

Expanded
4th Edition Ebook



CARIBBEAN REEF LIFE

- A Field Guide for Divers -
by Mickey Charteris



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CARIBBEAN
REEF LIFE

- *A Field Guide for Divers* -
4th Edition by Mickey Charteris



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PHOTOGRAPHY CREDITS:

All photographs in this book were taken by **Mickey Charteris** except the following:

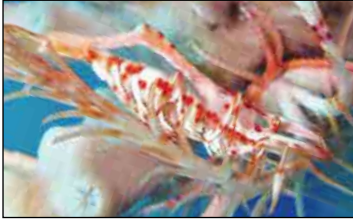
Ted Anger: Orange Filefish. **Sue Beerman**: Southern Stargazer. **Chelle Blais**: Great Hammerhead, Lemon Shark, Caribbean Sharpnose Shark. **Martin Cabrera Deheza**: Burnt Placida. **Carlos Estape**: Gold-fringed Cerberilla, Tiger Goby, Checkered Shy Blenny, Banded Jawfish, Stippled Clingfish, Rock Hind. **Stacey Henderson**: Masked Hamlet. **Peter Hughes**: Striated Frogfish. **Clement Ignacio**: Yellow-Lined Flatworm, Warty Seacat, Jeweled Aglaja, Music Volute, Yellownose Goby, Yellowline Goby, Blackbelly Blenny pale, Bandtail Searobin, Leopard Searobin, Lined Seahorse. **Jeff Joel**: Blacktip Shark. **Rino Jackson**: Crossbearer Hermaea, Oasis Aeolid. **Irma Korb**: Caribbean Manta. **Frank Krasovec**: Sharknose Goby, Ocellated Frogfish. **Kal Lin**: Wavy Marginella. **Alicia McKowen**: Lined Flatworm. **Allison Morgan Estape**: Broadleaf Seagrass, Two-bar Triplefin, Banded Blenny, Spotted Dragonet, Golden Hamlet. **Chris Paparo**: Whitelined Toadfish, Whitespotted Toadfish. **Caroline Power**: Oceanic Whitetip Shark. **Ricardo Ramos**: Tiger Shark, Bull Shark. **Keiran Reeves**: Dusky Pipefish. **Mauricio Riquelme**: Emerald Clingfish. **Brandon Rundquist**: Lagoon aerial. **Vance Solseth**: Mutton Hamlet. **Robert Stansfield**: Orange Marginella, Cozumel Toadfish. **Carmen Toanchina**: Black Brotula. **Everett Turner**: Bluegold Glass Blenny female. **Virginia Worn-Ross**: Splendid Toadfish.

AUTHOR'S NOTES:

I would like to thank all the photographers who have contributed to this book, as well as my dive buddies over the years for sharing their finds, especially the late great **Rino Jackson** for many of the sea slugs in this edition. Thanks to the late **Brian Quinn** for his proof-reading and **Kal Lin** for his help with the indexes. Special thanks still go to **Elizabeth Walters** for all her painstaking work researching, fact-checking and editing the previous edition that this book is based on.

NOTES ON SPECIES IDENTIFICATION:

Many of the species in this book were originally described long before the advent of scuba. In many ways marine taxonomy is still in its infancy. Now that coral reefs have been opened up to more direct research, it is becoming clear that there are many species still waiting to be named and described. Regional variations abound and many reef creatures are currently being grouped into “species complexes” with some shared features and others that cannot easily be seen while diving. Every attempt has been made to keep the identifications as accurate and updated as possible. It is difficult, if not impossible, to identify individual species just from photographs, but sometimes photographers can help scientists describe and even discover new species.



In 2009, while collecting photographs for the first edition, I came across this tiny shrimp living within the arms of the Swimming Crinoid (p. 147). Taxonomists were unable to identify it, and specimens were collected and sent to Oxford Museum of Natural History for further study. It proved to be new to science and was officially given its name in 2014, *Periclimenes rincewindi* (p. 252). There are still plenty of new discoveries to be made in the Caribbean.

This shrimp was described using the time-honored method of microscopes and line drawings of preserved specimens, where colors are often lost. The new trend is to use DNA analysis of specimens and it is revealing some surprising results. The Bahama Simnia (p. 223), with its characteristic orange stripe, is now considered the same species as the highly variable West Indian Simnia, *Cymbovula acicularis*. There is not always agreement: a study in 2017 claimed that the Fingerprint Cyphoma (p. 223) was so genetically similar to the iconic Flamingo Tongue that both should be described as *Cyphoma gibbosum*, surprising many conchologists. A more recent genetic study in 2020 re-established it as a distinct species again: *Cyphoma signatum*. No doubt many species will continue to be re-shuffled, and will be dealt with in future editions.



Bahama Simnia



West Indian Simnia



Fingerprint Cyphoma



Flamingo Tongue


Genetic testing has also found some new species that have been right under noses all along. The “Common Octopus” is now recognized as two distinct species in the Caribbean, *O. insularis* and *O. americanus* (p. 243). Now that we know what to look for, the difference is visible on dives.

NOTES ON SPECIES NAMES:

Both the common name and scientific name have been given for each species. The scientific names seem to be constantly changing, as researchers and taxonomists get a better understanding of marine diversity in the Caribbean. The status of all scientific names has been checked against the World Register of Marine Species, valid as of mid-2022, or by using recently published scientific papers, as there is often disagreement among experts over the status of certain species. If a photograph wasn't able to be identified at the species level only the genus is given, followed by the abbreviation “sp.” If it represents a complex, or one of a possible number of species, it is followed by the abbreviation “spp.” The abbreviation “cf.” is used to compare similar species. If no genus could be assigned to a photograph only the family name is given.

Many scientists shun the use of common names because they can be loosely applied to different species and may vary from region to region. They are used in this book because I believe they make the reef more accessible to the vast majority of divers in the Caribbean and many seem to remain more constant over time. Where no generally accepted common name could be found, I have taken the liberty of assigning one, either by translating the scientific name or by using distinguishing characteristics.



 The full story of a Caribbean reef actually begins on land, with an amazingly adaptable group of trees known as mangroves. They live half in the ocean and half on land, with a root system that stabilizes them in the loose salty soil. Each species of mangrove is modified to deal with salt water in different ways. The roots of Red Mangroves can literally drink up the seawater using a specialized membrane that keeps out salt. Black Mangroves have thin tubes extending up from the water to take in oxygen at high tide. White Mangroves have small glands on their leaves for expelling excess salt. The densely tangled roots play an important role in keeping nearby reefs healthy; they act as natural sediment traps, stopping land-based silt and runoff from settling on delicate corals. This allows the corals to have access to the most important element for their growth: sunlight.



Traditionally, slow-growing mangroves have been cut for charcoal, but in modern times it is done for coastal development. Countless acres of this unique habitat are being cut down to make way for holiday homes and resorts. By cutting mangrove forests we are seriously limiting the biodiversity on nearby coral reefs. The root system is like a nursery for the reef and is an essential part of the life cycle of many fishes. For some species there can be up to 25 times more fish next to mangrove forests. A good example is the Rainbow Parrotfish (p. 380). Studies have shown that in areas where deforestation of mangroves has taken place, the population of this fish can die out completely.

MANGROVES : MARINE PLANTS



RED MANGROVE

(*Rhizophora mangle*) 24 m / 80 ft

Long prop roots from the water, supporting the tree. Dark green leaves. Found growing closest to the shoreline.



BLACK MANGROVE

(*Avicennia germinans*) 20 m / 66 ft

Dark brown scaly bark. Shiny green leaves. Surrounded by short aerial roots. Found inshore of Red Mangroves.



WHITE MANGROVE

(*Laguncularia racemosa*) 15 m / 50 ft

Brown to reddish scaly bark. Leathery yellowish-green leaves with rounded tips. Found on higher land.



BUTTONWOOD

(*Conocarpus erectus*) 12 m / 40 ft

Smaller than the true mangroves. Distinctive clumps of rounded berries. Found furthest from the shoreline.



The importance of mangrove forests is slowly being understood in the Caribbean for their role in keeping local fish populations healthy and for breaking up the storm surge that can damage coastal communities. Tourists are becoming increasingly interested in visiting these ecosystems as well, hopefully allowing local authorities to see the benefit of protecting them. Coral reefs and mangrove forests are two environments that exist side by side, closely interwoven.



Excess salt on leaves.




Juveniles hiding in prop roots.



Mangrove seed pods.



 Beds of Turtle Grass play an important role in a reef's complex ecosystem. They form not only shelter but also the primary food source for many animals, such as the Green Sea Turtle (p. 447). The extensive root system holds the sand in place and allows sediments and nutrients to be stored at the base of the reef ecosystem. It is also an important spawning area and nursery; many juveniles make their home in the safety of the lagoon before moving out into deeper water. Turtle Grass relies on sunlight for photosynthesis, absorbing carbon dioxide and producing oxygen. Lagoons are like the lungs of a reef ecosystem, keeping the water clean and well oxygenated: each square meter of seagrass can generate up to ten liters of oxygen every day.

Seagrasses are actually flowering plants and can reproduce sexually. There are separate flowers for each sex. In springtime the male flower, with its nine bright yellow petals, produces pollen. The female flower is pollinated through the water, or by small invertebrates like the fireworm seen feeding on the pollen below. Each fruit of the Turtle Grass plant has up to three seeds. They can float for hundreds of kilometers before sprouting and taking root in a new area.



Male flower.



Female flower.



Sprouting seed.

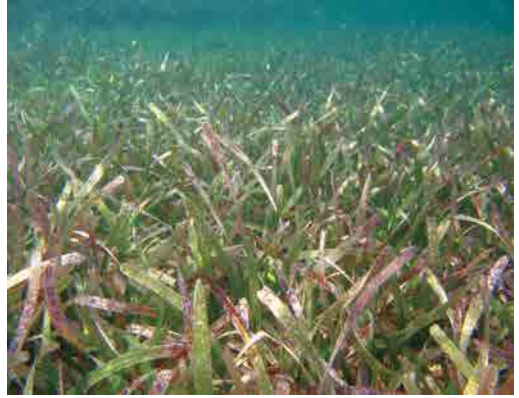
SEAGRASSES : MARINE PLANTS



BROADLEAF SEAGRASS

(*Halophila stipulacea*) 5 cm / 2 in

Tall leaves with dark branching veins. Invasive species from the Red Sea now spreading through the Caribbean.



TURTLE GRASS

(*Thalassia testudinum*) 60 cm / 2 ft

Flat thin green leaves about 1.5 cm wide, with rounded tips. Covers vast areas, dominating other seagrasses.



STAR GRASS

(*Halophila engelmanni*) 10 cm / 4 in

Tall bright green oval leaves. Three to four close-set pairs growing on a long upright stalk. Grows on runners.



MIDRIB SEAGRASS

(*Halophila baillonis*) 3 cm / 1.2 in

Short dark green leaves with an elongated oval shape, growing in pairs. Grows on a short stalk on runners.



SHOAL GRASS

(*Halodule wrightii*) 25 cm / 10 in

Dark green flattened blades, narrow at the base. Found growing in loose clusters in shallow seagrass beds.



MANATEE GRASS

(*Syringodium filiforme*) 46 cm / 1.5 ft


Thin tubular green leaves growing in clumps that can cover a wide area. Often found among Turtle Grass.



FUZZY CAULERPA

(*Caulerpa verticillata*) 25 cm / 10 in

Tiny leaves in a delicate spiral pattern of light green with pale centers. Grows on long runners to form flat bushes.

 Marine plants are some of the most important organisms on Earth. First there are the algae that we can't even see: the tiny free-floating phytoplankton. They produce 70-80% of all the oxygen we breathe. Then there are the tiny algae that live inside the flesh of the corals themselves, called zooxanthellae. These use sunlight to photosynthesize about 80% of a coral's food, and without them the reef could not grow. Finally there are the large plants that a diver can actually see: the macroalgae. Essential to the ecosystem, just like plants on land, macroalgae form the base of the reef's food chain. Vital nutrients, absorbed from the seawater and stored in their tissues, are made available to all higher life-forms on the reef, from tiny invertebrates to the fishes themselves.

The balance between plants and corals on any given reef is a delicate one that has taken countless generations to perfect. Schools of herbivores, like the Blue Tangs on the right, keep algae levels in check by constantly traveling and grazing on the plants. Without this steady pruning the algae would soon overgrow the coral and no sunlight would get to the polyps, starving them of food. Herbivores greatly outnumber carnivores on a reef. Smaller fishes eat the algae, get eaten by larger fishes, and so on. At the base of all this activity is a tiny plant cell, silently working in the sunlight to feed both itself and the reef.



GREEN ALGAE : MARINE PLANTS



CACTUS TREE ALGA

(*Caulerpa cupressoides*) 25 cm / 10 in

Short bushy tufts of upright branches from low runners. Small irregular branchlets give a rough appearance.



SERRATED ALGA

(*Caulerpa webbiana*) 2.5 cm / 1 in

Dense bright green clumps of short stalks, with lateral branchlets forming serrated edges. Grows on runners.



GREEN BLADE ALGA

(*Caulerpa prolifera*) 15 cm / 6 in

Elongated dark green oval blades growing on runners. Short slender stalks. Commonly found on seagrass beds.



SAWBLADE ALGA

(*Caulerpa serrulata*) 5 cm / 2 in

Short narrow bluish-green leaves with serrated edges. Grows in dense tangled clumps from green runners.



FLAT GREEN FEATHER ALGA

(*Caulerpa mexicana*) 20 cm / 8 in

Dark green leaves with wide densely packed branchlets. Grows upwards from thick green runners on the sand.



GREEN FEATHER ALGA

(*Caulerpa sertularioides*) 20 cm / 8 in

Tall erect feather-shaped leaves of light green, with fine branchlets. Grows from thin pale runners on the sand.



GREEN GRAPE ALGA

(*Caulerpa racemosa*) 10 cm / 4 in

Dense clumps of small green balls growing from pointed runners, giving the appearance of clusters of grapes.



