



SAGARIKA

THE MARINE RESEARCH
AQUARIUM

VIZHINJAM RESEARCH CENTRE OF CENTRAL MARINE
FISHERIES RESEARCH INSTITUTE
(INDIAN COUNCIL OF AGRICULTURAL RESEARCH)



The oceans have always fascinated the people with their magnificent coral reef ecosystems inhabited by the most brilliantly coloured animals. These breathtaking ecosystems with their beautiful inhabitants are displayed for visitors at "Sagarika" the Marine Research Aquarium run by the Central Marine Fisheries Research Institute (Under the Indian Council of Agricultural Research, New Delhi) situated close to Eve's (Hawa) beach, Kovalam, near Vizhinjam Lighthouse about 15 Km south of Thiruvananthapuram. Kovalam is an International Tourist Centre and every year thousands of foreign and domestic tourists flock to this beach to enjoy its natural beauty and frolic in the surf and silver sand. No trip to Kovalam is complete without a visit to this Research Aquarium.



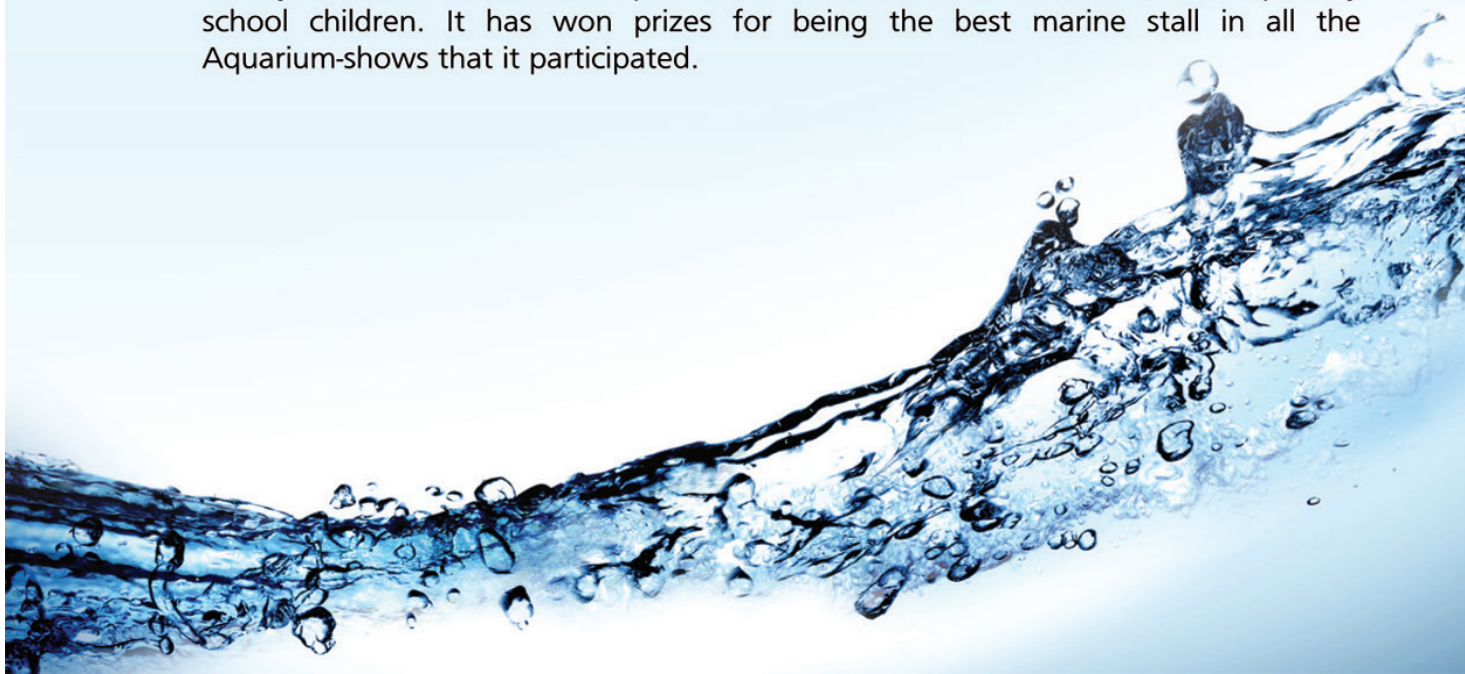
Kovalam Beach



Vizhinjam Lighthouse

This research and development (R&D) aquarium which was housed in a rented building at Vizhinjam for research and educational purpose since 1996, was later shifted to CMFRI's own campus near Kovalam beach in 2014. This Aquarium supports and sustains an incredibly diversified array of marine organisms especially ornamentals in myriad forms, shapes and characteristics. It has been the forerunner of Marine Aquaria in the country with its rare collection of marine fishes, invertebrates and seaweeds. Like many aquaria in the world, this Aquarium facilitates studies on the biology of hundreds of indigenous marine animals and has therefore become the cradle of marine ornamental fish breeding in India. It has been a breathtaking experience for thousands of visitors.

Currently this aquarium has 25 large glass aquaria of 1300 litre capacity each, a large 4000 litre acrylic cylindrical tank and three large concrete tanks containing marine organisms. This is further supported by a hatchery for the breeding of ornamental fishes and a live feed production unit. The aquarium is open to public on all days from 9.30 am to 5.00 pm. It has attracted over a million visitors especially school children. It has won prizes for being the best marine stall in all the Aquarium-shows that it participated.





Reef tank One of the main attractions of the Aquarium is the reef tank containing live corals and other animals associated with coral reefs. An attempt to create a miniature coral reef, often spectacularly coloured with mixed blend of invertebrates and reef fishes from different parts of India. Unlike the normal marine aquaria, which are built to house various types of fish, the main attraction in reef tanks is the varieties of corals and other invertebrates.



