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Preliminary studies on the faunal diversity in the fish landing centers of Sunderbans

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Abstract

The Indian part of Sunderbans consists an area of 9630 sq km including various islands and mainland connectivity. Majority of the population depends on fishing activity especially the livelihood of the local people is supported with capture fisheries. The biodiversity in Sundarbans includes numerous species of phytoplankton, fungi, bacteria, zooplankton, plants, benthic invertebrates, molluscs, fishes, reptiles, amphibians, birds and mammals. Since fishery is the main activity, a large number of crafts and gears were operated in the creeks, estuaries and marine systems. Total marine fisherfolk population in Sunderbans is 2,69,565 with an active fisher population of 70,750 residing in 237 villages operates 6,205 mechanized crafts 3,81,028 motorised crafts and 6,046 non-motorised crafts. The commercial exploitation of the faunal communities is positively correlated with the increase in crafts and gears. Trawls, gill netters, purse sciners etc. are among the mechanized crafts and plank built boats, dugout canoes and catamarans are under non mechanized crafts. Hence the Present study is significant in recording the observation on the local fishing markets which is considered as the collection point of the commercial fauna mainly fishes and crustaceans including crabs and prawns. The collected fauna of Sunderbans are disbursed to various commercial outlets named fish markets leading to Kolkata and port Canning is considered as the main outlet since it was popularly called as Gate way of Sunderbans. Canning is situated on the bank of river Matla which is the western boundary of Indian part of Sunderbans. Hence an outline research work was initiated to demark the preliminary data on the commercial faunal exploitation from Sunderbans ecosystems through Canning. The present study recorded a total of 06 species of Brachyuran Crabs from 01 Order, 04 Families, 05 Genera and 22 Examples; 01 species of Prawn from 01 Order, 01 Family, 01 Genus and 01 Example; 01 species of Lobster from 01 Order, 01 Family, 01 Genus and 01Example; 72 species of Fishes from 10 Orders, 41 Families, 64 Genera and 161 Examples; 01 species of Reptile from 01 Order, 01 Family, 01 Genus and 01 Example.

Keywords: Correlation, Crafts, Ecosystem, Exploitation, Fishery, Gears

Introduction

The Sundarbans, the largest mangrove forest in the world it is famous for its marine and estuarine fauna. The Sundarbans constitutes an area of 26,000 sq km, of which 9,630 sq km is in Indian Territory and the rest in Bangladesh (Gupta 2002). The Indian component constitutes 106 islands, of which 54 are inhabited, located in 13 blocks in 24 Parganas South District and six blocks in 24 Parganas North District, with a population of 4.2 mn (2001 census).A large population is dependent on fishery activity and capture fisheries is treated as the backbone of Sundarban economy. But fisheries in Sundarbans face some difficult problems which have an impact on the biodiversity, sustainability and livelihood of fish resources and fisher folk *viz.* shrinking tiger prawn population, indiscriminate fish seed collection, lack of post harvest and other infrastructures, natural calamities such as cyclonic storms and low pressure in Bay of Bengal and seizure of fish trawlers by Bangladesh navy, etc.

The biodiversity in Sundarbans includes numerous species of phytoplankton, fungi, bacteria, zooplankton, plants, benthic invertebrates, molluscs, fishes, reptiles, amphibians, birds and mammals (Rao, 1995). Species composition and community structure vary east to west,

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and along the hydrological and salinity gradients (Gopal and Chauhan, 2006).

Estuarine animal mainly fishes, prawns and Crabs are collected in and around the buffer area of Sunderban by different types of fishing nets viz., Fixed bag nets, Shore sciences and Boat scines, Gill nets, Set barrier nets, Trawl nets, Dip or lift nets, trawl nets, Cast nets, Clap or purse nets, Trap nets and hooks and lines (Dutta,1973). However bagnets contribute major portion to the above catch followed by hooks and lines and gill nets (Khan, 2002).The fisher mans are using mechanized as well as non mechanized crafts. Trawls, gill netters, purse sciners etc. are among the mechanized crafts and plank built boats, dugout canoes and catamarans are under non mechanized crafts.

