



JUVENILE YELLOW BOXFISH (*Ostracion cubicus*)



PHUKET MARRIOTT RESORT & SPA,
MERLIN BEACH

HOUSE REEF MARINE GUIDE



BRAIN CORAL (*Platygyra*)



Mangroves for the Future
INVESTING IN COASTAL ECOSYSTEMS

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Over the past three years, Marriott and the IUCN have been working together nationwide on the Mangroves for the Future Project. As part of the new 5-year environmental strategy, we have incorporated coral reef ecosystems as part of an integrated coastal management plan. Mangrove forests and coral reefs are the most productive ecosystems in the marine environment, and thus must be kept healthy in order for marine systems to flourish.

An identification guide to the marine life on the hotel reef
All photos by Sirachai Arunrungstichai at the Marriott Merlin Beach reef



GREENBLOTCH PARROTFISH (*Scarus quoyi*)

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GOLDBAND FUSILIER (*Pterocaesio chrysozona*)

PART 1 IDENTIFICATION

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FALSE CLOWN ANEMONEFISH (*Amphiprion ocellaris*)



SKUNK ANEMONEFISH (*Amphiprion akallopisos*)

DAMSELFISHES (POMACENTRIDAE)

One of the most common groups of fish on a reef, with over 320 species worldwide. The most recognized fish within this family is the well-known Clownfish or Anemonefish. Damselfishes range in size from a few centimeters to 30 cm, varying immensely in color but maintaining a similar arrow like body shape.

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GOLDEN DAMSELFISH (*Amblyglyphidodon aureus*)



JEWEL DAMSELFISH (*Plectroglyphidodon lacrymatus*)



THREE-SPOT DASCYLLUS (*Dascyllus trimaculatus*)



NEON DAMSELFISH (*Pomacentris pavo*)



RACCOON BUTTERFLYFISH (*Chaetodon lunula*)



OVAL BUTTERFLYFISH (*Chaetodon trifasciatus*)

BUTTERFLYFISHES (CHAETODONTIDAE)

Small colorful disc-like fishes, whose abundance on a reef is an indicator of reef health. Bright yellow is the featured color in this family, with varying stripes and color patterns, many species have a false 'eyespot' near the tail to confuse predators. The name 'Chaetodont' refers to the bristle like teeth found in all species in the family.

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COLLARE BUTTERFLYFISH
(*Chaetodon collare*)



INDIAN VAGABOND BUTTERFLYFISH
(*Chaetodon decussatus*)



TRIANGULAR BUTTERFLYFISH
(*Chaetodon triangulum*)



JUVENILE ANDAMAN BUTTERFLYFISH
(*Chaetodon andamanensis*)

WRASSES (LABRIDAE)

Predominantly brightly colored fish ranging in shape and size. Carnivorous fish that use powerful jaws to feed on worms, sea urchins, and corals, among other animals.



MOON WRASSE (*Thalassoma lunare*)



JANSEN'S WRASSE (*Thalassoma janseni*)



BLUESTREAK CLEANER WRASSE (*Labroides dimidatus*)

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SCORPIONFISH (SCORPAENIDAE)

A diverse family of fishes, their name is derived from their venomous spines, which provide protection from predators, and also allow the fish to camouflage into the reef. They are nocturnal predators that feed on crustaceans and small fish using ambush techniques.



JUVENILE LIONFISH (*Pterois volitans*)



TASSLED SCORPIONFISH (*Scorpaenopsis oxycephala*)

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PARROTFISHES (SCARIDAE)

Similar to their terrestrial namesake, Parrotfish are vibrantly colored with a beak-like jaw of fused teeth. They can reach up to 2 meters and they feed on coral and limestone substrates, making them a major contributor to the fine, white sand on beaches. At night they create a mucus sack around their body while they sleep, and can be seen nestled into crevices of the reef.



REDLIP PARROTFISH (*Scarus rubrobiaceus*)



BLUEBARRED PARROTFISH (*Scarus ghobban*)



PALE BULLETHEAD PARROTFISH (*Chlorurus capistratoides*)



GREENBLOTCH PARROTFISH (*Scarus quoyi*)

SURGEONFISHES (ACANTHURIDAE)

Characterized by a razor sharp spine on either side of the tail base, which is often referred to as the scalpel, giving this family their common name. Can be identified by their oval, flat side profile, and are generally found in shallow reef areas, from 2 meters deep. Fish can range from 20-100cm in size.