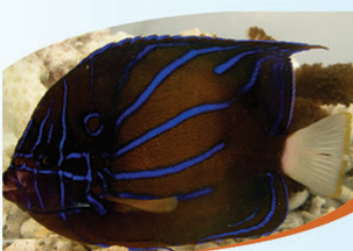
Cylindrical acrylic tank The 4000 litre capacity clear acrylic tank provides the visitors the spectacular view of shoaling fishes like silver moonies and pompanos which has become a major attraction.



Koran angelfish



Indian yellow-tail angelfish



Blue-ring angelfish

Marine angelfishes With their vibrant colours and deep, laterally compressed bodies, marine angelfishes are one of the most conspicuous residents of a marine aquarium. They are distinguished from butterfly fishes by the presence of strong preopercular spines. This feature also explains the family name Pomacanthidae; from the Greek word *poma* meaning "cover" and *akantha* meaning "thorn". Common angels of the aquarium include, Koran angelfish *Pomacanthus semicirculatus* which has Arabic like inscriptions on its tail, emperor angelfish *P. imperator*, blue-ring angelfish *P. annularis*, Indian yellow-tail angelfish *Apothemichthys xanthurus*, and coral beauty angel *Centropyge bispinosa* are other attractive angels of interest.



Emperor angelfish



Raccoon butterfly fish



Threadfin butterfly fish



Yellow head butterfly fish



Melon butterfly fish

Butterfly Fishes belonging to the family Chaetodontidae noted for their amazing array of colours and patterns are displayed in this aquarium, the majority of which live on or close to coral reefs. Most species have deep, flattened bodies that are frequently adorned by extended fins. The common ones usually displayed in aquarium include red tail butterfly *Chaetodon collare*, sunburst butterfly *C. kleinii*, Indian vagabond butterfly fish *C. decussatus*, yellow head butterfly fish *C. xanthocephalus*, threadfin butterfly fish *C. auriga*, gardner's butterfly fish *C. gardiner*, raccoon butterfly fish *C. lunula*, speckled butterfly fish *C. citrinellus*, lined butterfly fish *C. lineolatus*, vagabond butterfly fish *C. vagabundus*, black-back butterfly fish *C. melannotus*, eight banded butterfly fish *C. octofasciatus* and blue blotch butterfly fish *C. plebeius*, melon butterfly fish *C. trifasciatus*.

Banner Fishes are also included in this group. Their common name in German is "Wimple-fish" meaning "Pennantfish" or "banner fish". A wimple is a type of hat with feathers of which the heightened dorsal is reminiscent. Banner fishes displayed in the marine aquarium include *Heniochus acuminatus*, *H. monoceros*, *H. pleurotaenia*, *H. singularius* and *H. varius*.