All these collection after shorting out brought to the different landing Centre on the Constitutional Zone of Sunderban for the commercial purpose and transport mainly to Kolkata and outside market. Canning is one among the landing centre situated 40 kms from Kolkata. Its significance is it is considered as the gate way to Sunderbans. In between the catch and the market there are lot of diversity loss through net operation and indiscriminate collection. A bulk of the above catch is coming to Canning for commercial use due to its location and its direct connection to Kolkata through rail route. So Canning may a significant place to study the biodiversity loss as well as the actual landing species composition.

The mangrove ecosystem in Sunderbans acquired wide variety of faunal communities. Since the landing centers are the outlet for the commercial and non-commercial fauna. The commercially important marine and estuarine faunal communities were transported to various nearby landing centers. The main objective of the project is to focus on the faunal communities in the landing centers of Sunderbans.

Canning is one of the landing centers of Sunderbans. It also acts as the outlet for the marine and estuarine wealth of Sunderbans. Hence to monitor the faunal community that targets the landing centers this piece of work was undertaken.

The main objective of the study is

- to study the monthly abundance in the landing of different animal group
- to study the species composition
- to study different diversity indices

Materials and Methods

The survey focused on the canning landing center and extended upto Dabu mangrove area situated along the Matla coast. Both commercial and non-commercial faunal communities were targeted. The collected specimens were sorted groupwise and preserved. Field identification was done upto the genus level and was confirmed in lab with the help of manuals of Alcock (1895–1900), Sankarankutty (1961a,b; 1962a,b), Sakai (1976), Guinot (1976), Jeyabaskaran *et.al.* (2000), Nandi and Ghatak, (1985) and Dev Roy and Bhadra (2005). The collected crabs were sorted, labelled and preserved with 10% formaldehyde. The other groups were sent to respective sections of ZSIHQ and got identified.

Results

A preliminary survey conducted on the coast of Matla river and Canning Landing center including the Dabu mangrove area. Since Canning is considered as the gateway to Sunderbans the fauna collected has high significance. The Matla is the western boundary to the Indian part of Sunderbans.

Total marine fisherfolk population in Sunderbans is 2,69,565 with an active fisher population of 70,750 residing in 237 villages operates 6,205 mechanized crafts 3,81,028 motorised crafts and 6,046 non-motorised crafts (CMFRI, 2005). The mechanized fishing crafts including trawlers, large gill-netters and dol-netters are engaged to fish outside the Sunderbans forests area and in the Bay of Bengal whereas, the non-mechanised boats operated with a variety of gears like Cast net, Bottom set gill net, Drag net, Coloumn gill net, Bag set net, Surface gill net, Khara net, Funnell net, pot net, Courier net and Kondavala net (Mukherjee, 2007).

The present study recorded a total of 06 species of Brachyuran Crabs from 01 Order, 04 Families, 05 Genera and 22 Examples; 01 species of Prawn from 01 Order, 01 Family, 01 Genus and 01 Example; 01 species of Lobster from 01 Order, 01 Family, 01 Genus and 01 Example; 72 species of Fishes from 10 Orders, 41 Families, 64 Genera and 161 Examples; 01 species of Reptile from 01 Order, 01 Family, 01 Genus and 01 Example.

The list of species reported is as follows,
Phylum: ARTHROPODA
Class: CRUSTACEA

Order: DECAPODA
Family: PORTUNIDAE
Scylla serrata (Forskal, 1775)
Materials Examined: KN 1527, Coll. A. Gokul & J. K. Seth, 23.2.10, Canning, 02 ex; KN 1732, Coll. A. Gokul & J. K. Seth, 27.1.12, Canning, 01 ex; KN 1738, Coll. A. Gokul & J. K. Seth, 28.3.12, Canning, 01 ex.
Portunus (Portunus) pelagicus (Linnaeus, 1758)
Materials Examined: KN 1457, Coll. A. Gokul & J. K. Seth, 29.5.09, Matla, Canning, 03 exs; KN 1737, Coll. A. Gokul & J. K. Seth, 27.2.12, Canning, 01 ex.
Portunus (Portunus) sanguinolentus (Herbst, 1783)
Materials Examined: KN 1576, Coll. A. Gokul & J. K. Seth, 22.7.10, Matla, Canning, 01 ex.

