

Indian mackerel (*Rastrelliger Kanagurta*)

Head of these fishes is longer than body depth. Maxilla partly concealed, covered by lachrymal bone but extending to about hind margin of eye. A black spot on body near lower margin of pectoral fin. Inter-pelvic process small and single. Swim bladder is present. Anal spine is rudimentary. Adults occur in coastal bays, harbours and deep lagoons, usually in some turbid plankton-rich waters. Form schools. Feed on phytoplankton (diatoms) and small zooplankton (cladocerans, ostracods, larval polychaetes, etc.). Small groups were seen eating eggs of *Cheilodactylus inermis* straight after spawning. Adult individuals feed on macro planktons such as larval shrimps and fish. Eggs and larvae are pelagic. Generally marketed fresh, frozen, canned, dried-salted, and smoked and also made into fish sauce. Usually found in South, Middle-West and South-East coasts of India Karnataka and Kerala coasts.



Indian Salmon (*Eleutheronema tetradactylum*)

Adults occur mainly over shallow muddy bottoms in coastal waters but also enter rivers. Juveniles are mostly found in estuaries. During winter, adults ascend the rivers. They usually form loose schools, although larger fish are more often observed in pairs or singly. These fishes feed on prawns and fish (largely members of Mugilidae, Engraulidae, and Sciaenidae). Occasionally feed on polychaetes also. Frequency of crustaceans to fish in the diet varies seasonally. Larvae (which are usually 7-30 mm long) feed mainly on copepods and mysids but also take shrimps and prawn larvae. Juveniles (usually 31-60 mm long) feed on prawns shrimps and mysids. These fishes are profandrous hermaphrodites. Male fish probably commence sex reversal immediately after spawning (i.e. about April-May) and this condition may persist until after the next spawning period. The progression from hermaphrodites to females is complete by the following season. There is little information on the larvae, although nursery areas are known to be lower estuaries, tidal swamps and lagoons, and shallows along the

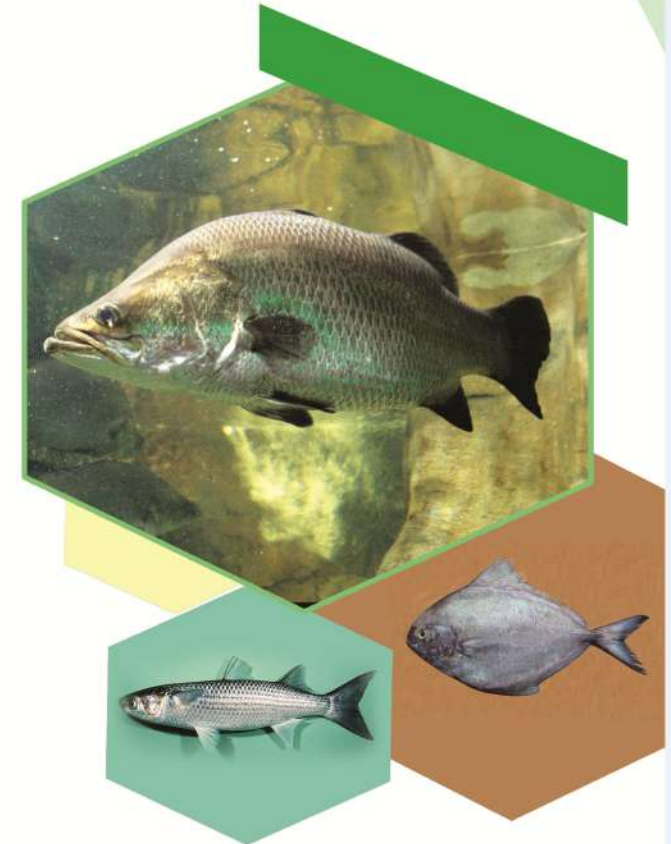


Marine Cat-fish or Kantia (*Sciades sona*)

These fishes live in Brackish, marine waters. Chiefly marine and occasionally freshwater. Their distribution is recorded in most of tropical and subtropical waters. Forked caudal fin. Adipose fin present. Barbels usually 3 pairs, rarely 2 pairs. Nasal barbels absent. Bony plates present on head and near dorsal fin. A leading spine in both pectoral and dorsal fins. Normally the male carries the relatively large eggs in its mouth until hatching, while distinct pairing is often seen. They are found distributed in entire Indo-West Pacific (ranges from Pakistan eastwards to Thailand and southwards to Indonesia and Polynesia). They are also known from the Mekong delta. The sharp dorsal and pectoral fin spines can inflict painful wounds to human. Sold mostly fresh and dried-salted in markets.