Many species of green algae grow on runners that can extend across the reef. This allows them to spread over a larger area before re-attaching to the substrate. In the competition for space and sunlight on a healthy reef, the faster-growing plants have an advantage over corals.



GREEN HELMET ALGA

(*Caulerpa nummularia*) 2 cm / 0.8 in

Small clusters of green stalks, growing upward from the reef, with swollen rounded tips. Forms loose bunches.



STALKED GRAPE ALGA

(*Caulerpa lamourouxii*) 15 cm / 6 in

Elongated stalks with rounded or club-like branchlets, growing alternately in a single plane. Prefers shallows.

GREEN ALGAE : MARINE PLANTS



DEAD MAN'S FINGERS

(*Codium isthmocladum*) 20 cm / 8 in

A bushy growth of rounded dark green branchlets, often covered in very fine hairs. Usually found in the shallows.



FLESHY TWIG ALGA

(*Codium repens*) 2.5 cm / 1 in

Fleshy dark green leaves with rounded edges, often overlapping to form a thick tangle. Two-lobed branchlets.



SHAGGY BRANCH ALGA

(*Dasycladus vermicularis*) 6 cm / 2.4 in

Fuzzy cylindrical branches in dense clusters. Found growing on hard substrates in shallow, sheltered areas.



CREEPING FUZZ ALGA

(*Codium intertextum*) 5 cm / 2 in

Smooth fleshy mats of round creeping and overlapping lobes. Dark green and covered in short fine pale hairs.



MUCUS TIP ALGA

(*Neomeris mucosa*) 4 cm / 1.6 in

Green calcified stalks with darker tips. Grows in clusters, but not fused. Usually only found in very shallow water.



FUZZY TIP ALGA

(*Neomeris annulata*) 4 cm / 1.6 in

Short cylindrical white stalks with green tips. Grows in dense clusters, fused at the base. Tips appear fuzzy.



GREEN MERMAID'S WINEGLASS

(*Acetabularia calyculus*) 4 cm / 1.6 in

Dark green cup shape on a long slender stalk. Rounded ridges radiate from the center to form bulbous edges.



The cup of each of these tiny plants is strengthened by calcium absorbed directly from the seawater, forming calcium carbonate. In their small way they add to the sand patches and beaches of the Caribbean each year. Amazingly, the entire structure is formed by one single plant cell.



WHITE MERMAID'S WINEGLASS

(*Acetabularia crenulata*) 4 cm / 1.6 in

Round white cup shape on a long white stalk. Rounded ridges with pale valleys radiating from the center.



PALE MERMAID'S WINEGLASS

(*Acetabularia schenckii*) 4 cm / 1.6 in

Tall pale green cups on slender green stalks. Often with white highlights. Found growing in dense clusters.

GREEN ALGAE : MARINE PLANTS



ELONGATED FEATHER ALGA

(*Bryopsis plumosa*) 25 cm / 10 in

Tall cylindrical stalks of light green, tipped with darker green feather-like branchlets. Grows in dense clumps.



FRAGILE FEATHER ALGA

(*Bryopsis pennata*) 5 cm / 2 in

Small dense clusters of light green feather-shaped leaves with pointed tips. Thin pale green central stalk.



BRANCHING BUBBLE ALGA

(*Ernodesmis verticillata*) 10 cm / 4 in

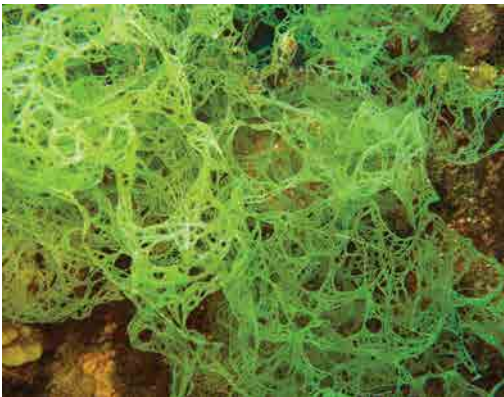
Rounded clumps of single-celled tubular branchlets, narrow at the base and branching out near the top.



PAPYRUS PRINT ALGA

(*Anadyomene stellata*) 10 cm / 4 in

Thin rounded green blades with lighter veins running towards the edges in a distinctively star-shaped pattern.



GREEN NET ALGA

(*Microdictyon umbilicatum*) 90 cm / 3 ft

A fine network of thin tubular threads that interconnect. Pale to dark green. Can cover large areas of the reef.



SHINY SEAGRASS

(*Valoniopsis pachynema*) 20 cm / 8 in

Dense clusters of shiny dark green filaments, growing to form a dense cushion. Found in calm shallow areas.



ELONGATED SEA PEARLS

(*Valonia macrophysa*) 2 cm / 0.8 in

A spreading mat of pale to olive-green rounded or oval bubble shapes. Distinctive silvery sheen on the surface.



Each Sea Pearl is actually a single plant cell, and one of the largest single cells on Earth. It is filled with water and attached to the reef by tiny hair-like filaments. They can often be seen rolling around the reef after a storm. They can be covered by a thin layer of Lavender Crust Alga (p. 35).



SEA PEARL

(*Valonia ventricosa*) 5 cm / 2 in

Large rounded dark to olive-green bubbles, often with a silvery sheen. May grow individually or in small clusters.



CREEPING BUBBLE ALGA

(*Valonia utricularis*) 2.5 cm / 1 in

Clumps of dark green elongated bubbles, randomly branching with bulbous tips. Found in sheltered areas.



MERMAID'S FAN

(*Udotea luna*) 20 cm / 8 in

Broad fan-shaped green blades on a single short stalk.
Distinctive lines radiate to the edge of the blades.



RUFFLED BLADE ALGA

(*Udotea flabellum*) 15 cm / 6 in

Narrow fan shape extending out from a single stalk.
Thick-walled. Dark green with pale edges on the blade.



CEMENTED BLADE ALGA

(*Udotea conglutinata*) 12 cm / 4.8 in

Calcified green blade with a felt-like texture, as wide as it is tall. Narrow stalk. Often found in deeper sandy areas.



BALLED BLADE ALGA

(*Udotea wilsonii*) 13 cm / 5 in

Multiple fan-shaped blades radiating from a central axis.
Forms a ball shape on a short stalk. Prefers sandy areas.



GREEN BUBBLE WEED

(*Dictyosphaeria cavernosa*) 5 cm / 2 in

Light green bulbous shapes with small rounded knobs giving them a cobbled texture. Often found in clusters.



MERMAID'S TEACUP

(*Udotea cyathiformis*) 20 cm / 8 in

Thin ragged-edged cup of light green, attached by a thin stalk. Often found in sandy areas in large groupings.



PINECONE ALGA

(*Rhypocephalus phoenix*) 10 cm / 4 in

Thin plate-like leaves growing upwards in a concentric pattern and forming a ball shape. Often pointed at the tip.



Just like plants on land, marine plants need lots of sunlight in order to grow. Algae will often grow in wide clusters of branching stalks, spreading out to expose as much surface area as possible to the available sunlight. Green algae are most common on shallower reefs.



RAGGED PINECONE ALGA

(*Rhypocephalus longifolius*) 13 cm / 5 in

Flat olive-green leaves growing upwards from a central stalk. Leaves are not as dense and end in a blunt top.



ELONGATED PINECONE ALGA

(*Rhypocephalus brevifolius*) 13 cm / 5 in

Short dense dark green leaves growing upwards from a central stalk. More elongated than similar species.



PADDLE BLADE ALGA

(*Avrainvillea longicaulis*) 10 cm / 4 in

Spongy paddle-shaped dark green blade with a distinctively thickened stalk. Prefers clear shallow water.



SAUCER BLADE ALGA

(*Avrainvillea asarifolia*) 15 cm / 6 in

Broad fan-shaped dark green blades with a spongy texture. Lower edge turns upward to attach to the stalk.



FLAT-TOP BRISTLE BRUSH

(*Penicillus pyriformis*) 13 cm / 5 in

Tightly packed filaments end in a flat top, forming an inverted cone. Elongated stalk. Found in sandy areas.



BRISTLE BALL BRUSH

(*Penicillus dumetosus*) 15 cm / 6 in

A rounded ball shape of tightly packed filaments growing from a stout green stalk. Often a darker shade of green.



NEPTUNE'S SHAVING BRUSH

(*Penicillus capitatus*) 15 cm / 6 in

Tufts of bristle-like light green branchlets growing from a common stalk. White skeletal material on the surface.



JOINTED STALK ALGA

(*Halimeda monile*) 15 cm / 6 in

Tall bunches of calcified and segmented stalks growing upwards from a common base. Found in the shallows.



LARGE LEAF HANGING VINE

(*Halimeda copiosa*) 60 cm / 2 ft

Long chains of rectangular dark green segments, joined down the middle by a single stalk. Found in dense bushes.



Halimeda algae are some of the most common on the reef. They absorb calcium from the seawater and use it to make a framework around which the plant can grow. Having more inorganic material in their structure also helps to deter herbivores from feeding on them.



SMALL LEAF HANGING VINE

(*Halimeda goreau*) 30 cm / 1 ft

Chains of smaller rectangular green segments, joined down the middle by a single stalk. Forms dense bushes.



CRYPTIC ALGA

(*Halimeda cryptica*) 25 cm / 10 in

Bushy clumps of thin fan-shaped green leaves with distinctly pointed three-lobed blades. Found in crevices.



WATERCRESS ALGA

(*Halimeda opuntia*) 25 cm / 10 in

Dense clumps of rounded three-lobed leaves. Dark to yellowish-green. Found in darker areas of the reef.



THREE FINGER LEAF ALGA

(*Halimeda incrassata*) 25 cm / 10 in

Chains of thick calcified dark green segments with three distinct lobes. Forms low bushes from a common base.



BULBOUS LEAF ALGA

(*Halimeda lacrimosa*) 5 cm / 2 in

Low chains of calcified bead-like spheres with no visible stalk in between. May attach to sand or rocky substrates.



CACTUS LEAF ALGA

(*Halimeda tuna*) 25 cm / 10 in

Thin rounded fan-shaped blades growing outward in a single plane from a common stalk. Green to yellowish.



BRANCHING LEAF ALGA

(*Halimeda simulans*) 15 cm / 6 in

Oval to kidney-shaped calcified green blades growing in a single plane. Prefers shallow waters near mangroves.



ROBUST LEAF ALGA

(*Halimeda scabra*) 25 cm / 10 in

Calcified dark green blades growing in a single plane or forming into a low bush. Thicker than similar species.



Sargassum is a unique group of plants, kept upright by air-filled floats that allow them to grow closer to the sunlight. Some are attached to the reef year-round but most of it lives free-floating on the surface. Large dense mats of sargassum can be blown across reef-tops and bring a whole complex biosphere with them, contributing to the biodiversity of a local reef. Many juvenile fish species and even baby turtles use sargassum as a safe haven until they are large enough to fend for themselves.

Other species of fish and invertebrates have evolved to make this floating raft a permanent home. The Sargassumfish on the right is a perfect example. It is in the frogfish family, relying on stealth and camouflage to hunt for both the juvenile visitors and the local residents of sargassum mats. There are also shrimps, crabs and even a species of pipefish (p. 347) and a nudibranch (p. 195) that are found nowhere else in the Caribbean.



The bulk of free-floating sargassum originates in the Gulf of Mexico, which produces over a million tons a year. It reproduces asexually, by fragmentation, as it moves around the Caribbean, though each individual plant has a life span of less than a year. It has recently become much more prevalent and problematic, possibly due to increased nutrients from agricultural runoff and higher sea temperatures. The hydrogen sulphide released from decaying sargassum is becoming a nuisance to tourist areas.

BROWN ALGAE : MARINE PLANTS



SARGASSO WEED

(*Sargassum natans*) 45 cm / 1.5 ft

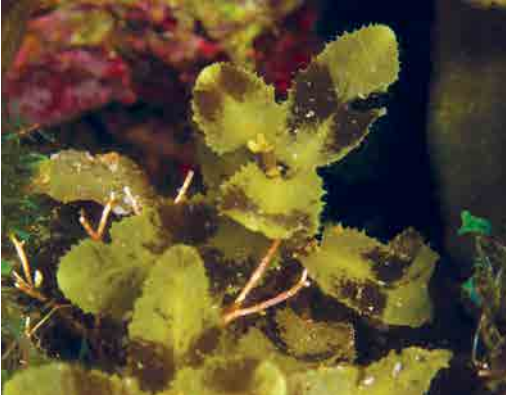
Narrow brown blades with serrated edges. No prominent central vein. Gas floats with distinctively pointed tips.



SARGASSUM SEAWEED

(*Sargassum fluitans*) 90 cm / 3 ft

Long serrated blades with pale central vein. Gas floats are rounded. Gathers in wide mats of floating vegetation.



SARGASSUM ALGA

(*Sargassum acinarium*) 4.5 cm / 1.8 in

Tough leathery greenish-brown leaves with darker brown blotches. Gas floats connect by a flattened stalk.



WHITE-VEIN SARGASSUM ALGA

(*Sargassum hystrix*) 40 cm / 16 in

Elongated oval leaves with a whitish central vein. Olive to light brown. Often found growing in small clusters.



FLAT-BLADE SARGASSUM ALGA

(*Sargassum platycarpum*) 45 cm / 1.5 ft

Thin leaves with toothed edges are sparsely distributed along a stalk attached to the reef. Fewer gas floats.



WIRY SARGASSUM ALGA

(*Sargassum filipendula*) 60 cm / 2 ft


Sparse elongated brown leaves, often forking near the base. Attaches to the reef with a strong conical holdfast.



SERRATED STRAP ALGA

(*Dictyota ciliolata*) 20 cm / 8 in

Bushy structures with flat blades. Distinctively small marginal teeth. Yellow to brownish with light banding.