Family: VARUNIDAE
Varuna litterata (Fabricius, 1798)
Materials Examined: KN 1721, Coll. A. Gokul & J. K. Seth, 29.9.11, Canning, 02 exs; KN 1735, Coll. A. Gokul & J. K. Seth, 27.2.12, Canning, 01 ex; KN 1736, Coll. A. Gokul & J. K. Seth, 27.2.12, Dabu, 01 ex.

Family: GRAPSIDAE
Metapograpsus messor (Forskål, 1775)
Materials Examined: KN 1723, Coll. A. Gokul & J. K. Seth, 17.10.11, Dabu, Canning, 05 exs

Family: OCYPODIDAE
Uca (*Tubuca*) *rosea* Tweedie, 1937
Materials Examined: KN 1724, Coll. A. Gokul & J. K. Seth, 17.10.11, Dabu, Canning, 04 exs

Family: PENAEDIDAE
Penaeus monodon Fabricius, 1798
Materials Examined: KN 1722, Coll. A. Gokul & J. K. Seth, 29.9.11, Canning, 01 ex

Family: PALINURIDAE
Panulirus polyphagus (Herbst, 1793)
Materials Examined: KN 1573, Coll. A. Gokul & J. K. Seth, 22.7.10, Matla, Canning, 01 ex

Phylum: PISCES
Order: MASTACEMBALIFORMES
Family MASTACEMBELIDAE
Macrognathus aculeatus (Bloch, 1795)
Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex
Mastacembeleus pancalus (Hamilton, 1822)
Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Order: CYPRINIFORMES
Family: COBOTIDAE
Lepidocephalincthyes guntea (Hamilton, 1822)
Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 2 exs

Order: OSTEOGLOSSIFORMES
Family: NOTOPTERIDAE
Notopterus notopterus (Pallas, 1769)
Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Order: SILURIFORMES
Family: ARIIDAE
Arius arius (Hamilton, 1882)
Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Family: BAGRIDAE
Mystus gulio (Hamilton, 1822)
Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Order: PERCIFORMES
Family: AMBASSIDAE
Ambassis nalua (Hamilton-Buchanan, 1882)
Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Family: ANABANTIDAE
Anabas cobojius (Hamilton, 1822)
Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex
Anabas testudines (Blotch, 1795)
Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Family: CARANGIDAE
Alpes klenii (Bloch, 1793)
Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex
Alpes djedaba (Forsskal, 1775)
Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 3 exs
Selar crumenopthalmus (Bloch, 1793)
Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 3 exs
Decapterus russelli (Rupell, 1830)
Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 3 exs

Family: CHANNIDAE

Channa punctatus (Bloch)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 4 exs

Family: CICHLIDAE

Oreochromis mossambica (Peters)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Family: DERPANIDAE

Drepane longimana (Bloch & Schneider, 1801)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Family: EPHIPPIDAE

Ephippus orbis (Bloch, 1787)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Family: GOBIIDAE

Acentrogobius viridipuncatus (Val, 1837)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Glossogobius giuris (Hamilton, 1822)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 8 exs

Boleopthalmus boddaert (Val, 1837)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 4 exs

Family: GERRIDAE

Gerreomorpha setifer (Hamilton, 1822)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Gerres filmentosus Cuvier, 1829

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Pentaprion longimanus (Cantor, 1850)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 2 exs

Family: LEOGNATHIDAE

Photopectoralis bindus (Val, 1835)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 3 exs

Gazza minuta (Blotch, 1797)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 2 exs

Family: LUTJANIDAE

Lutjanus johnii (Blotch, 1792)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Family: MULLIDAE

Upeneus sulphureus Cuvier, 1829

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 3 exs

Family: MUGILIDAE

Rhinomugil corsula (Hamilton, 1822)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Liza vaigiensis (Quoy & Gaimard, 1824)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 4 exs