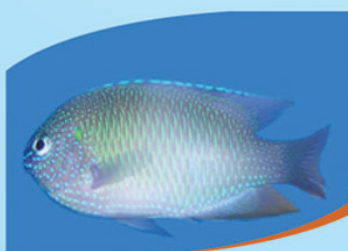


Longfin bannerfish



Singular bannerfish

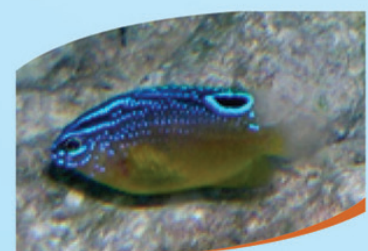
Damsels, clown fishes and sergeant majors These belong to the family Pomacentridae and two members of this family, namely *Amphiprion* and *Premnas* are commonly called clown fishes. Damsel-fishes are hardy, colourful and lively. Colourful ones in the aquarium include *Pomacentrus caeruleus* (blue damsel), *Dascyllus trimaculatus* (three spot dascyllus), *Neopomacentrus nemurus* (coral demoiselle), *P. pavo* (sapphire damsel) and *Crysiptera unimaculata* (one spot demoiselle). Most damselfishes are extremely hardy, colourful and lively.



Sapphire damsel



Blue damsel



One spot demoiselle

Clown Fishes are brightly coloured, hardy and very territorial. They are of orange, yellow, maroon and of many other vibrant colours. 'Finding Nemo', a movie about the agony of a captured clownfish, caused manifold increase in the demand for them. The most common clown fish and the one that looks most like Nemo, the world famous cartoon character, is the percula clown fish which is bright orange in colour with white stripes.

Clown Fishes usually live in association with the sea anemones. Anemones are carnivorous animals that look like underwater flowers and some species have finger like tentacles. They have poisonous glands or stinging cells which help them in defence and preying. A layer of mucus on the clownfish's skin makes it immune to anemone's lethal sting; when alarmed they immediately take shelter among the tentacles of the anemone. In exchange of safety from predators, the clownfish drives off intruders and preen its host, removing parasites. The peculiar colour banding pattern and swimming movements have earned them the name as 'clownfish'. Surprisingly, all clownfish are born male. There will be only one functional male and female in a colony. They have the ability to change their sex but will do so only to become female of a group.



Seba clown in
carpet anemone



Nemo clown in
tentacle anemone



Sergeant-major

The **Sergeant Major** or pintanos are colourful damselfishes. They earn their name from its brightly striped sides, which are reminiscent of the insignia of a military Sergeant Major. *Abudefduf sordidus*, *A. bengalensis* and *A. vaigiensis* are displayed in the Marine Aquarium.



Seahorses

Seahorses have elongated head and snout, flexed at right angles to the body, which resembles a horse. They feed on minute organisms and are protected by thin bony plates that are derivatives of the scales found in fishes. The seahorse swims weakly in an upright position by means of rapid, humming birdlike beats of its fins; at rest it curls its thin, prehensile tail around seaweed. One peculiarity of this fish is that the female forces the eggs into a pouch on the underside of the male, where they are fertilized and the male carries the young ones in the pouch and delivers the babies when they are ready to be released into the sea.



Powder blue tang



Yellow tang

Surgeon fishes and Tangs: They belong to the family Acanthuridae ("thorn tail"). Many of the species are brightly coloured and are popular for keeping in aquaria. The distinctive characteristics of the family are the spines, one or more on either side of the tail, which are dangerously sharp, like the ones used by surgeons and hence the name. They have a single row of teeth used for grazing on algae.

A very popular fish with hobbyist, but one that is not easy to care for, is the powder blue tang *Acanthurus leucosternon*. This gorgeous fish is sky blue overall, with a yellow dorsal fin, a white anal fin, a black head and a white band behind the head. It is perhaps the most beautiful member of this genus. Other fishes of this group include lined surgeon fish *Acanthurus lineatus*, convict surgeon fish *A. triostegus*, elongate surgeon fish *A. mata* and chocolate surgeon fish *A. pyroferus*.

