species or infra specific entity whose extinction risk is being assessed.

Vagrant

A taxon that is currently found only occasionally within the boundaries of a region (see Visitor).

Visitor (also, visiting taxon)

A taxon that does not reproduce within a region but regularly occurs within its boundaries either now or during some period of the last century. Regions have several options on how to decide the boundaries between visitors and vagrants, e.g. using a preset percentage of the global population found in the region or predictability of occurrence.

Wild population

A population within its natural range in which the individuals are the result of natural reproduction (i.e. not the result of human-mediated release or translocation); if a population is the result of a benign introduction that is now or has previously been successful (i.e. self-sustaining), the population is considered wild.

Appendix-iv

SUMMARY OF THE FIVE CRITERIA (A-E) USED TO EVALUATE IF A TAXON BELONGS IN AN IUCN RED LIST THREATENED CATEGORY (CRITICALLY ENDANGERED, ENDANGERED OR VULNERABLE)¹.

A. Population sized reduction. Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4			
	Critically Endangered	Endangered	Vulnerable
A1	≥ 90%	≥ 70%	≥ 50%
A2, A3 & A4	≥ 90%	≥ 50%	≥ 30%
A1	<i>based on any of the following:</i>		(a) direct observation [except A3]
A2			(b) an index of abundance appropriate to the taxon
A3			(c) a decline in area of occupancy (A00), extent of occurrence (E00) and/or habitat quality
A4			(d) actual or potential levels of exploitation
			(e) effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.
B. Geographic range in the form of either B1 (extent of occurrence) AND/OR B2 (area of occupancy)			
	Critically Endangered	Endangered	Vulnerable
B1. Extent of occurrence (E00)	< 100 km ²	< 5,000 km ²	< 20,000 km ²
B2. Area of occupancy (A00)	< 10 km ²	< 500 km ²	< 2,000 km ²
AND at least 2 of the following 3 conditions:			
(a) Severely fragmented OR Number of locations	= 1	≤ 5	≤ 10
(b) Continuing decline observed, estimated, inferred or projected in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) area, extent and/or quality of habitat; (iv) number of locations or subpopulations; (v) number of mature individuals			
(c) Extreme fluctuations in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or subpopulation; (iv) number of mature individuals			
C. Small population size and decline			
	Critically Endangered	Endangered	Vulnerable
Number of mature individuals	< 250	< 2,500	< 10,000
AND at least one of C1 or C2			
C1. An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future):	25% in 3 years or 1 generation (whichever is longer)	20% in 5 years or 2 generation (whichever is longer)	10% in 10 years or 3 generation (whichever is longer)
C2. An observed, estimated, projected or inferred continuing decline AND at least 1 of the following 3 conditions:			
(a) (i) Number of mature individuals in each subpopulation	≤ 50	≤ 250	≤ 1,000
(ii) % of mature individuals in one subpopulation =	90-100%	95-100%	100%
(b) Extreme fluctuations in the number of mature individuals			
D. Very small or restricted population			
	Critically Endangered	Endangered	Vulnerable
D. Number of mature individuals	< 50	< 250	D1. < 1,000
D2. <i>Only applies to the VU category</i> Restricted area of occupancy or number of locations with a plausible future threat that could drive the taxon to CR or EX in a very short time.			D2. typically: A00 < 20km ² or number of locations ≤ 5
E. Quantitative Analysis			
	Critically Endangered	Endangered	Vulnerable
Indicating the probability of extinction in the wild to be:	≥ 50% in 10 years or 3 generation, whichever is longer (100 years max.)	≥ 20% in 20 years or 5 generation, whichever is longer (100 years max.)	≥ 0% in 100 years

¹ Use of this summary sheet requires full understanding of the IUCN Red List Categories and Criteria and Guidelines for Using the IUCN Red List Categories and Criteria. Please refer to both documents for explanations of terms and concepts used here.

Source: IUCN Red List Categories and Criteria version 3.1 (IUCN 2012).

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37	www.segrestfarms.com	Segrest Farms, P.O. Box 758, Gibsonton, Florida 33534	146
38	2009 Moorea Biocode	UC Berkeley Richard B. Gump South Pacific Research Station and France's CNRS-EPHE Centre de Recherches Insulaires et Observatoire de l'Environnement (CRIOBE)	149

Strengthening Regional Co-operation for Wildlife Protection (SRCWP) Project

The Strengthening Regional Co-operation for Wildlife Protection (SRCWP) project, the first World Bank supported regional project in South Asia, aims to build country capacity and incentives for tackling the illegal wildlife trade and other selected regional conservation threats to habitats in border areas. The project was launched in 2011 in Bangladesh and Nepal in the first phase and Bhutan joined in the second phase to bring regional collaboration in combating wildlife crime through strengthened legislative and regulatory frameworks and well-equipped specialized agencies and systems, as well as relevant training and awareness programmes for staff responsible for enforcement of wildlife law and regulations. The project is also supporting the strengthening of the South Asia Wildlife Enforcement Network (SAWEN) which was established by SAARC countries in 2011 to combat wildlife crime in South Asia region.

The Bangladesh Forest Department (BFD) is implementing the project through a partnership with research institutes, universities and environmental NGOs. A total of 36 sub-projects have been supported to improve the management of protected areas and conservation of flagship species through a landscape approach. Some of the sub-projects are addressing human-wildlife conflict through engagement with the local communities and civil society to foster an enduring culture of wildlife stewardship and protection. The regional wildlife project has supported the establishment of a Wildlife Crime Control Unit (WCCU) within the Wildlife Circle, three Wildlife divisions in the Forest Department, and a Wildlife Center to undertake training, research, education and awareness on the issues of wildlife conservation and protection.



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