 Brown algae get their color from a pigment called fucoxanthin. They are very fast-growing and potentially the most harmful algae to the reef in areas with too much coastal development, where levels of nutrients in the seawater from human runoff are unnaturally high. Brown algae thrives under these conditions and can smother the lagoons and shallow reefs by stopping sunlight from getting to the corals. Higher water temperatures will also give macroalgae an advantage.

Algal blooms are a common occurrence on a reef, especially in late summer, and usually coral reefs can recover. But given too much opportunity for growth, algae can quickly upset the balance of a healthy reef ecosystem. The primary producers on coral reefs can easily become their major threat.





Y-BRANCHED ALGA

(*Dictyota humifusa*) 5 cm / 2 in

Flat interwoven mat of stubby notched blades. Light brown to green, often with a brilliant blue iridescence.



NOTCHED BLADE ALGA

(*Dictyota crenulata*) 4 cm / 1.6 in

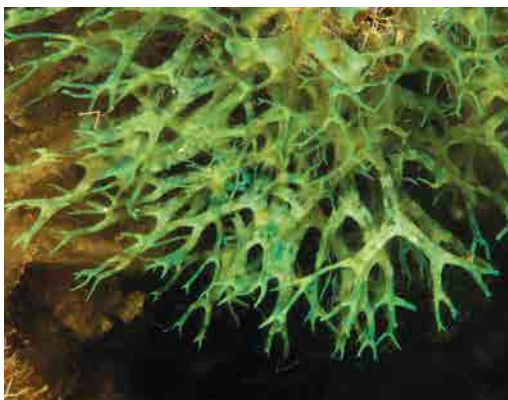
Twin-lobed pale brown blades growing in small clusters. The tips of each blade are edged in a lighter brown.



FLOWER BLADE ALGA

(*Dictyota menstrualis*) 2.5 cm / 1 in

Dense clusters of twin-lobed dark brown blades edged in yellow, with yellow speckles. Can cover large areas.



NARROW BLADE ALGA

(*Dictyota pulchella*) 10 cm / 4 in

Clusters of thin flat leaves becoming narrower with each branching. Olive-brown with a bright green iridescence.



WESTERN TUBULAR ALGA

(*Cladosiphon occidentalis*) 30 cm / 1 ft

Undulating gelatinous mass of soft tubular dull brown stalks covered with fine filaments. Can cover large areas.



ENCRUSTING FAN LEAF ALGA

(*Lobophora variegata*) 15 cm / 6 in


Variable thin fan-shaped blades. Shades of green to light brown. Often overlapping and covering large areas.



YELLOW BLADE ALGA

(*Dictyota bartayresiana*) 2.5 cm / 1 in

Small twin-lobed yellow blades with thin olive-brown bands.
Often found with a sheen of green or bluish iridescence.

 Brown algae have anti-bacterial and anti-fungal properties and have been used in medicines for millennia. They are essential to modern industry as well, producing alginates which are used as additives and fillers in many everyday products, from cosmetics to toothpaste and even ice cream.



LEAFY ROLLED BLADE ALGA

(*Padina boergesenii*) 15 cm / 6 in

Large clumps of leafy light brown blades with rounded edges. Banded in shades of brown, green or blue.



WHITE SCROLL ALGA

(*Padina pavonica*) 12 cm / 4.8 in

Rounded spiraling thick-walled blades found growing in dense clumps. Blades concentrically banded in white.



SAUCER LEAF ALGA

(*Turbinaria tricostata*) 15 cm / 6 in

Triangular cone-shaped thickened leaves on a short stalk. Often with dark brown speckles and pale centers.



BLISTERED SAUCER LEAF ALGA

(*Turbinaria turbinata*) 45 cm / 1.5 ft

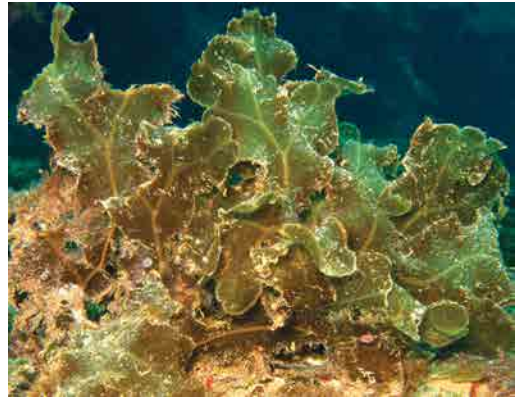
Tall erect stalks covered in triangular leaves with distinct rounded swellings in the centers. Found in the shallows.



GOLDEN TUFT ALGA

(*Sporochnus pedunculatus*) 30 cm / 1 ft

Golden brown fluffy tufts growing from a central axis. Found growing on rocky substrates on deeper reefs.



BROADLEAF ALGA

(*Dictyopteria justii*) 40 cm / 16 in

Tall erect flattened blades. Olive to dark green with a pale central midrib, often branching. Forms large bushes.



LEAFY FLAT BLADE ALGA

(*Styopodium zonale*) 15 cm / 6 in

Fan-shaped blades in shades of green to brown, with pale green bands. Grows in bushes from a central stalk.



BLUE BANDED ALGA

(*Taonia abbottiana*) 10 cm / 4 in


Rounded and flattened leaf with pale filamentous edges. Thin bright green or blue bands. Forms small clusters.



ROSE-RED CRUST ALGA

(*Peyssonnelia inamoena*) 45 cm / 18 in

Rounded pink to red encrusting alga with faint concentric and radial lines. Margins slightly raised from the substrate.

 If hard corals are said to be the building blocks of the reef, these red algae are the cement that binds it all together. Crustose coralline algae produce a structure of calcium carbonate, and are essential to all coral reef ecosystems. They need little sunlight and can grow down into the crevices between coral heads, seen in the cross section of the Yellow Pencil Coral on the right. Red algae can cover the walls of canyons and caves. In shallower waters one common type of red alga, called Reef Cement (following page), binds together acres of reef-top and stops it from becoming too eroded by annual storms and hurricanes.



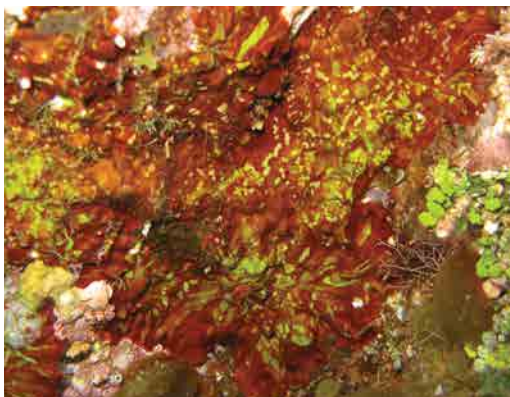
The color in red algae comes from a pigment called phycoerythrin, which allows them to grow in darker areas than green or brown algae. This photosynthetic pigment can still extract the remaining blue part of the limited sunlight. Coralline (or coral-like) algae absorb calcium directly from the seawater to maintain their shape. Others only take in a small amount of calcium and are more flexible. Some types of red algae can be completely soft and rubbery, even gelatinous.



MAROON-ORANGE CRUST ALGA
(Erythrodermis haematis) 45 cm / 18 in
 Mottled red and orange encrusting alga. Forms a rough fan shape with darker lines radiating from the center.



BURGUNDY CRUST ALGA
(Peyssonnelia conchicola) 45 cm / 18 in
 Deep red encrusting alga. Smooth surface, often shiny. Outer edges may not touch substrate, often overlapping.



MAROON-GREEN CRUST ALGA
(Peyssonnelia boergesenii) 45 cm / 18 in
 Yellowish-green to dark maroon encrusting alga. Reddish radiating lines become wider/darker near the margins.



MOTTLED CRUST ALGA
(Peyssonnelia stoechas) 45 cm / 18 in
 Flattened rounded encrusting alga. Orange-brown to rusty base color. Concentric pattern of dark red lines.



REEF CEMENT
(Porolithon onkodes)
 A broad calcified crust of pink to gray alga that takes on the shape of the underlying reef, holding it in place.




DEEPWATER ROSE ALGA
(Lithothamnion ruptile) 50 cm / 20 in
 Pink to bright red plates of varying thickness, formed into rounded floral shapes. Only found on deeper reefs.



TUBULAR THICKET ALGA

(*Galaxaura rugosa*) 15 cm / 6 in

Clusters of calcified cream to rose-red tubes, branching to form rounded domes. Gametophyte stage shown above.

 Many species of twig algae branch out to capture more of the limited sunlight available in deeper or more sheltered areas. They attach to the reef by a strong holdfast and their cell walls are strongly reinforced with calcium carbonate, making them very brittle.



FRAGILE BRANCHING ALGA

(*Tricleocarpa fragilis*) 30 cm / 1 ft

Long flattened segmented blades in pale to dark pink, often branching. Found growing from a common holdfast.



BLUNT THICKET ALGA

(*Dichotomaria obtusata*) 25 cm / 10 in

Clusters of pink to creamy-red cylindrical branches. Branches are smooth and elongated with sparse hairs.



HANCOCK'S TWIG ALGA

(*Amphiroa hancockii*) 10 cm / 4 in

A more robust form of twig alga. Often in lavender, tan or dark gray. Thick joints between each of the segments.



PINK SEGMENTED ALGA

(*Jania adhaerens*) 5 cm / 2 in

Small tangled clumps of very fine calcified branching stalks with pale tips. Shades of pink with white joints.



Y-TWIG ALGA

(*Amphiroa rigida*) 5 cm / 2 in

Widely branching segments are slightly flattened. Pale pink to white in color. Found growing in dense clumps.



FLAT TWIG ALGA

(*Amphiroa tribulus*) 10 cm / 4 in

Distinctively flattened segments, repeatedly branching from a common base. Pink to reddish with white tips.



DELICATE TWIG ALGA

(*Amphiroa fragilissima*) 5 cm / 2 in

Dense clusters of extremely fine calcified branches. Pale pink to yellowish-green, with distinctively white tips.



BRAZILIAN TWIG ALGA

(*Amphiroa brasiliiana*) 15 cm / 6 in

Loose clusters of thin tan to gold branches that divide near the tips. Found in the shallows among Turtle Grass.



PINK TANGLED ALGA

(*Gracilaria blodgettii*) 20 cm / 8 in

Dense clusters of long smooth tapering tubes with short rounded branchlets. Color varies from gray to pinkish.



Red algae are rich in minerals absorbed from the seawater. In many parts of the Caribbean they are used as a food source, such as some species of *Gracilaria* (above). Red algae can contain twenty times the amount of minerals that can be found in similar land-based plants.



MUCOSA PINK ALGA

(*Gloiocallis dendroidea*) 4 cm / 10 in

Tangled mass of very fine branching stalks in shades of pink and gray. Slimy appearance. Can cover large areas.



MUCOSA WHITE ALGA

(*Ganonema farinosum*) 30 cm / 1 ft

Tangled mass of soft thick branching stalks. White to light brown. Slimy appearance. Can cover large areas.



SPINOUS RED GRAPE ALGA

(*Botryocladia spinulifera*) 5 cm / 2 in

Rose-red tangle of bulbous leaves on long cylindrical stems. Mixed with other algae inside the reef crest.



RED DISC ALGA

(*Flahaultia tegetiformans*) 4 cm / 1.6 in

Thick round blades, often fused and overlapping. Red to maroon, with brownish edges. Found in dark reef areas.



MAROON HAIR ALGA

(*Pterocliadiella capillacea*) 10 cm / 4 in

Rounded deep red stalks with numerous tapering branchlets. Grows from runners attached to the reef.



CRYPTIC BLADE ALGA

(*Cryptonemia crenulata*) 10 cm / 4 in

Elongated thick-walled dark red leaves. Blade edges are rough and crenelated. Found growing in small clusters.



LAVENDER CRUST ALGA

(*Hydrolithon farinosum*) 2.5 cm / 1 in

A thin layer of white to purplish encrusting alga. Grows on hard surfaces like shells. Also on Sea Pearls (p. 18).



PEACOCK ALGA

(*Martensia pavonia*) 5 cm / 2 in

Flattened blades of purplish or red to pink alga with a distinctive network of holes and frills on the outer edges.



PINK BULBOUS ALGA

(*Renouxia* sp.) 10 cm / 4 in

Hemispherical clumps of bulbous smooth-walled structures. Slightly lobed with rounded pale pink tips.



Products derived from red algae are used to make agar. This colloidal agent is commonly used as a thickener in the food industry or as a substitute for gelatin. It also has strong anti-coagulant properties and can be used as an inert carrier, allowing a slow release for many pharmaceuticals.



BRANCHING BUSH ALGA

(*Dasya ramosissima*) 30 cm / 1 ft

Tall reddish-brown stalks with short fluffy alternating tufts of branchlets. Found in protected areas on deeper reefs.



ANTILLES SHAGGY ALGA

(*Dasya antillarum*) 12 cm / 5 in

Brown to purplish stalks with fine filamentous hair-like branchlets. Grows in clusters on shallower reefs.



PURPLE BUSH ALGA

(*Ochtodes secundiramea*) 10 cm / 4 in

Dense clusters of fleshy-textured deep purple branches. Branchlets slightly flattened and tapered at the tips.



PINK BUSH ALGA

(*Wrangelia penicillata*) 20 cm / 8 in

Tall bushy pink alga with long thin central branches. Smaller light pink branchlets grow out in a single plane.



KNOBBY BUSH ALGA

(*Yuzurua poiteaui* var. *gemmifera*) 15 cm / 6 in

Short fleshy cylindrical stalks, repeatedly branching from a common holdfast. Covered in small rounded knobs.



RED BUSH ALGA

(*Yuzurua poiteaui*) 30 cm / 1 ft

Bushy, with slightly flattened red branches. Branchlets are short with darker tips. Prefers areas of strong surge.



RED-TIPPED ALGA

(*Laurencia chondrioides*) 6 cm / 2.4 in

Short bush of cylindrical pale pink branches. Alternating branchlets with distinctively red tips and fine filaments.