Mugil cephalus Linnaeus, 1758

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 2 exs

Family: NEMIPTERIDAE

Nemipterus japonicas (Blotch, 1791)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 2 exs

Family: POLYNEMIDAE

Eleutheronima tetradactylum (Shaw, 1804)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 2 exs

Polydactylus indicus (Shaw, 1804)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Polynemus longipectoralis Weber & deBeaufort, 1922

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Polynemus paradiseus Linnaeus, 1758

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 3 exs

Family: POMADASYIDAE

Pomadsys maculatum (Bloch, 1797)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 2 exs

Pomadasya kaakan (Cuvier, 1830)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 6 exs

Family: SCIAENIDAE

Pama pama (Hamilton-Buchanan, 1822)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Pana microdon (Bleeker, 1849)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Johnius coitor (Hamilton-Buchanan, 1822)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Family: SILLAGNIDAE

Sillaginopsis panijus (Hamilton, 1822)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Silllago sihama (Forsskal, 1775)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 2 exs

Family: SERRANIDAE

Epinephelus malbaricus (Schineider, 1801)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Family: SPARIDAE

Acanthopagrus berda (Forskal, 1775)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 4 exs

Rhabdosargus scabar (Forsskal, 1775)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Family: TERAPONIDAE

Terapon jarbua (Forsskal, 1775)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 8 exs

Family: DERPANIDAE

Drepana longimana (Bloch & Schneider, 1801)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Family: STROMATEIDAE

Pampus argentius (Euphrassen, 1788)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Family: SCIAENIDAE

Dentrophysa russelli (Cuvier, 1829)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Pterotolithus maculates (Kuhl & VanHasselt, 1830)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Family: LEIOGNATHIDAE

Secutor insidiator (Blotch, 1787)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 5 exs

Nuchequula gerroides (Bleeker, 1851)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Family: KURTIDAE

Kutus indicus Blotch, 1786

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 3 exs

Family: SCTOPHAGIDAE

Scatophagus argus (Linnaeus, 1766)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 3 exs

Order: BELONIFORMES

Family: BELONIDAE

Xenentodon cancila (Hamilton, 1822)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Order: ANGUILLIFORMES

Family: CONGRIDAE

Ariosoma anago (Temmick & Schlegel, 1842)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Order: CLUPIFORMES

Family: ENGRAULIDIDAE

Coilio dussumieri, Valenciennes, 1848

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 7 exs

Setipinna tenuifilis, Valenciennes, 1848

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 3 exs

Family: CLUPEIDAE

Escualosa thorcata (Val, 1847)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 3 exs

Tenualosa toli (Val, 1847)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Anodontostoma thailandia Wongratana, 1983

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Dussumeieria acuta (Valenciennes, 1847)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Family: ENGRULIDIDAE

Coilia ramcarti (Hamilton, 1822)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 5 exs

Order: SCORPAENIFORMES

Family: PLATYCEPHALIDAE

Grammoplites scaber (Linnaeus, 1758)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 5 exs

Platycephalus indicus (Hamilton, 1822)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 7 exs

Order: PLEURONECTIFORMES

Family: BOTHIDAE

Pseudorhombus elevatus , Ogilby, 1912

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Pseudorhombus arsius (Ham-Buch, 1822)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Family: BAGRIDAE

Mystus gulio (Hamilton, 1822)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 2 exs

Family: CYNOGLOSSIDAE

Cynoglossus semifaciatus, Day, 1887

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Cynoglossus lingua, Ham-Buch, 1822

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 3 exs

Cynoglossus lida (Bleeker, 1851)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 3 exs

Cynoglossus arel (Schneider, 1801)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Phylum: REPTILIA

Order: SQUAMATA

Family: COLUBRIDAE

Ptyas mucosa (Linnaeus, 1758)

Materials Examined: Coll. A. Gokul & J. K. Seth, Canning, 1 ex

Discussion

Fishes like *Coilia* species, *Mugil* species, *Harpodon nehereus* (Bombay duck) were found abundant along with the common *Catla* and *Roghu*. Similar to the earlier reports (Gokul, 2008 a,b, 2009 a,b), the mud crab *Scylla serrata* along with the fish Bombay duck was found abundant in the Canning landing center. Mostly the crabs ranging from 4.5 cm to 7 cm carapace width was exploited in a major scale. However very small crabs ranging from 3 cm to 4 cm was also observed. Shrimps and prawns (*P. monodon, M. rosenbergii*) were also observed in the landing center as well as in the adjacent areas.