Few Marine Fishes of Odisha: Food and Commerce



PO-RRL, Acharya Vihar,
Bhubaneswar-751013, Odisha, Tel.: 0674-2567114
Email: rmnhbhubaneswar@gmail.com



REGIONAL MUSEUM OF NATURAL HISTORY

क्षेत्रीय प्राकृतिक विज्ञान संग्रहालय

ଆଞ୍ଚଳିକ ପ୍ରାକୃତିକ ବିଜ୍ଞାନ ସଂଗ୍ରହାଳୟ

Black pomfret (*Parastromateus niger*)

Black pomfrets is a species of carangid native to reefs of the Indian Ocean and the western Pacific Ocean, where it is found at depths from 15 to 105 m. These are Deep-bodied and strongly compressed fishes. Lateral line ends in weakly-developed scutes on the caudal peduncle. Pelvic fins lost in individuals over 9 cm. Color of these fishes is brown above, silvery-white below. The anterior parts of the dorsal and anal fins bluish-gray. The other fins are yellowish. Adults inhabit coastal areas with muddy substrate. Found near the bottom during daytime and near the surface at night. They also enter estuaries. Normally form large schools. Swim on its side near the surface. Feed on zooplankton. They lay eggs during July to October but mostly i



Giant sea perch (*Lates calcarifer*)

Body of the fish is elongate, mouth is large, slightly oblique and upper jaw is extending behind the eye. Caudal fin of these fishes is rounded. Found in coastal waters, estuaries and lagoons, in clear to turbid water. A diadromous fish, inhabiting rivers before returning to the estuaries to spawn. A protandrous hermaphrodite. Larvae and young juveniles live in brackish temporary swamps associated with estuaries, and older juveniles inhabit the upper reaches of rivers. Have preference for cover on undercut banks, submerged logs and overhanging vegetation. Feed on fishes and crustaceans. They reach 1.5 kg-3.0 kg in one year in ponds under optimum conditions. Juveniles also eat insects. Sold fresh and frozen, consumed steamed, pan-fried, broiled and baked. A very popular and sought-after fish of very considerable economic importance. Mostly found in Coastal waters, estuaries and lagoons, entering brackish water. Presently used for aquaculture in Thailand, Indonesia, Saudi Arabia, Hong Kong, Brunei and Australia. It is also Australia's most important commercial fish and one of the most popular angling species as well.



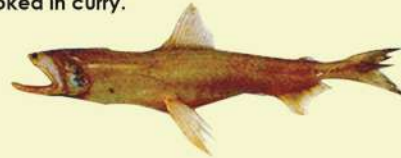
Chinese pomfret (*Pampus chinensis*)

Commonly known as Chines pomfrets is a species of butterfish that lives in coastal waters off the Middle East, South Asia, and Southeast Asia. Fish of this family are characterized by their flat bodies, forked tail fins, and long pectoral fins. Silver pomfrets are usually silver/white in colour, with few small scales. They can grow up to a range of 4-6 kg. However, due to overfishing, specimens weighing less than 1 kg are more commonly seen. Occurs seasonally singly or in small schools over muddy bottoms; may enter estuaries. It feeds on ctenophores, salps, medusae, and other zooplankton groups but will also prey on small benthic animals. This fish is prized in the Indo-Asia-Pacific region for its taste. Its flesh is soft and buttery when cooked.



Bombay duck or Newa (*Harpadon nehereus*)

The Bombay duck lives in the tropical areas of the Indo-Pacific. The fish is also known as "Strange fish" because of its discontinuous distribution along the Indian coast. It has been traditionally caught in the waters off Maharashtra in the Lakshadweep Sea, where it is an important item of the yearly catch. This fish is also caught in the Bay of Bengal and in the South China Sea, although in smaller numbers. Scales restricted to posterior half of the body. Posterior tip of pectoral fin reaching origin of pelvic fin. Inhabit deep water offshore on sandy mud bottom for most of the year, but also gathers in large shoals in deltas of rivers to feed during monsoons. Spawn 6 batches of broods per year. An aggressive predator. Primarily caught along Maharashtra with the bag-net, better known as 'dol' net. Operation of this gear is timed to a strong tidal current. The bag with the mouth set against the current strains the fish which is being retained therein by the strength of the current. The net is thus retrieved before the tide turns. Fishes are very phosphorescent. Excellent food fish. Marketed fresh and dried or salted; consumed pan-fried. After drying, the odour of the fish is extremely powerful, and it is usually transported in air-tight containers. The Bombay duck is a popular food item in certain areas of India. Fresh fish are usually fried or cooked in curry.