BRANCHING BULB ALGA

(*Palisada cervicomis*) 4 cm / 1.6 in

Clumps of short cylindrical reddish-brown stalks. May have iridescent bluish-green bands near tips (above).



BRANCHING AGARDHIELLA

(*Agardhiella ramosissima*) 30 cm / 1 ft

Slippery rose-red flattened stalks, repeatedly branching to form a low bush. Found attached to deeper substrates.



The same chemical defenses that red algae use to thrive on the reef can also benefit humans. Compounds extracted from red algae have been found to have both anti-inflammatory and anti-viral properties. They have been used for millennia to boost the immune system and help remove toxins.



RUBBERY SHEET ALGA

(*Halymenia duchassaingii*) 20 cm / 8 in

Large thickened rubbery leaves. Yellow with dark red speckling. The edges are usually curled upwards.



RUBBERY BUSH ALGA

(*Halymenia elongata*) 20 cm / 8 in

Flattened gelatinous stalks, seldom branching, form a ball shape. Pink to reddish-brown. Prefers deeper reefs.



RED FILAMENT ALGA

(*Wurdemannia miniata*) 60 cm / 2ft

Tangled masses of fine hair-like deep red filaments, each repeatedly branching outwards. May cover large areas.



STRIVING RED ALGA

(*Ceramium nitens*) 30 cm / 1ft

Dense tangles of fine hair-like filaments, repeatedly branching outwards. Uniform reddish-orange in color.



PINK BRANCHLET ALGA

(*Jania cubensis*) 13 cm / 5 in

Clusters of long pink stalks growing upwards from a common base. Short pink branchlets tipped in white.



TUBULAR PINK ALGA

(*Solieria filiformis*) 25 cm / 10 in

Rounded semi-transparent tubes of pale pink to red, branching near the tips and growing into tangled clumps.



RUBBERY LEAF ALGA

(*Asteromenia peltata*) 9 cm / 3.5 in

Low clusters of fleshy red to iridescent pink leaves. Blade margins are often branched and overlapping.



ASPARAGUS ALGA

(*Asparagopsis taxiformis*) 20 cm / 8 in


Rigid pink to grayish stalks with densely packed short pointed branchlets. Gametophyte stage shown above.



TUFTED OKEANIA ALGA

(*Okeania plumata*) 15 cm / 6 in

Tangled mass of filamentous threads, pinkish inside and brown outside. Often grows on and around coral heads.

 Cyanobacteria, or blue-green algae, are responsible for much of the productivity on coral reefs. They convert nitrogen into inorganic nutrients like nitrates that are essential for both reef and seagrass primary production. They live symbiotically inside sponges and tunicates, breaking down limestone and allowing the rest of the reef to use the calcium. Although they are not classified as true plants (they lack chloroplasts and a nucleus) they share many of the same characteristics. These were the first life-forms that used photosynthesis to create oxygen, 3.5 billion years ago. They remain an important food source for many animals today, such as the Striated Seahare (below right). In recent years, however, cyanobacteria has been spreading too quickly and overgrowing coral reefs. It is not yet fully understood why this sudden growth is happening, but the results have become apparent to all who dive in the Caribbean. Coral heads and even large patches of reef are being overrun by cyanobacteria like the fast-growing *Okeania* species, pictured above. Cyanobacteria are also responsible for some of the diseases that attack the living flesh of many coral species (p. 102).





WHISPY OKEANIA ALGA

(*Okeania lorea*) 10 cm / 4 in

Dense mat of long filamentous coppery-brown threads. Attaches to the substrate or hard corals and gorgonians.



GELATINOUS TUFT ALGA

(*Caldora penicillata*) 20 cm / 8 in

Clumps of light brown elongated undulating masses. Attaches to substrate or dead corals and spreads easily.



GELATINOUS BALL ALGA

(*Spirocoleus fragilis*) 60 cm / 2 ft

Mucilaginous mass of tiny yellow filaments. Attaches to and eventually overgrows substrates and living corals.



FUZZ BALL ALGA

(*Symploca hydroides*) 10 cm / 4 in

A very dense ball of fine hair-like filaments. Gray, blue-green or burgundy on the outer layer and paler inside.



SCHIZOTHRIX ALGA

(*Schizothrix calcicola*) 4 cm / 1.6 in

Small clumps of undulating masses formed by fine, hair-like filaments. Whitish with rose-red to purple highlights.




RUBBERY SEAWEED

(*Leptolyngbya hendersonii*) 8 cm / 3.2 in

Rounded mass of hard rubbery tissue, often overgrowing living coral. Color varies from brownish-white to pink.




 Sponges are actually animal colonies and are some of the most vibrant and diverse creatures on a reef. They feed by constantly filtering nutrients out of the seawater. All sponges are covered with tiny incurrent pores that suck water in and larger excurrent openings that send it back out. In this way they can filter up to 20,000 times their own volume of seawater every day. Sponges are so successful that they have been on Earth for well over 500 million years. Many have developed chemical defenses from predation that are currently being studied to treat diseases in humans. They are found in all environments, from the shallowest lagoons to the deepest walls.



Sponges are beautiful animals in their own right, but they are also host to countless other creatures that use the walls of the sponge, and even the larger openings, as shelter. Sponges can be used by ambush predators as places to hunt from, or by nocturnal species taking refuge until nightfall.





 Sponges reproduce just once a year in a process called “broadcast spawning.” Millions of eggs or larvae are released into the water on the same day. This overwhelms potential predators and the chances for survival are higher. Most sponges are hermaphrodites, capable of producing both sperm and eggs. “Male” sponges appear to smoke as they release concentrated sperm, which is taken into the “female” sponge for fertilization. Some species release the fertilized eggs, but most allow them to hatch inside the “female” and develop into larvae before release. Distributed by ocean currents, they may eventually settle on a reef hundreds of miles away. While still in this early stage, they will be able to move about using tiny whip-like appendages called flagellae. Once they land, the larvae can even crawl across the reef for short distances, until they can find the most advantageous spot to take root and grow into mature sponges themselves.

Sponges are also able to reproduce asexually and can heal themselves quickly if broken. A small fragment of sponge can grow into a whole new colony. The unusual cellular structure of a sponge creates no tissues or organs as in other animals. In fact, if a sponge were to be cut up and pressed through a fine sieve, the cells could still recognize each other and start to reassemble themselves on the other side, with the new shape being dependent on the new water conditions.

There are hundreds of different sponge species found in the Caribbean and because each one is highly variable in both its shape and its color, telling them apart can be difficult. For the purposes of this book they have been divided into the following groups, based on their general shape:



Encrusting Shapes



Rope Shapes



Ball Shapes



Vase Shapes



Tube Shapes



Barrel Shapes



HIGH-VEINED ENCRUSTING SPONGE

(*Spirastrella hartmani*) 1 m / 3.2 ft

Salmon to dull orange encrusting sponge with distinctively protruding star-shaped veins. Large excurrent openings.



Encrusting sponge species vary widely in color, depending on their pigments. Underwater photographers will often be tempted to put a hand onto the reef to stabilize themselves. The sponge's pigments can stain a diver's skin, not to mention causing unnecessary damage to the sponge itself.



LOW-VEINED ENCRUSTING SPONGE

(*Clathria curacaoensis*) 30 cm / 1 ft

Thin-walled encrusting sponge with low star-shaped veins around excurrent openings. Color highly variable.



RUSTY ENCRUSTING SPONGE

(*Clathria minuta*) 10 cm / 4 in

Reddish-orange encrusting sponge with dark veins and a distinctively transparent outer sheath. Found in shallows.

ENCRUSTING SPONGES : SPONGES



ORANGE LUMPY ENCRUSTING SPONGE
(*Scopalina ruetzleri*) 30 cm / 1 ft

Encrusting sponge with rough-textured walls and thin spiky protrusions between the excurrent openings.



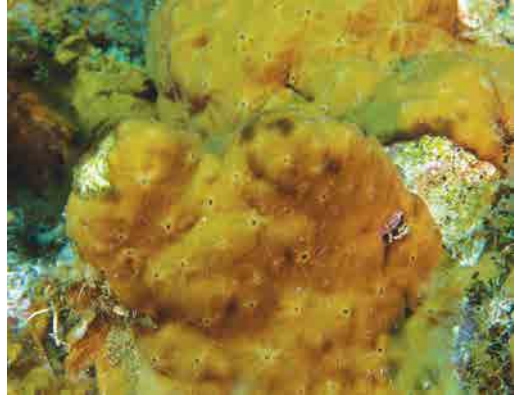
PINK AND RED ENCRUSTING SPONGE
(*Spirastrella coccinea*) 1 m / 3.2 ft

Pink encrusting sponge with red speckles. Excurrent openings are a lighter pink and slightly protruding.



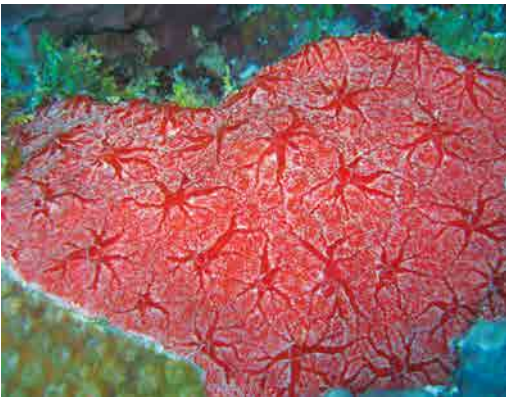
BROWN ENCRUSTING SPONGE
(*Neopetrosia proxima*) 30 cm / 1 ft

Smooth-walled lumpy reddish-brown to tan encrusting sponge. Scattered excurrent openings with paler rims.



CHICKEN LIVER SPONGE
(*Chondrilla caribensis*) 30 cm / 1 ft

Shiny mustard-yellow to greenish-yellow sponge, often with dark blotches. Pale radiating veins around openings.



RED ENCRUSTING SPONGE
(*Monanchora arbuscula*) 25 cm / 10 in

Thin-walled encrusting sponge in shades of pink to red. Large excurrent openings with dark red radiating veins.



MELTED SPONGE

(*Plakina jamaicensis*) 25 cm / 10 in

Bulbous bright yellow to orange sponge. Surface forms lumpy melted blobs around small excurrent openings.



LUMPY OVERGROWING SPONGE

(*Desmapsamma anchorata*) 45 cm / 1.5 ft

Peach to orange encrusting sponge, often forming dangling ropes. Large excurrent openings on tips of pointed cones.



Encrusting sponges can be found covering almost every kind of substrate on a coral reef. They can sometimes be seen overgrowing other larger sponges and some species can even use chemical attacks on living coral heads, stopping their growth and allowing the sponges more room to grow.



VISCOUS SPONGE

(*Plakortis angulospiculatus*) 30 cm / 1 ft

A brown to yellow sheet of encrusting sponge, seeming to stretch across the substrate. Few excurrent openings.



PERNUCLEATA SPONGE

(*Aaptos pernucleata*) 30 cm / 1 ft

Smooth rounded black sponge with no distinct markings. Rounded excurrent openings are randomly distributed.

ENCRUSTING SPONGES : SPONGES



RED SIEVE ENCRUSTING SPONGE

(*Phorbast amaranthus*) 45 cm / 1.5 ft

Deep red encrusting sponge with small densely packed incurrent pores and larger scattered excurrent openings.



ORANGE SIEVE ENCRUSTING SPONGE

(*Placosphaera micrastra*) 45 cm / 1.5 ft

Light orange encrusting sponge with darker clumps of incurrent pores surrounding larger excurrent openings.



BROWN VARIABLE SPONGE

(*Cliona varians*) 45 cm / 1.5 ft

Tan to olive-brown mass with pale protruding excurrent openings. May also form into rounded ball shapes.



STAR ENCRUSTING SPONGE

(*Halisarca caerulea*) 25 cm / 10 in

Thin-walled gray to lavender sponge. Pale protruding excurrent openings surrounded by thin radiating lines.



WHITE ICING SPONGE

(*Mycale laevis*) 45 cm / 1.5 ft

Less common white variation of *Mycale* sponge. Found growing under flat corals such as Mustard Hill (p. 81).



ORANGE ICING SPONGE

(*Mycale laevis*) 45 cm / 1.5 ft

Bright orange encrusting sponge with paler protruding excurrent openings and visible incurrent pores.



ORANGE ELEPHANT EAR SPONGE

(*Agelas clathrodes*) 2 m / 6.5 ft

Massive rounded sheet of orange sponge with a pitted texture. Commonly found on deeper reefs and walls.



Many sponges have developed chemical defenses and can sting bare skin, so divers should never touch them. It could result in pain, nausea and rashes that can last for days. Vinegar can be used to neutralize some of the toxins and a hydrocortisone cream will take away some of the sting.



ENCRUSTING ELEPHANT EAR SPONGE

(*Agelas sventres*) 30 cm / 1 ft

Lumpy orange sponge with a smooth shiny surface. Loose clusters of oval to elongated excurrent openings.

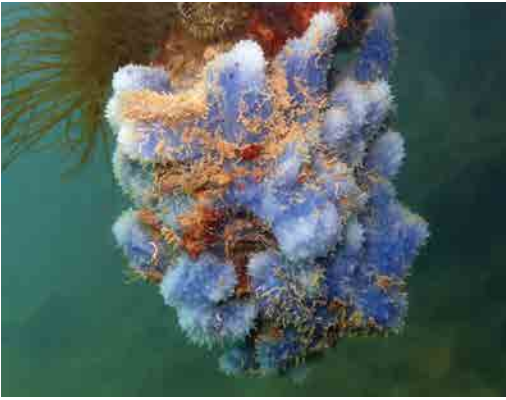


BLUE ENCRUSTING TUBE SPONGE

(*Niphates amorpha*) 30 cm / 1 ft

Squat pale blue tubes, fused together and growing close to the substrate. Found in reef shallows and on docks.

ENCRUSTING SPONGES : SPONGES



HEAVENLY SPONGE

(*Dysidea etheria*) 10 cm / 4 in

Blue to purple rough-textured sponge, forming dense clusters. Often in sheltered reef areas and mangroves.