The mud crab *Scylla serrata* was found abundant in the landing center. Mostly the crabs ranging from 4.5 cm to 7 cm carapace width was commercially exploited. However some crabs ranging from 3.5 cm to 5 cm was also observed. Shrimps and prawns (*P. monodon, M. rosenbergii*) were also observed in the landing center as well as in the adjacent market places. It was also observed that to enhance the export value the commercial prawns were injected with hormones and other chemicals.

The present study is restricted to a confined area and focused only at Canning, the collection and observation on the faunal diversity is very restricted. Gastropods (Cyprids, *Telescopium* spp) were found common along the muddy coast of Matla estuary and also at Dabu area along the creeks of Matla and adjacent dense mangrove area the *Telescopium* spp was found abundant.

The collection and observation on the faunal diversity indicates that fishes were dominant in the Canning landing center. However some gastropods (Cyprids, *Telescopium* spp) were also collected along the muddy coast of Matla estuary. At Dabu area along the creeks of Matla and adjacent dense mangrove area the *Telescopium* spp was found abundant. The gastropods are naturally abundant along the belt of shore crabs like *Ocypode* spp and *Uca* spp.

The collection and observation on the faunal diversity indicates that fishes were dominant in the Canning landing center. However some gastropods (Cyprids, *Telescopium* spp) were also collected along the muddy coast of Matla estuary. At Dabu area along the creeks of

Matla and adjacent dense mangrove area the *Telescopium* spp was found abundant. The gastropods are naturally abundant along the belt of shore crabs like *Ocypode* spp and *Uca* spp.

A long term monitoring at all the landing centers of Sunderbans has to be done to work-out the diversity of fauna for its commercial value and to frame steps for conservation.

Summary

- The project planned to undertake a preliminary survey in all the landing centers of Sunderbans. However it was restricted to the coast of Matla Estuary forming the western border of Sunderbans.
- The landing centers of Sunderbans are the gateways to observe the species diversity of both commercial and non-commercial faunal diversity.
- Since the project-survey was modified and approved as local survey, the survey area was restricted to nearby and significant locality (Canning).
- Canning is considered as the gate way to Sunderbans and it is located nearby to make the local survey possible.
- The Sunderban fauna collected and transported by boat to Canning through Matla river which is the western boundary of Indian part of Sunderbans.
- A total of 25 Local surveys were done in and around canning Landing center along the coast of Matla includes the mangrove area of Dabu.
- A total of 954 specimens were collected pertaining to different groups including Brachyuran crabs, Anomuran Crabs, Prawns, Lobsters, Stomatopods, Gastropods, Bivalves, Fishes, Reptilia etc.
- Among the collected specimens 185 specimens were identified and the identification is under perusal.
- The details of the materials identified is as follows:

Brachyuran Crabs : 01 Order, 04 Families, 05 Genera, 06 Species, 22 Examples

Prawn : 01 Order, 01 Family, 01 Genus, 01 Species, 01 Example

Lobster : 01 Order, 01 Family, 01 Genus, 01 Species, 01Example

Pisces : 10 Orders, 41 Families, 64 Genera, 72 Species, 161 Examples

Reptile : 01 Order, 01 Family, 01 Genus, 01 Species, 01 Example

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PLATE 1


Common Fishes of Canning Landing Centre
Photopectoralis bindus
Ariosoma species
Toxotes chatareus
Scatophagus argus
Sillaginopsis panijus
Lates calcarifer
Sillago sihama
Ephippus orbis
Nemipterus japonicas
Alepes djedaba
Pomadasys kaakan
Boleopthalmus boddaerti
Scoliodon laticaudus
Pentaprion longimanus