POWDER BLUE SURGEONFISH (*Acanthurus leucosternon*)



STRIPED SURGEONFISH (*Acanthurus lineatus*)



CONVICT TANG (*Acanthurus tristegus*)



YELLOWFIN SURGEONFISH (*Acanthurus xanthopterus*)



BLACKSPOTTED PUFFER (*Arothron nigropunctatus*)



STAR PUFFER (*Arothron stellatus*)

PUFFERFISHES (TETRADONTIDAE)

This family is characterized by a unique ability to inflate itself to ward off predators. Generally nocturnal and found living in coral, rocks or sand. They use their teeth to crush the shells of their crustacean prey.

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SPOTTED TOBY (*Canthigaster solandri*)



BLACK BLOTCHED PORCUPINEFISH (*Diodon liturosus*)



SPOTTED TRUNKFISH (*Ostracion meleagris*)

GROUPERS (SERRANIDAE)

Identified by their torpedo shaped body and prominent jaws with canine teeth, consistent with their carnivorous diet. They are top reef predators, hiding amongst the reef to ambush their prey.



CORAL HIND (*Cephalopholis miniata*)



CHOCOLATE HIND (*Cephalopholis boenak*)

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FUSILIERS (CAESIONIDAE)

Fast-swimming, schooling species, with a slender streamlined body and forked tail. Feed on fast moving plankton, especially during tidal changes.



YELLOWBACK FUSILIER (*Caesio teres*)



GOLDBAND FUSILIER (*Pterocaesio chrysozona*)

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MOORISH IDOL (*Zanclus cornutus*)



REDCOAT (*Sargocentron rubrum*)

OTHER FREQUENTLY SEEN FISH SPECIES



INDIAN BANNERFISH (*Heniochus pleurotaenia*)



PICKHANDLE BARRACUDA (*Sphyræna jello*)



FIVE-LINED SNAPPER (*Lutjanus quinquelineatus*)



SAND LIZARDFISH (*Synodus dermatogenys*)

OTHER FREQUENTLY SEEN FISH SPECIES



TRUMPETFISH (*Aulostomus chinensis*)



GIANT MORAY (*Gymnothorax javanicus*)

BRAIN CORAL (*Symphyllia radians*)BRANCHING CORAL (*Acropora*)

CORALS

Corals are the building blocks of reef ecosystems, providing the structure on which other animals grow and live. Corals are animals that build a limestone skeleton, which create coral reefs over long time spans. Corals host symbiotic plants called zooxanthellae, allowing them to create sugar from sunlight, and also giving them their vibrant colors.

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FINGER CORAL (*Porites lutea*)



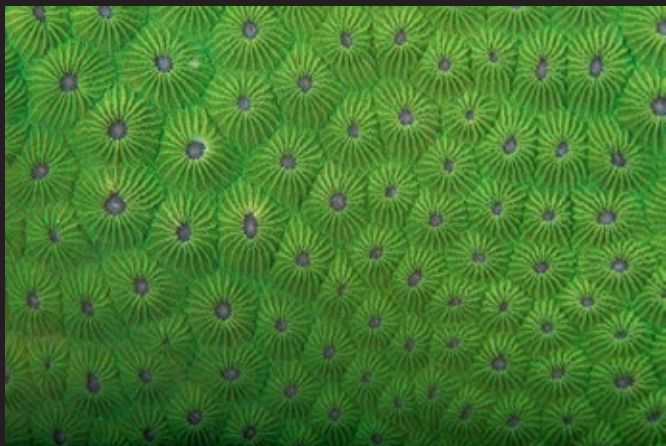
CAULIFLOWER CORAL (*Pocillopora eydouxi*)



HEDGEHOG CORAL (*Echinopora lamellosa*)



BRAIN ROOT CORAL (*Lobophyllia hemprichii*)



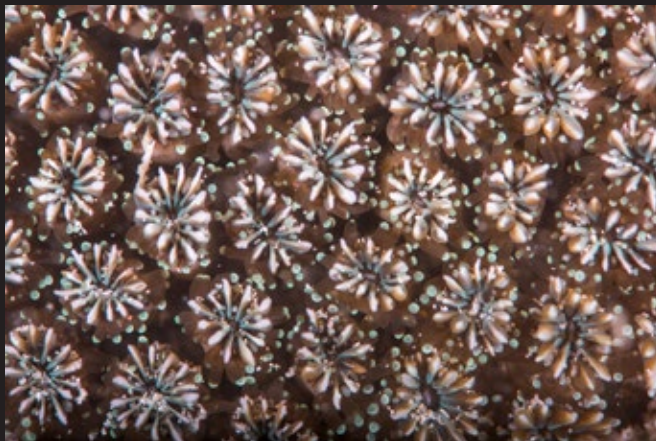
HELMET CORAL (*Diploastrea heliopora*)



BUBBLE CORAL (*Plerogyra sinuosa*)



BUBBLE CORAL (*Physogyra lichtensteni*)



TOOTH CORAL (*Galaxea fascicularis*)



Crown of Thorns Starfish (*Acanthaster planci*)

BOTTOM-DWELLING ANIMALS

ECHINODERMS

Echinoderms are named for their spiky skin ('echino' meaning hedgehog and 'derm' meaning skin). They often have radial symmetry, with five or more arms radiating from a central disk. They are found at most ocean depths, and eat a variety of food sources.