GOLDEN ENCRUSTING SPONGE

(*Batzella rubra*) 40 cm / 16 in

Interconnected mass of large excurrent openings that form elongated tubes. Colors range from white to golden.



BROWN OCTOPUS SPONGE

(*Ectyoplasia ferox*) 40 cm / 16 in

Interconnected mass of small brown tube-shaped sponges with pale protruding excurrent openings.



FIRE SPONGE

(*Tedania ignis*) 30 cm / 1 ft

Orange to red with cone-shaped excurrent openings. Commonly found in the shallows. Can sting bare skin.



RED ENCRUSTING TUBE SPONGE

(*Igemella notabilis*) 30 cm / 1 ft

Deep red to bright pink clumped lobes with excurrent openings on the tops. Solid color throughout the tissue.



PINK ENCRUSTING TUBE SPONGE

(*Xestospongia deweerdtiae*) 30 cm / 1 ft

Pink to orange with volcano-shaped excurrent openings, all connected to a common body. Found under ledges.



CRYPTIC SPONGE

(*Leucetta floridana*) 30 cm / 1 ft

Short tubes in white to pale pastel colors. Found growing upside down, often on channel walls or more turbid water.



Many sponges will actually grow into the limestone of the reef, rather than growing out and away from it. They secrete chemicals that dissolve existing coral heads and allow them to burrow into the substrate. Their excurrent openings can extend down below the level of the reef.



PALE CALCAREOUS SPONGE

(*Leucaltis clathria*) 10 cm / 4 in

Interconnected pink to white tubes with a visible skeletal structure. Often a shiny surface. Found under ledges.



YELLOW CALCAREOUS SPONGE

(*Arturia canariensis*) 10 cm / 4 in

Interconnected bright yellow tubes with raised excurrent openings. Visible internal structure. Found under ledges.

ENCRUSTING SPONGES : SPONGES



CORAL ENCRUSTING SPONGE

(*Cliona caribbaea*) 1 m / 3.2 ft

Very thin-walled olive to dark brown encrusting sponge with tiny excurrent openings. Bores into coral heads.



DARK VOLCANO SPONGE

(*Svenzea zeai*) 1 m / 3.2 ft

Dark red sponge with pointed tips towards the excurrent openings. Paler inside. Tissue is soft and easily broken.



STRIATED SPONGE

(*Smenospongia aurea*) 60 cm / 2 ft

Elongated encrusting sponge with pointed excurrent openings. Gray to lavender. Found on deeper reefs.



CONICAL STRIATED SPONGE

(*Smenospongia conulosa*) 20 cm / 8 in

Gray to light brown with a netted surface. Pale excurrent openings are found on the tops of short pointed tubes.



VARIABLE BORING SPONGE

(*Siphonodictyon coralliphagum*) 10 cm / 4 in

Short cone-shaped sponge growing above and into coral heads. Single tall tapering excurrent opening.



RED BORING SPONGE

(*Cliothosa delitrix*) 30 cm / 1 ft

Red to orange crust over coral heads. Large excurrent openings with paler edges. Often covered in zoanthids.




SCATTERED PORE ROPE SPONGE

(*Aplysina fulva*) 3 m / 10 ft

Rounded rope shapes in orange, green or brown.

Excurrent openings are randomly placed along the sides.

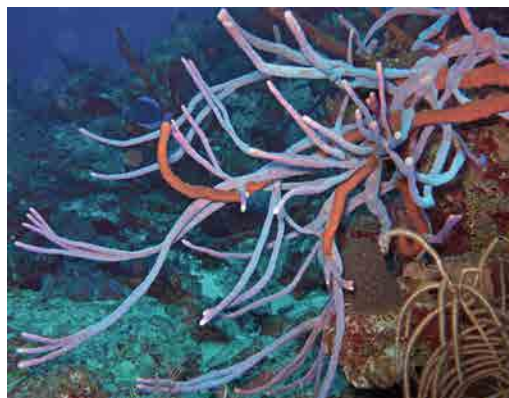
 Rope sponges are often difficult to identify because of the various color and growth patterns within each species, depending on depth, current and the available nutrients. The arrangement or color of the small excurrent openings can often be used to identify the different species.



HORNED ROPE SPONGE

(*Agelas cervicornis*) 60 cm / 2 ft

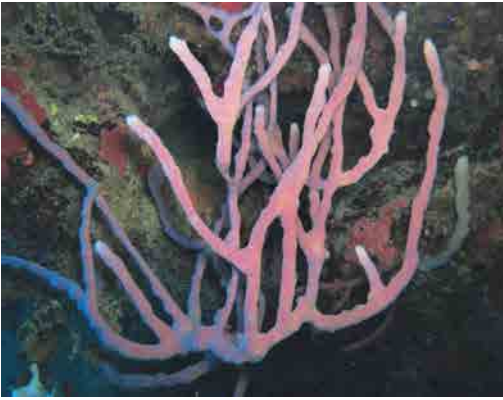
Slightly flattened tan to dark brown ropes with larger excurrent openings. Flattened tips, often in two lobes.



ROW PORE ROPE SPONGE

(*Aplysina cauliformis*) 3 m / 10 ft

Thin smooth ropes, often curving upwards near the tips. Excurrent openings are in uniform rows along the tops.



LAVENDER ROPE SPONGE

(*Niphates erecta*) 1.8 m / 6 ft

Light pink to purple ropes with a porous rough-textured surface. Sparse branching. Tiny excurrent openings.



ERECT ROPE SPONGE

(*Amphimedon compressa*) 1.2 m / 4 ft

Tall bright red ropes, usually standing straight up. Rarely branching, but usually interconnected near the base.



FLATTENED ROPE SPONGE

(*Dragmacidon lunaecharta*) 30 cm / 1 ft

Bright red wedge-shaped sponge. Few oblong excurrent openings. Often covered with Golden Zoanthids (p. 129).



GREEN FINGER SPONGE

(*Iotrochota birotulata*) 90 cm / 3 ft

Rough-textured dark green ropes with pale highlights. Sparse branching. Protruding black excurrent openings.



ROUNDED ROPE SPONGE

(*Agelas sceptrum*) 90 cm / 3ft

Thick lumpy elongated rope. Tan to brown with lighter excurrent openings. Found under ledges and overhangs.



THIN ROPE SPONGE

(*Clathria virgultosa*) 1.8 m / 6 ft

A fine network of tangled ropes. Tan to reddish brown. Most commonly found on deeper reefs and walls.



ORANGE BRANCHING SPONGE

(*Ptilocaulis marquezii*) 30 cm / 1 ft

Uniform orange tangle of short ropes with a spiky texture.
Grows outward into short bushes from a common base.



Rope Sponges are usually found on walls and deeper reefs, and a dive light is often needed to appreciate the vibrant colors of these sponges. Their tangled shapes make them an ideal place to search for smaller hidden animals like shrimps or decorator crabs (p. 277).



RED-ORANGE BRANCHING SPONGE

(*Ptilocaulis* sp.) 40 cm / 16 in

Orange to bright red ropes with a rough-walled texture.
Branches out from a common base. Often on walls.



WALPER'S ROPE SPONGE

(*Ptilocaulis walpersi*) 30 cm / 1 ft

Dark red tangle of ropes, with conical protuberances giving a rough texture. Often in deeper sandy areas.



WHITE CONE SPONGE

(*Siphonodictyon xamaycaense*) 10 cm / 4 in
 Clusters of tapering white tubes growing down into the reef. Often found under ledges or on deeper reefs.



RED STALAGMITE SPONGE

(*Oceanapia stalagmitica*) 15 cm / 6 in
 Thin dark red stalks growing together in small clumps. Smooth outer walls with no visible excurrent openings.



YELLOW STRING SPONGE

(*Halichondria lutea*) 10 cm / 4 in
 Thin orange stalks with tapered ends, growing upwards in clumps from a buried base. Found in sandy areas.



BURIED SPONGE

(*Oceanapia peltata*) 20 cm / 8 in
 Ragged white stalks with concentric protrusions, growing in small clumps of three or four. The main body is buried.



ENCrustING STRING SPONGE

(*Dictyonella funicularis*) 20 cm / 8 in
 Olive-green encrusting mat with thin stringy filaments. Tiny excurrent openings. May encrust other sponges.



CIRCULAR COLUMN SPONGE


(*Topsentia ophiraphidites*) 45 cm / 1.5 ft
 Tall erect spines, often from a common circular base. Dark red to brown in color. Small excurrent openings.



SPINY BALL SPONGE

(*Leucandra barbata*) 2 cm / 0.8 in

Tiny white ball with thin transparent spines covering the body. Found on deeper reefs or in darker areas.

 The Spiny Ball Sponge is one of the smallest sponges to be found on the reef, about the size of a small fingernail. It is protected by hair-thin needles sticking out in all directions. Look for them at greater depths, often growing on black corals (p. 90) or under darker ledges.



ORANGE BALL SPONGE

(*Cinachyrella kuekenthali*) 25 cm / 10 in

Rounded dark orange ball with numerous scattered pale excurrent openings. Often found under ledges.



CONVOLUTED ORANGE SPONGE

(*Myrmekioderma gyroderma*) 60 cm / 2 ft

Dark orange sponge with a reticulated pattern of lighter valleys and excurrent openings. Found under ledges.



CAVE BALL SPONGE

(*Cinachyrella apion*) 10 cm / 4 in

Light brown ball with large excurrent openings and thin spikes. Found in caves (also found buried in lagoons).



STINKER SPONGE

(*Ircinia felix*) 30 cm / 1 ft

Rounded gray to purple ball with hexagonal pattern of connected spikes. Scattered excurrent openings.



MIDNIGHT BALL SPONGE

(*Asteropus niger*) 60 cm / 2 ft

Rounded ball-shaped sponge with a shiny black surface. Clusters of small solid black excurrent openings on top.



BLACK BALL SPONGE

(*Ircinia strobilina*) 60 cm / 2 ft

Rounded light brown ball with a spiny texture. Excurrent openings are gathered in two or more separate clusters.



CRASSA BALL SPONGE

(*Aiolochoira crassa*) 30 cm / 1 ft

A ball-shaped form of the common Branching Tube Sponge that is easily mistaken for other ball sponges.



RUGOSE BALL SPONGE

(*Clathria faviformis*) 45 cm / 1.5 ft


Irregular orange ball with a rough or wrinkled surface. Small excurrent openings. Often found among algae.



AZURE VASE SPONGE

(*Callyspongia plicifera*) 60 cm / 2 ft

Bright blue vase sponge with highly ruffled walls. May be found growing in small clusters. May fluoresce at depth.

 Sponges get their shape and rigidity from microscopic glass-like fibers in their bodies called spicules. These are woven together to create a framework around which the animal can grow. It also allows them to be flexible in currents and surge, in much the same way that fiberglass does. In other species, such as the *Dysidea* (below right), thin filaments of algae take the place of spicules and even small particles of sand can be taken up and used to strengthen the walls of the sponge. Sponges have a close relationship with cyanobacteria (p. 40), and they get much of their energy from their photosynthesis. Pigments in the sponge give them their bright colors and some species, such as the Azure Vase Sponge, can fluoresce and seem to give off a light of their own (below left).





STRAWBERRY VASE SPONGE

(*Mycale (Arenochalina) laxissima* VARIATION)

In shallower water the pigments of the Strawberry Vase Sponge are paler, giving it a more orange color.



STRAWBERRY VASE SPONGE

(*Mycale (Arenochalina) laxissima*) 30 cm / 1 ft

Deep red vase sponge with rough-textured walls. Often clustered around a shared base. Appears black at depth.



ELONGATED VASE SPONGE

(*Callyspongia longissima*) 1 m / 3.2 ft

Thin erect form of *Callyspongia*. Grows singly or in dense clusters. Often covered with zoanths (p. 128).



BRANCHING VASE SPONGE

(*Callyspongia (Cladochalina) aculeata*) 1 m / 3.2 ft

Thin-walled gray vase sponge with a spiky texture on the outside and a smooth texture inside. Often in clusters.



RIGID VASE SPONGES

(*Dysidea janiae*) 5 cm / 2 in

Clusters of short rounded tubes with a netted pattern of filaments on the outside. Lavender to pale brown in color.



PINK VASE SPONGE

(*Niphates digitalis*) 30 cm / 1 ft


Thin rough-walled pink vase sponge with an almost transparent rim of new growth visible around the top.



BRANCHING TUBE SPONGE

(*Aiolochoxia crassa*) 45 cm / 1.5 ft

Thick-walled tubes, often growing in dense clusters. The shape and color are highly variable.

 A good example of the variability of sponges, the Branching Tube Sponge can take on many different colors, textures and even basic growth patterns, making a positive identification of this species difficult underwater. It is found on all kinds of terrain and at all diving depths,





BROWN CLUSTERED TUBE SPONGE

(*Agelas wiedenmayeri*) 15 cm / 6 in

Smooth-walled reddish-brown tube sponge. Distinctively pinched-in excurrent openings. Found in dense clusters.



TUBULATE SPONGE

(*Agelas tubulata*) 60 cm / 2 ft

Smooth-walled tan to brown tubes with rounded pale ends. They are commonly interconnected at the base.



BROWN TUBE SPONGE (VARIATION)

(*Agelas conifera*)

Highly variable in growth. Several small tubes can fuse to form long chains, erect club shapes or low masses.



BROWN TUBE SPONGE

(*Agelas conifera*) 1 m / 3.2 ft

Long brown tubes, often growing in clusters. Highly variable in shape. Often covered with zoanthsids (p.128).



SVEN'S TUBE SPONGE

(*Svenzea tubulosa*) 10 cm / 4 in

Yellow to brownish tubes, commonly fused together. May form low clusters. Base is often hidden within the reef.



BRAIN SPONGE

(*Agelas cerebrum*) 45 cm / 1.5 ft


Short irregular tube or barrel shapes. Deep grooves cover the outer walls. Found individually or in clusters.