Dusky Finned Bull's-eye or Moontail Bull's-eye (*Priacanthus hamrur*)

Fish comes under a group usually called red fishes. The male fish can reach a maximum length of 45 cm. The body is orange to red or silver, or silver with broad red bands. The pelvic fins are very large. The eyes are large. The mouth is oblique with a protruding lower jaw. Uncommon species found in outer reef slopes and deep lagoon pinnacles from 8 to at least 80 m. In small aggregations, sometimes schools in oceanic locations. Also found under ledges or hovering next to coral heads during day. It feeds on small fish, crustaceans, and other small invertebrates. It is very generally marketed fresh, may be salted or dried. Mostly caught using hand lines and gillnets. This fish is also used in the aquarium trade. This is an important commercial species in Bombay waters and is available throughout most of the year and although various gears used to catch this species, most of the catch comes as bycatch from shrimp trawls. It is occasionally taken in trawls and by hook and line in moderate numbers. It is found widely distributed in the Indo-West Pacific from South Africa along east Africa to the Red Sea and southern Persian Gulf, Madagascar, and the Mascarenes, east to the Marquesas and Gambier Islands, north to southern Japan, south to Australia (from Western Australia to Queensland), Lord Howe Island and Tonga. Abundant occurrence of this fish is seen in East coasts of India Andhra Pradesh, Tamilnadu and coasts of Kerala.



Grey mullet (*Mugil cephalus*)

Specific features of these fishes are body stout, cylindrical in cross-section, slightly compressed; head broad and flattened. Adults are found in coastal waters, often entering estuaries and rivers, sometimes far-up-river, lagoons and hyper-saline environments. They are usually in schools over sand or mud bottom, between 0 to 10 m, occurring equally in tropical, subtropical and temperate waters. They are mainly diurnal, feeding on detritus, micro-algae and benthic organisms. Juveniles feed on zooplankton until about 3.0 cm. Reproduction takes place at sea, at various times of the year depending on the location. Adults form schools and migrate offshore to spawn and developing larvae migrate back inshore. There is absence of an obligatory freshwater phase in the life cycle. Females spawn 0.8 to 2.6 million eggs which develop at sea. Sexually mature at 3 to 4 years. Maximum length reported as 120 cm. Maximum weight reported as 12 kg. Widely cultivated in freshwater and brackish ponds. Marketed fresh, dried, salted, and frozen; sold fresh or smoked; also used in Chinese medicine. Cosmopolitan in coastal waters of the tropical, subtropical and temperate zones of all seas. Also found in East and West coasts of India South west coast, North east coast etc.



Indian Anchovy or Kokali (*Stolephorus indicus*)

It is a small schooling fish found in depth of 20-50m. Belly with 2 to 6 small needle-like pre-pelvic scutes. Maxilla tip pointed, reaching to or only just beyond front border of pre-operculum; hind border of pre-operculum convex, rounded. Isthmus muscle tapering evenly forward to hind border of branchial membrane. Body light transparent fleshy brown, with silver stripe down flank; no dark pigment lines on back between head and dorsal fin. A schooling species occurring in coastal waters and which appears to enter at least the estuarine parts of rivers and to tolerate brackish water. Feeds most likely on zooplankton, but more data needed. In Manila Bay, the Philippines, it migrates out into deeper and more saline water to spawn, returning inshore immediately thereafter. Processed into nuoc-man (fish pickle) in Indo-China. This fish is part of the cuisine of the South- and Southeast Asian marine regions. It can be crisp-fried, used to make fish-based culinary products like fish sauce or in curries. Used as bait in the tuna fishery in the South Pacific, although said to be fragile. *Stolephorus indicus* is widespread in the Western Pacific. Found in most of the tropical areas of the Indo-pacific oceans including Madagascar and Mauritius eastward and towards Australia and further east to Samoa in westwards. No major threats are known to impact this species. However, localized over-fishing is possible due to its common use for human consumption throughout its range.