Box fish and Cow fish (Family:Ostraciidae)

Boxfishes, *Ostracion cubicus* are comical little fishes that really do look like a box. They have a stiff cube shaped body that is covered with a hard bony armour. This provides protection for these slow swimming fishes. Some types of Boxfish have "horns" on their head. For this reason, they are also known as Cowfish (*Lactaria cornuta*).



Box fish



Cow Fish



Lionfish are the venomous marine fishes belonging to the genera *Pterois*, *Parapterois*, *Brachypterois*, *Ebrosia* or *Dendrochirus* of the family Scorpaenidae. They are notable for their extremely long and separated spines, and have a generally striped appearance. Species available include red lion fish *Pterois volitans*, broad barbed fire fish *P. antennata*, zebra turkey fish *Dendrochirus zebra*, black foot fire fish *Parapterois heterura* and Humpback scorpion fish *Scorpaenopsis gibbosa*.

The venom of the lionfish, delivered via an array of upto 18 needle-like dorsal fins, is purely defensive. A sting from a lionfish is extremely painful to humans and can cause nausea and breathing difficulties, but is rarely fatal.



Eels

Eels are snake like fishes that prefer to hide in the artificial cave present in a tank, usually seen glaring out and opening and closing its jaws apparently frightening visitors.

If scared, or fighting over food, they may snap and bite anything. There are over 100 species of moray eels. Those in the aquarium include *Gymnothorax flavimarginatus* (Yellow edged moray), *G. javanicus* (Giant moray), *Echidna nebulosa* (Snowflake moray).



Gold stripe wrasse

Wrasses are very beautiful and real funny fishes in the marine aquarium. The wrasses belong to the family, Labridae, many of which are brightly coloured. Wrasses come in a wide array of colours, shapes and sizes. Some of the beautiful members of this family in the aquarium are *Thalassoma janseni* (Jansen's wrasse), *T. lunare* (Moon wrasse), *Halichoeres zeylonicus* (Gold stripe wrasse), *H. melanochir* (Yellowtailed wrasse) and *Anampses liniatus* (Lined wrasse).



Moon wrasse

There are other attractive fishes in the Vizhinjam aquarium which include, moorish idol (Xanclidae), batfishes (Ephhiidae), trigger and file fishes (Ballistidae), rabbit fishes (Siganidae), squirrels (Holocentridae), porcupine fishes (Diodontidae), puffer fishes (Triodontidae), cardinal fishes (Apogonidae), groupers (Serranidae), snappers (Lutjanidae), razor fish, wrasses, hog fish, (Labridae) and parrot fishes (Scaridae), pipe fish (Syngnathidae), sucker fish (Echeididae), sweet lips (Haemulidae) and soap fishes (Serranidae).



Soft Coral

Invertebrates

Marine invertebrates displayed in the Aquarium include hundreds of animals such as crabs, lobsters and prawns besides doctor shrimp and tiger shrimps, star fishes of many sizes and shapes, sea lilies, sea urchins and feather worms, apart from an assortment of soft corals, gorgonids, sponges, and associated fauna in the reef tank.



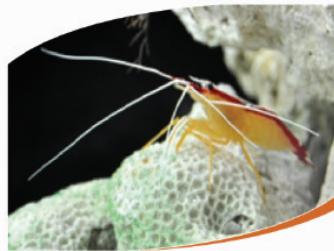
Feather Worm



Sea Fan



Carpet Anemone



Scarlet cleaner shrimp



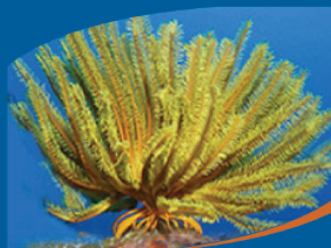
Banded cleaner shrimp



Fire shrimp



Ornate spiny lobster



Sea lily

CMFRI will continue its endeavour to share its research activities and experiences with the visitors, in respect of its activities that include exhibits, educational sessions, impact training to interested entrepreneurs and researchers as part of the Marine Aquarium research programmes. One of the great challenges of today is to educate the world's population on how to maintain and preserve our waters and marine life for future generations. Our vision is to empower ourselves to provide environmental education to millions of people and showcase the rich marine biodiversity of India.



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