STOVEPIPE SPONGE

(*Aplysina archeri*) 2 m / 6.5 ft

Long knobby thick-walled tubes. Flexible enough to sway in currents. Often found in clusters. Color is highly variable.

 By looking closely at the excurrent opening at the end of a large sponge, one can see just how much water is being processed. It has been estimated that in areas with a healthy sponge population nearly a quarter of all the seawater passing through a reef can be filtered out by its resident sponges.



YELLOW TUBE SPONGE

(*Aplysina fistularis*) 1.2 m / 4 ft

Yellow to pale orange tubes with a convoluted surface. Often found in clusters, especially on shallower reefs.



BRANCHLET SPONGE

(*Aplysina insularis*) 60 cm / 2 ft

Thick-walled soft yellow tubes with numerous thin yellow projections. Often found growing in clusters.



PITTED TUBE SPONGE

(*Verongula rigida*) 35 cm / 14 in

Short brownish-orange tubes with a netted outer texture. Paler excurrent openings. Often found in low clusters.



MAROON TUBE SPONGE

(*Neopetrosia rosariensis*) 1.2 m / 4 ft

Elongated dark brown to reddish tube sponges, often with flared ends. May be fused together in tight clusters.



RED COLUMN SPONGE

(*Pandaros acanthifolium*) 30 cm / 1 ft

Short cylindrical deep red sponge. Rough-textured with scattered excurrent openings. Commonly found on sand.



PURPLE TUBE SPONGE

(*Callyspongia fallax*) 10 cm / 4 in

Dark purple to pinkish tubes with soft consistency. Often found in clusters or tangled masses on shallow reefs.



MINIATURE TUBE SPONGES

(*Hyattella cavernosa*) 2.5 cm / 1 in

Small blue to lavender tube sponges, growing upwards from a common base which is usually covered in algae.



FLATTENED TUBE SPONGE

(*Plakinastrella onkodes*) 25 cm / 10 in

Low-growing sponge with a mottled brown surface. The thin rim of the excurrent opening is a lighter brown.

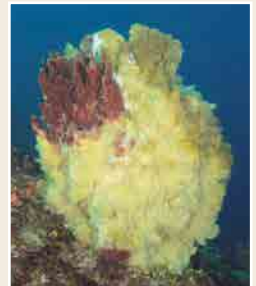


The massive Giant Barrel Sponges have earned the nickname “The Redwoods of the Caribbean” because of their great size and age. Some are estimated to be up to an astonishing 2000 years old. The sponge on the left could easily be over 800 years old and when Columbus first landed in the Caribbean, this sponge was already attached to this same spot on the reef and growing happily.

The reddish color of these giants comes from cyanobacteria that are living in association with the tissues of the sponge and two sponges growing side by side may have slightly different reddish colors.

Divers should take care when moving around Giant Barrel Sponges. Despite their massive size they are very fragile, especially around the rim where most of the new growth takes place. Poor buoyancy can mean the end of decades of growth.

The careless dropping of an anchor or even a dragging fishing line can slice through a large sponge, often killing it. As filter feeders, sponges suffer quickly from increased contaminants in the seawater. They can develop diseases such as Orange Band Disease (far right), which has now become common throughout the Caribbean. The exact cause of this disease is still unknown, though it is thought to be similar to the bacterial diseases that affect coral heads (p. 102).





GIANT BARREL SPONGE

(*Xestospongia muta*) 2 m / 6.5 ft

Massive reddish-brown barrel sponge with a wide central excurrent opening. Sometimes fused into large clusters.



NETTED BARREL SPONGE

(*Verongula gigantea*) 1.5 m / 5 ft

Yellow to greenish barrel sponge with a rubbery netted texture. The inside is the same color as the outer walls.



HUMPED BARREL SPONGE

(*Geodia gibberosa*) 45 cm / 1.5 ft

Squat brown barrel sponge with cream-colored excurrent openings forming a flattened plate. Found under ledges.



LEATHERY BARREL SPONGE

(*Geodia neptuni*) 1 m / 3.2 ft

Thick-walled barrel sponge with a pitted texture. Often fed upon by sea turtles, revealing a white flesh inside.



ROUGH TUBE SPONGE

(*Oceanapia bartschi*) 1.2 m / 4 ft

Rounded barrel or tube sponge with a knobby texture. Thin protruding excurrent opening. Black interior walls.



CITRON SPONGE

(*Agelas citrina*) 1.8 m / 6 ft


Thick-walled squat orange sponge with a bumpy texture. Scattered excurrent openings. Found on deeper reefs.



RETICULATED BARREL SPONGE

(*Verongula reiswigi*) 1.2 m / 4 ft

Squat yellowish-green barrel sponge. Outer walls are thick with rounded bulbous protrusions. Wide excurrent opening.

 For most sponges, the growth and shape depends largely on the local environment. Factors such as currents and depth can change the shape of a sponge dramatically. In deeper water, away from storm surge and surface currents, they are free to take on more bizarre and delicate shapes.



BROWN BOWL SPONGE

(*Cribrochalina vasculum*) 90 cm / 3 ft

Smooth-walled dark brown to reddish bowl. No visible excurrent openings. Shapes can be highly variable.



CASTLE SPONGE

(*Amphimedon* sp. "castle" morphotype) 90 cm / 3 ft

Cinnamon-tan thick encrustations with tall sheer faces. Scattered excurrent openings. Found on deeper reefs



BELL SPONGE

(*Ircinia campana*) 45 cm / 1.5 ft

Thin-walled barrel or inverted cone. Outer walls with low conules, inner walls with scattered excurrent openings.



CONVOLUTED BARREL SPONGE

(*Aplysina lacunosa*) 90 cm / 3 ft

Thick-walled yellow barrel with a rough texture. Inside walls are always bright yellow with greenish highlights.



GRAY AMPHORA

(*Hyrtios* sp.) 30 cm / 1 ft

Round gray sponge with a protruding excurrent opening. Sharp projections on outer walls, interior walls are black.



GOBLET SPONGE

(*Aplysina bathyphila*) 45 cm / 1.5 ft

Very thick-walled white to brownish sponge with rounded edges. Found on deeper reefs and under darker ledges.



TOUCH-ME-NOT SPONGE

(*Neofibularia nolitangere*) 1.5 m / 5 ft

Squat thick-walled dark brown to maroon barrel sponge. Highly toxic, contact can cause intense itching in divers.



LOGGERHEAD SPONGE

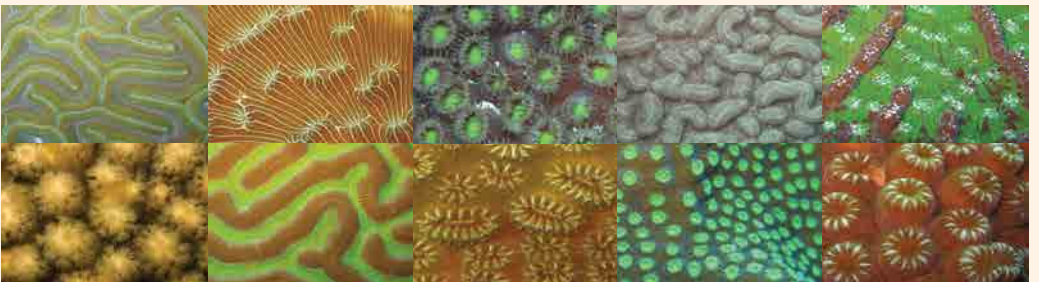
(*Spheciospongia vesparium*) 1.5 m / 5 ft

Short rounded barrel shape with a rough outer texture. Excurrent openings are all found in a central depression.




Corals form the building blocks of a reef ecosystem. They offer both food and shelter for the countless animals that call a reef home. Each coral is made up of a collection of tiny animal polyps, growing together in different shapes depending on their species. Each polyp has a central mouth for eating and expelling waste. Surrounding this is a ring of tentacles, which are armed with stinging cells called nematocysts, that can stun planktonic prey and move it into the mouth. Some are even able to capture and devour tiny fish. As a coral grows it lays down a thin skeleton of calcium carbonate as protection for its soft body. Decade after decade, as the colony continues to grow, this hard skeleton is repeatedly laid down on top of the others, until a coral reef is born.

Corals are some of the oldest forms of life on Earth. Some coral reefs alive today actually started growing over 50 million years ago. They are wildly diverse ecosystems. While coral reefs cover less than 2% of the ocean floor, they contain over 25% of all marine species.



Coral polyps themselves are actually translucent animals, closely related to the jellies. It is only the resident photosynthetic algae that give each species of coral its unique and vibrant colors.



 Hard corals are largely nocturnal animals that remain tightly closed up during the day, with their tentacles tucked safely away. It is at only night that divers can truly appreciate that these animals are actively feeding in the water column. This only explains a small part of their diet, however.

Within the tissues of each coral polyp there is a collection of tiny plant cells called zooxanthellae, which live in a symbiotic relationship with the coral. During the daylight hours these algae provide food and oxygen through photosynthesis. Corals get about 80% of their energy from these resident algae. This explains why coral reefs are found in areas with clear water and access to lots of sunlight.

When the coral is under stress from pollution or higher sea temperatures the coral may expel the algae from its tissues, called coral bleaching (p. 86). The white color comes from the limestone skeleton now being visible through the polyps. This doesn't always prove fatal for the reef; after the stresses have passed the algae can be reabsorbed into the flesh and growth can continue as normal.

Highly sensitive ecosystems, coral reefs are under threat worldwide from rising sea temperatures and poor water quality. Half of the world's coral reef coverage has disappeared since the 1950's.

For the purposes of identification, the corals in this book have been roughly separated by general shape and appearance on the reef, as well as species type, into the following general categories:



Branching Corals



Massive Corals



Flat Corals



Solitary Corals



Black Corals



Octocorals



PILLAR CORAL

(*Dendrogyra cylindrus*) 3 m / 10 ft

Rounded light brown to yellowish spires growing upwards from a common base. Small densely packed tentacles.



Pillar Corals are usually found in the shallows, growing up towards the surface. As storms and hurricanes blow across the coral reefs of the Caribbean, these tall coral colonies seem to be at a disadvantage. They can and do sometimes fall down, but they have actually turned this to their advantage. When a Pillar Coral falls over it begins to regrow, sprouting new pillars along the top. In this way it can spread out and cover more area on the reef. With competition between corals for space and sunlight being so intense on a shallow reef, this species has turned its fragility into an asset.

While most corals keep their tentacles hidden during the daytime, Pillar Corals keep their short tentacles extended constantly, giving their sides a texture like a plush carpet. They need as much sunlight as possible in order to survive and grow. Unfortunately Pillar Corals have proven to be highly susceptible to coral diseases, especially Stony Coral Tissue Loss Disease (p. 104), and their numbers are dwindling throughout the Caribbean.





YELLOW PENCIL CORAL

(*Madracis auretenra*) 1.2 m / 4 ft

Dense clumps of yellow pencil-sized branches. Unlike most corals, the polyps remain extended during the day.



TEN-RAY FINGER CORAL

(*Madracis carmabi*) 1.5 m / 5 ft

Light orange to tan branches with rounded double-lobed tips. The mouths of the tiny polyps are greenish-yellow.



BRANCHING FINGER CORAL

(*Porites furcata*) 1.2 m / 4 ft

Branches split into two rounded lobes on a longer stalk. Polyps are often randomly retracted along each branch.



CLUBTIP FINGER CORAL

(*Porites porites*) 1.2 m / 4 ft

Branches end in thick wide lobes. Polyps often randomly retracted. Often found growing in rounded dome shapes.



DIFFUSE IVORY TREE CORAL

(*Oculina diffusa*) 35 cm / 15 in

Star-shaped polyps arranged on long branching arms. Polyp mouths are raised away from the main branches.



THIN FINGER CORAL

(*Porites divaricata*) 30 cm / 1 ft

Tan to light brown. Widely branching long thin stalks. Grows in smaller colonies and found in the shallows.




ELKHORN CORAL

(*Acropora palmata*) 3.5 m / 12 ft

Flattened brown to orange branches with paler tips.
Grows outward from a sturdy base. Found in shallows.



 *Acropora* are the fastest-growing coral species in the Caribbean. Staghorn Coral has an average growth rate of 10 cm a year, but under the right conditions it can double that. Mostly found in the shallows, they spread out to catch as much available sunlight as possible. They can reproduce both sexually, by releasing eggs, or asexually, by simple fragmentation. When storms break off the more delicate branches they can continue to grow until a new patch of reef is colonized. Over the last 30 years more than 80% of Staghorn Coral has been lost from reefs in the Caribbean. It is now considered a critically endangered species.

Fire corals and lace corals are hydrocorals, closely related to the jellies (p. 106). Like true reef-building corals, they lay down a protective skeleton of calcium carbonate. They have countless tiny spines and their name comes from the intense sting they can cause if touched. Fire corals are most common in the sunlit shallows, where they often overgrow live coral heads (right).

Divers should take extra care in the shallows, as the sting can last for days. If stung, do not wash the area with fresh water. This will only cause more stinging cells to be activated. Instead, wash the affected area in household vinegar to neutralize the toxins.





STAGHORN CORAL

(*Acropora cervicornis*) 2.5 m / 8 ft

Light brown branching tubes with pale pointed tips. Grows in dense thickets. Most common on shallow reefs.



FUSED STAGHORN CORAL

(*Acropora prolifera*) 1.2 m / 4 ft

Rounded branches end in a flattened array of smaller branchlets, each tipped in white. Forms dense clusters.



BLADE FIRE CORAL

(*Millepora complanata*) 45 cm / 1.5 ft

Flattened tan to yellow blades with small pores. Covered in fine white spines. Delivers a powerful sting if touched.



BRANCHING FIRE CORAL

(*Millepora alcicornis*) 45 cm / 18 in

Often encrusts the living reef and continues to form branching fan shapes. Tan to yellow with pale tips.