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Black Sea Cucumber (*Holothuria atra*)



Cushion Star (*Culcita novaeguineae*)



Black and White Sea Urchin (*Diadema savignyi*)



Feather Star (*Stephanometra echinus*)

CRUSTACEANS

Crustaceans belong to the phylum Arthropoda, which includes the land-dwelling insects, spiders, scorpions and others. They are incredibly diverse, armored insects with a soft inner body. They have jointed limbs, often with pincer-like claws.



Porcelain Crab (*Neopetrolisthes maculatus*) with eggs



Guard Crab (*Trapezia* spp.)



Hermit Crab (*Paguroidea* spp.)



Marble Shrimp (*Saron* spp.)



PART 2 **CONSERVATION**

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PART 2

CONSERVATION

Coral reefs are one of the most biodiverse ecosystems on the planet, following only rainforests in the number of species that they host. Corals around the world are currently dying at an unprecedented rate due to human activities, such as overfishing and land based development, and global issues such as climate change and ocean acidification. Locally, proper management and reef conservation can increase coral cover, and active reef restoration can aid in recovery of lost corals.

Phuket Marriott Resort and Spa, Merlin Beach has collaborated with the International Union of the Conservation of Nature (IUCN), and Sea Bees Diving to work together to conserve and restore the unique reef ecosystem in front of the hotel. The “house reef” is one of the healthiest nearshore coral reefs in Phuket, with high coral cover and diversity, which recruits a range of fish species and other reef-dependant organisms.

Despite this, one of the main threats to coral and fish on the reef is discarded fishing gear, left behind by local fishermen, or washed up from offshore activities. These nets become wrapped around live corals, with the rough abrasion eventually killing them. The nets are also a hazard to mobile marine life, entangling and killing animals that come into contact with them. The photos below were taken after three Indian Bannerfish (*Heniochus pleurotaenia*) and a Dark Finger Reef Crab (*Etisus dentatus*) were found entangled in a freshly abandoned net. The animals were all still alive, and released back to the reef, while the net was taken to land to prevent further damage. Weekly reef surveys and fishing gear removal can decrease the damage done, and raise awareness about the effects of fishing on these ecosystems.

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Coral are also susceptible to physical damage from boat anchors and walking on the reef. Boats that anchor on the reef, for either fishing or snorkeling, drop anchors that can destroy corals, which may have taken more than 50 years to grow to such sizes. Our team works to educate hotel guests about their effects on corals, and encourages guests to go swimming only at high tide, and to be careful when snorkeling with long flippers.



ABANDONED ANCHOR ON THE REEF



ACROPORA CORAL THAT WAS
LIKELY DAMAGED BY ANCHORING

When broken into many pieces, whether by anchors or feet, coral fragments will usually die unless they are quickly secured back on to the reef. While diving, we will look for broken coral fragments, which can be easily wedged into holes on the reef, and will reattach and grow over time. This is an easy way to increase coral cover on the reef, because without these actions, the broken fragments will quickly die.



DIVERS 'REPLANTING' BROKEN CORAL FRAGMENTS ON TO THE REEF

Future plans to increase the cover of corals on the reef include an on-site aquarium located at the beachfront Reef Education Center, where corals will be grown from eggs and juvenile anemonefish will be raised until they are ready to be released on to the reef. Guests will be encouraged to participate in the outplanting and release of these animals, which will increase the abundance of corals and anemonefish, contributing to a healthier overall ecosystem. To learn more about this initiative, visit our Reef Education Center located near the beachfront.



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SEA BEES DIVING

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At Marriott International we are committed to the global environment and in particular sustaining the ecosystems that surround our properties. Our global environmental stewardship program is called the "Spirit to Preserve" and engages our guests, associates and communities in meaningful environmental programs and activities. Together with our environmental partner, the International Union for the Conservation of Nature, we work together to ensure the property's ecosystems are sustained for your present and future enjoyment.



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