RIDGED FIRE CORAL

(*Millepora squarrosa*) 20 cm / 8 in

Thin upright blades with pale edges. Viewed from above, appears as intricate geometric or hexagonal patterns.



ROSE LACE CORAL

(*Stylaster roseus*) 10 cm / 4 in

Small fan-shaped colonies in pink to bright purple with pale tips. Found under ledges and inside small crevices.



Lettuce corals are some of the most abundant in the Caribbean and they can be found in the widest variety of reef habitats, from close to the surface to well below safe diving depths. They are fast-growing and unusually resistant to the stresses that put other corals at risk. They often cover wide expanses of the reef, especially in the shallows where they receive more sunlight. Varieties of lettuce coral were once thought to be distinct species but now most are simply classified as *Agaricia agaricites*. They are represented here according to their appearance on the reef.



THIN LEAF LETTUCE CORAL

(*Agaricia tenuifolia*) 3.5 m / 12 ft

Thin vertical plates of lettuce coral with polyps growing on both sides. Commonly forms into rounded domes.



LETTUCE CORALS

(*Agaricia agaricites*) 90 cm / 3 ft

Found in a variety of forms depending on depth and habitat. Colors vary from tan, yellow or greenish-brown.



ENCrustING LETTUCE CORAL

(*Agaricia agaricites*) 90 cm / 3 ft

Form *agaricites*: irregular ridges forming a reticulated pattern of discontinuous rows. Pale brown to yellowish.



KEELED LETTUCE CORAL

(*Agaricia agaricites*) 90 cm / 3 ft

Form *carinata*: irregular mounds with numerous blunt protrusions. Polyps are sunk down into the surface.



PURPLE LETTUCE CORAL

(*Agaricia agaricites*) 90 cm / 3 ft

Form *purpurea*: forms plates with long parallel rows of continuous ridges and valleys. Brown to green or purple.



SCALED LETTUCE CORAL

(*Agaricia agaricites*) 90 cm / 3 ft

Form *danaï*: thick-walled vertical plates with polyps on both sides. The steep valleys are often filled with algae.



LOW RELIEF LETTUCE CORAL

(*Agaricia humilis*) 13 cm / 5 in

Dense corallites in deep pits. Tall reticulated ridges not forming rows. Often pale blotches without zooxanthellae.




SUNRAY LETTUCE CORAL

(*Helioseris cucullata*) 25 cm / 10 in

Thin lines (septa) run concentrically toward the edges. Sharp ridges, with pale polyps only on the steeper side.



 Brain corals grow very slowly, less than 5 mm a year, and they can live to be centuries old. One colony gave scientists a 500-year cross section of climate conditions. They thrive in the shallows, where their rounded shape helps them survive storms and hurricanes by breaking up the force of the waves that would damage other, more fragile corals. Brain corals in deeper waters tend to lose this rounded shape, flattening out into low domes to catch more available sunlight.

All corals compete for sunlight on the reef and brain corals can even slowly overgrow one another in an attempt to get more of it. One of the biggest problems a coral head faces is the deposit of sediments that can block out this sunlight. Brain corals are uniquely adapted to deal with this and to keep their surfaces clean. They can distend their polyps and use their tentacles to remove any debris, or tiny hairs (cilia) can wave it away. They also have a special mucus layer for removing sediment.



These distinctive coral heads are good places for small fishes like Neon Gobies (p. 290) to set up cleaning stations. The deeper grooves provide the perfect place for them to hide during the night or to rest between cleaning jobs. Larger fish can often be seen circling around brain corals, waiting for their turn to come in and get themselves cleaned.



BOULDER BRAIN CORAL

(*Colpophyllia natans*) 2.5 m / 8 ft

Dome-shaped colonies with interconnected ridges. Distinctive thin grooves run along the tops of the ridges.



SYMMETRICAL BRAIN CORAL

(*Pseudodiploria strigosa*) 1.8 m / 6 ft

Large dome-shaped colonies with convoluted ridges (straighter near colony's edge). Ridge tops are smooth.



KNOBBY BRAIN CORAL

(*Pseudodiploria clivosa*) 1.2 m / 4 ft

Rounded dome with knobby protrusions. No grooves on long narrow ridges. Valleys are often in a lighter color.



GROOVED BRAIN CORAL

(*Diploria labyrinthiformis*) 1.2 m / 4 ft

Domed-shaped colonies of interconnected ridges, each with distinctively wide grooves. Tan to yellow or brown.



FLOWER GARDEN BRAIN CORAL

(*Colpophyllia amaranthus*) 30 cm / 1 ft

Small colonies with splayed valleys, similar appearance to Rose Corals (p. 79). Some now describe as *C. natans*.



ROUGH STAR CORAL

(*Isophyllia rigida*) 30 cm / 1 ft

Dense polyps with deep pits. A thin ridge line between each polyp. A star coral (p. 82) often mistaken for a brain.



RIDGED CACTUS CORAL

(*Mycetophyllia lamarckiana*) 30 cm / 1 ft

Ridges bordering the plates curve inwards. Polyps only on ridge tops. Often in contrasting colors of green and brown.



Some cactus corals are fluorescent and will stand out from the rest of the reef with a bright green or reddish glow, reflecting back light in different wavelengths. The protein responsible for this is thought to be acting as a kind of sunscreen to protect the colony from coral bleaching (p. 86).



ROUGH CACTUS CORAL

(*Mycetophyllia ferox*) 60 cm / 2 ft

Ridges border the plates and run towards the center. Wide valleys have white blisters of raised polyps.



LOWRIDGE CACTUS CORAL

(*Mycetophyllia danaana*) 40 cm / 16 in

Ridges border the plates and run towards and through the center of the colony. Often in contrasting colors.



SINUOUS CACTUS CORAL

(*Isophyllia sinuosa*) 20 cm / 8 in

Dome-shaped colonies with steep-sided ridges, often in contrasting colors. Thin white line runs along the ridges.



KNOBBY CACTUS CORAL

(*Mycetophyllia aliciae*) 45 cm / 1.5 ft

Ridges border the plates, are lighter in color and broken into smaller independent ridges as they near the center.



WHITEVALLEY MAZE CORAL

(*Meandrina jacksoni*) 90 cm / 3 ft

White lines between ridges are made up of extended polyps. Grows in plates or low pillar-shaped mounds.



MAZE CORAL

(*Meandrina meandrites*) 90 cm / 3 ft

Flattened plates or low domes of yellow to brown ridges with deep valleys. A thin line runs along the ridge tops.



ROSE CORAL

(*Manicina areolata*) 15 cm / 6 in

Oval-shaped colony with a long central valley and short side-valleys. Light to dark brown. Prefers sandy areas.




BUTTERPRINT ROSE CORAL

(*Meandrina danae*) 15 cm / 6 in

Oval-shaped colony, not connected to substrate. Deep central valley, branching at each end. Tan to yellow.



 Many hard corals reproduce by broadcast spawning, releasing countless gametes of sperm and eggs into the water at the same time. Eggs are fertilized as they drift away, perhaps to land on a suitable patch of reef to begin a new colony. For each coral, this only happens for a short period on only one night of the year, usually after a full moon in late summer. The timing is precise to ensure that fertilization takes place. In some species the gametes are released already fertilized and ready to grow. The fertilized eggs can drift for days or even weeks before settling onto a new reef.



The first indication that corals are about to spawn is called the setting stage, where gametes bulge up towards the polyp mouths. Within a few minutes the entire colony releases them all at once. Many fishes and invertebrates also follow this progress and try to catch as many of the nutritious egg bundles as they can before the spawn is over. This is why broadcast spawning is so successful; predators are simply overwhelmed by the sheer amount of food and more than enough will survive to land and grow in new areas.





ELONGATED FLOWER CORAL

(*Eusmilia fastigiata*) 1.2 m / 4 ft

Form *flabellata*: an uncommon variation where corallites form a highly elongated and thin-walled structure.



SMOOTH FLOWER CORAL

(*Eusmilia fastigiata*) 1.2 m / 4 ft

Rounded domes of widely spaced corallites on long stalks. Tall septa around corallites. Yellow to light brown.



SPINY FLOWER CORAL (VARIATION)

(*Mussa angulosa*)

The Spiny Flower Coral is sometimes found in dark green or even bluish. May fluoresce on deeper reefs.



SPINY FLOWER CORAL

(*Mussa angulosa*) 90 cm / 3 ft

Large fleshy polyps with a rough texture, tightly packed to form a hemispherical dome. Usually reddish-gray.



MUSTARD HILL CORAL (VARIATION)

(*Porites astreoides*)

A gray to light brown variation of *P. astreoides*, forming rounded domes or plates. Often found on deeper reefs.



MUSTARD HILL CORAL

(*Porites astreoides*) 90 cm / 3 ft

The most common variation of *P. astreoides*, dark yellow. Forms large irregular mounds or wide thin-edged plates.




GREAT STAR CORAL

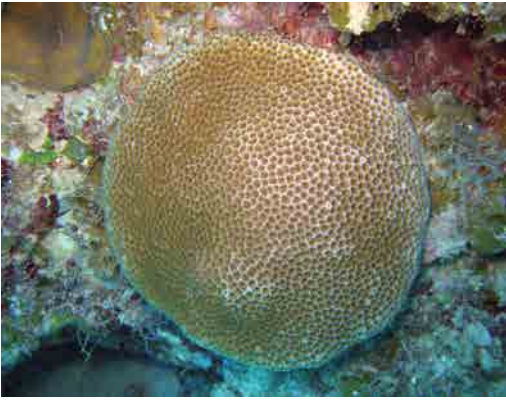
(*Montastraea cavernosa*) 2.5 m / 8 ft

Tightly packed protruding circular polyps. Forms massive rounded domes or wide plates. Color is highly variable.



 Star corals get their name from the tiny lines radiating out from the mouth of each polyp. The Great Star Coral is found in a wide variety of colors, depending on the color of the symbiotic algae (zooxanthellae) inside its flesh. The deeper colonies tend to attract an algae that is redder in color, so that it can make more use of the darker conditions. Up in the shallows a green algae can absorb more sunlight. Sometimes two different colors can be seen sharing the same coral head, or even the same individual coral polyp.





LESSER STARLET CORAL

(*Siderastrea radians*) 30 cm / 1 ft

Flat plates or low domes, usually tan to gray. Tightly packed corallites with distinctively darker central pits.



MASSIVE STARLET CORAL

(*Siderastrea siderea*) 1.8 m / 6 ft

Massive uniform brown to yellow domes. Corallites are evenly spaced with no dark centers. Found in shallows.



KNOBBY STAR CORAL

(*Solenastrea hyades*) 60 cm / 2 ft

Irregular lobes with knobby lumps. Dark brown corallites are irregularly spaced and sometimes almost touching.



SMOOTH STAR CORAL

(*Solenastrea bournoni*) 45 cm / 1.5 ft

Smooth tan to greenish-brown domes, sometimes with low irregular bulges. Corallites usually slightly darker.



BLUSHING STAR CORAL

(*Stephanocoenia intersepta*) 75 cm / 2.5 ft

Rounded domes of yellow to light brown. Polyps retract quickly when approached, hence the name "blushing."



BLUE CRUST CORAL

(*Porites branneri*) 30 cm / 1 ft


Dome-shaped encrusting coral with small deeply pitted corallites. Appears pale blue to purple in natural light.



MOUNTAINOUS STAR CORAL

(*Orbicella faveolata*) 2.5 m / 8 ft

Very large colonies with tall cone-shaped bumps, often with flared bottoms. Usually found growing close to the surface.

 Star corals are some of the most common on the reef and are found in a wide variety of growth patterns, depending on habitat and depth. The shape and distribution of the corallites (the skeletal cups that the polyps sit in) can be used to determine separate species.



LOBED STAR CORAL

(*Orbicella annularis*) 3 m / 10 ft

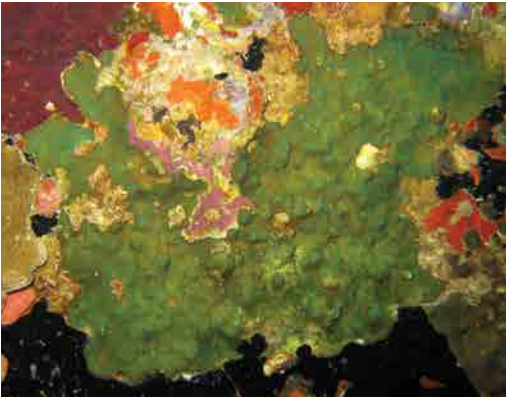
Collections of rounded light to dark brown coral heads with smooth tops. Only the tops have living polyps.



BOULDER STAR CORAL

(*Orbicella franksi*) 2.5 m / 8 ft

Grows in irregular lumpy mounds or plates. Shades of green to brown, with a scattering of small white patches.



ENCrustING STAR CORAL

(*Madracis pharensis*) 15 cm / 6 in

Thin layer of encrusting star-shaped polyps. Green to reddish. Found under ledges or darker areas of the reef.



GOLFBALL CORAL

(*Favia fragum*) 5 cm / 2 in

Small colonies of elongated polyps with protruding rims. Yellow to brownish. Usually found at shallower depths.



SIX-RAY STAR CORAL

(*Madracis senaria*) 60 cm / 2 ft

Green to brown encrusting coral with six distinctive rays (septa) on large dense corallites. Found on deeper reefs.



TEN-RAY STAR CORAL

(*Madracis decactis*) 75 cm / 2.5 ft

Encrusts to form bulbous interconnected knobs. Ten rays (septa) extend from each corallite. Green to yellowish.



ELLIPTICAL STAR CORAL (VARIATION)

(*Dichocoenia stokesi*)

On deeper reefs *D. stokesi* may form small round plates, competing with other plate corals for available sunlight.



ELLIPTICAL STAR CORAL

(*Dichocoenia stokesi*) 35 cm / 15 in

Densely packed corallites are distinctively elongated. Tan to brown. Typically forms rounded hemispherical domes.



Coral bleaching occurs when a colony comes under stress and expels the algae, called zooxanthellae, from its tissues, allowing the limestone skeleton below to become visible. Corals get about 80% of their nutrition from these zooxanthellae and the colony can die within just weeks, weakened and starved for food. The main cause of coral bleaching is higher sea temperatures and bleaching events are occurring more often in recent years. Once the corals are dead, opportunistic algae and sponges begin to overgrow the skeletons, changing the entire dynamic of a reef ecosystem.

Bleaching doesn't have to mean the death of a coral colony. Although corals are more vulnerable when they are in a bleached state, if the stresses pass they can reabsorb their zooxanthellae and continue to grow. The colony below began bleaching in early summer as water temperatures rose to unseasonable levels and it expelled almost all of its resident zooxanthellae. As water temperatures began to cool down again towards winter, this colony was able to recover.





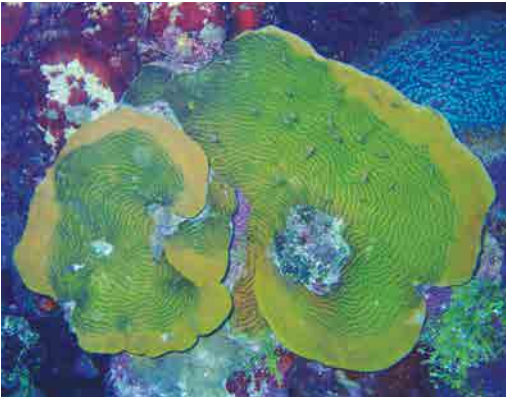
DIMPLED SHEET CORAL
(*Agaricia grahamae*) 1.8 m / 6 ft

Large flattened plates, often arranged in fan shapes. Distinctive tiny dark-pitted polyps, nestled in low valleys.



WHITESTAR SHEET CORAL
(*Agaricia lamarcki*) 1.8 m / 6 ft

Large flattened plates, often in fan shapes. Distinctive tiny white star-shaped polyps, nestled in low valleys.



SCROLL CORAL (VARIATION)
(*Agaricia undata*)

Sometimes plate corals can be found in contrasting colors, most often with wide light brown outer edges.



SCROLL CORAL

(*Agaricia undata*) 1.8 m / 6 ft

Large plates, often spiraling and curving upwards. Tiny polyps only found on the steep side of concentric ridges.



FRAGILE SAUCER CORAL
(*Agaricia fragilis*) 15 cm / 6 in

Small thin saucer-shaped plates. Low ridges in long rows, sometimes contorted. Often greenish polyps.



HONEYCOMB PLATE CORAL

(*Porites colonensis*) 25 cm / 10 in

Flattened reddish-brown ridgeless plates, occasionally with protruding lumps. Pale contrasting center on polyps.



SPECKLED CUP CORAL

(*Rhizosmilia maculata*) 1.5 cm / 0.6 in

Circular polyp with a deep central pit. Twelve large septa and numerous smaller septa. Covered in tiny brown spots.



Cup corals can be found under ledges and overhangs, as well as within cave systems where they need little sunlight in order to thrive. Most are no larger than a thumbnail and they tend to grow in clusters of the same species. The polyp's rim is surrounded by thin blades called septa.



ARTICHOKE CORAL

(*Scolymia cubensis*) 10 cm / 4 in

Large fleshy individual coral polyp. Raised radiating lines from a flattened center. Gray, green or brown.



ATLANTIC MUSHROOM CORAL

(*Scolymia lacera*) 15 cm / 6 in

The largest single polyp. Fleshy ring with polyp mouth in a concave central pit. Rough textured. Green to brown.



LESSER SPECKLED CUP CORAL

(*Colangia immersa*) 1.5 cm / 0.6 in

Circular to oval polyp with six protruding rounded septa. Color varies: deep central pit often different, lighter color.



ORANGE CUP CORAL

(*Tubastraea coccinea*) 1.5 cm / 0.6 in

Densely clustered bright orange polyps, usually in darker areas. An invasive species, now widespread.



ORANGE SOLITARY CUP CORAL

(*Rhizopsammia goesi*) 1.5 cm / 0.6 in

Individual bright pink to orange coral polyp. Six thick primary septa and six smaller secondary septa.



BAROQUE CAVE CORAL

(*Thalamophyllia riisei*) 1.5 cm / 0.6 in

Elongated pale pink to reddish polyps. Tall septa and deep central pits. Found on deep reefs and cave walls.



BUTTON CUP CORAL

(*Coenocyathus caribbeana*) 1.5 cm / 0.6 in

Thick-walled individual polyp with twelve rounded septa. Paler ring of the same color forms around the central pit.



TWOTONE CUP CORAL

(*Phacelocyathus flos*) 1.5 cm / 0.6 in

Circular to oval polyp. The outer septa are reddish-brown and the central pit is white, creating a contrasting pattern.



BUSHY BLACK CORAL

(*Antipathes caribbeana*) 4.5 m / 15 ft

Large bushy colonies of repeatedly branching stalks, getting finer towards the tips. Tentacles are whitish.



Black coral is not actually black; it often appears as a delicate white bush-like structure because of the pale tentacles on each polyp. It is found under dark ledges or on deeper reefs, often near the limits of recreational diving. The name comes from the base, or holdfast, anchoring the coral to the reef. This material is used in jewelry. In many parts of the Caribbean this rare coral is becoming endangered and the trade is outlawed, though harvesting still continues in places.

Please do not buy black coral jewelry. It looks much better on the reef than it does on you.

Look closer into the branches of black corals to find a number of animals that choose to call these rare and beautiful corals home. The Black Coral Shrimp (p. 253) and Black Coral Barnacle (p. 267) are found nowhere else. Juvenile Trumpetfish (p. 423) like to camouflage themselves among black corals, their color changing to match the stalks.





WIRE CORAL

(*Stichopathes luetkeni*) 4.2 m / 14 ft

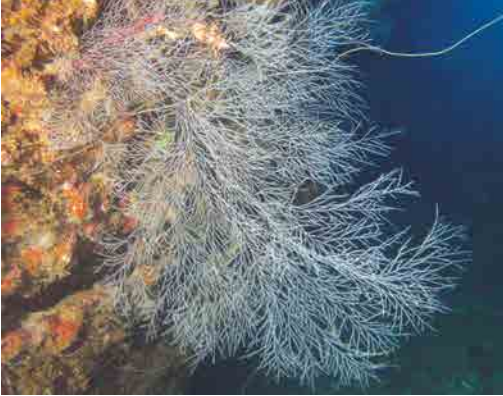
Single thin dark stalk that often coils and spirals. Found on walls and deep reefs. White to translucent tentacles.



FEATHER BLACK CORAL

(*Plumapathes pennacea*) 1.5 m / 5 ft

Dark branches with lateral branchlets in a single plane, resembling a leaf or a feather. Found on deeper reefs.



GRAY SEA FAN BLACK CORAL

(*Antipathes atlantica*) 1.2 m / 4 ft

Gray to light green fan shape. Numerous tiny dense side branchlets growing outward in a single plane.



ORANGE SEA FAN BLACK CORAL

(*Cupressopathes gracilis*) 1.2 m / 4 ft

Bright orange to brown fan shape. Numerous tiny dense branchlets growing outward in a single plane.



SCRAGGLY BLACK CORAL

(*Antipathes umbratica*) 30 cm / 1 ft

Dark rigid branchlets from a common stalk, growing into a loose bush shape. Tentacles are white to translucent.




HAIRNET BLACK CORAL

(*Antipathes lenta*) 25 cm / 10 in

Tiny gray to brown branchlets form a thick tangled interwoven mass. Tentacles are white to translucent.



 Octocorals, or gorgonians, are made up of many thousands of tiny coral polyps growing on a common structure. Each polyp always has eight tentacles. A strong base, or holdfast, keeps octocorals in place and allows them to grow out away from the reef, further into the water column. Here the individual polyps are able to feed on more of the tiny bits of plankton passing by in the current.



Octocorals deserve a closer inspection. They play host to a variety of reef creatures, feeding and taking shelter from their predators. There are many species of commensal shrimps, crabs, smaller fishes and even elusive nudibranchs that have evolved to live in these micro-environments.





ENCrustING GORGONIAN

(*Erythropodium caribaeorum*) 90 cm / 3 ft

Encrusting layer of fleshy light brown coral tissue. Fine hair-like tentacles, randomly retracted during the day.



WHITE TELESTO

(*Carijoa riisei*) 25 cm / 10 in

Pinkish stalks covered with large white polyps. Each stalk is tipped with a single polyp. Forms bushy shapes.



CORKY SEA FINGERS (VARIATION)

(*Briareum asbestinum*)

Encrusting variation of *B. asbestinum*, forming a dense clump of purple ball shapes. Polyps are retracted here.



CORKY SEA FINGERS

(*Briareum asbestinum*) 60 cm / 2 ft

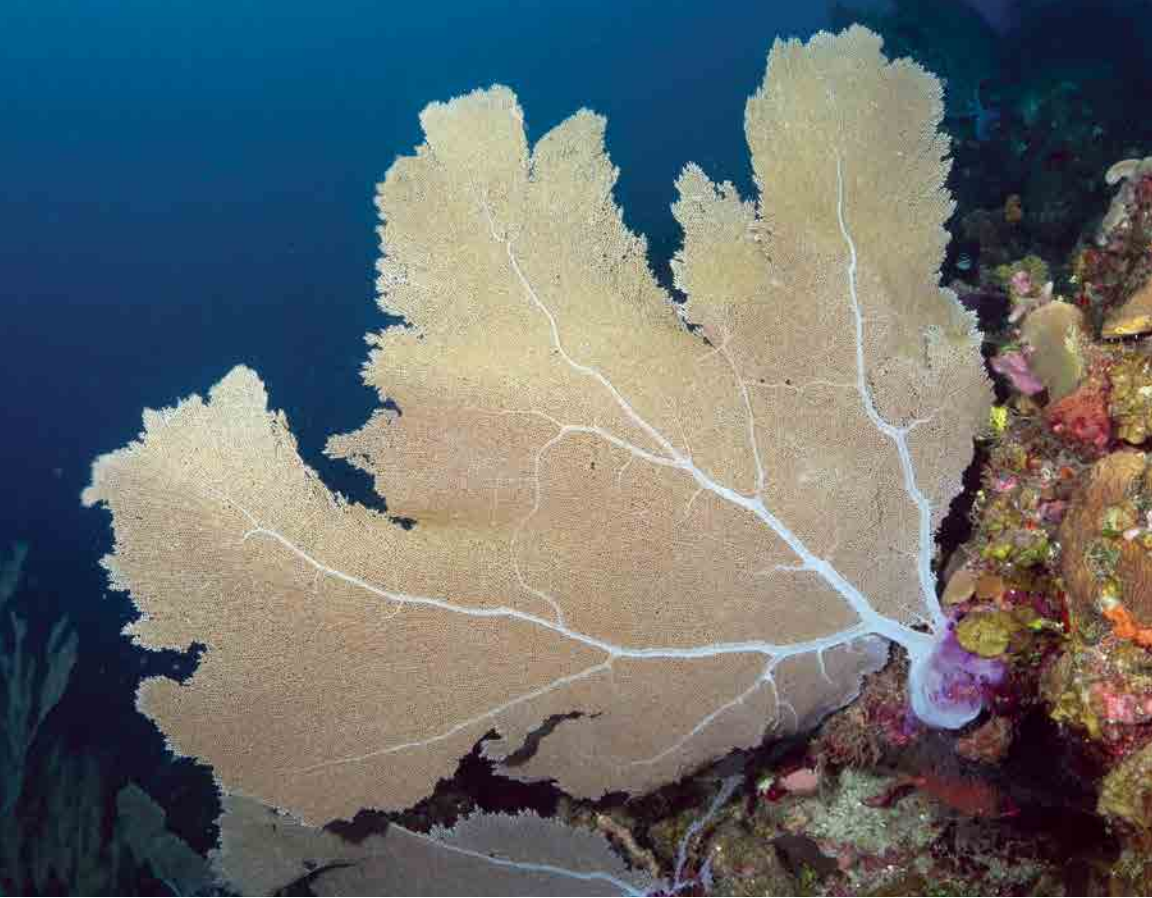
Tight clusters of single unbranched purple rods. Dense light brown polyps often found extended during the day.



Some octocorals may reproduce by broadcast spawning. Others reproduce by brooding: first the sperm is released, which is then caught by female polyps with gametes. Still other species may reproduce asexually, in a process called budding, where the new coral polyps simply grow out of existing ones.

Identifying individual octocorals can be difficult because of the wide variety of growth patterns and even basic colors that each may have. It is sometimes only when the polyps are retracted and we can see the tiny mouth of the corallite that we can be sure of which species we are looking at.





COMMON SEA FAN

(*Gorgonia ventalina*) 1.8 m / 6 ft

Tall rounded fan shape with a flattened outer surface.
Yellowish to light brown with purple veins and holdfast.



Sea fans that grow in the shallows have very strong holdfasts that keep them anchored to the reef floor. Their structure is flexible enough to sway back and forth, even in the strongest waves and storms. This movement also helps them to feed, bringing them into contact with more plankton.



VENUS SEA FAN

(*Gorgonia flabellum*) 1.2 m / 4 ft

Fan-shaped colonies. Branchlets have flattened inner edges. Ragged fan extensions grow out from the sides.



COMMON SEA FAN (VARIATION)

(*Gorgonia ventalina*)

In shallower waters the Common Sea Fan may be bright purple. Brown and purple varieties can grow side by side.



SPINY SEA FAN

(*Muricea muricata*) 60 cm / 2 ft

Dense branching brown to yellow rods in a fan shape. Retracted polyps have a spiny aperture. Pale polyps.



WIDE MESH SEA FAN

(*Gorgonia mariae*) 35 cm / 14 in

Smaller gray to yellowish fans with distinctively larger spaces between branchlets. Polyps in opposite rows.



LONG SPINE SEA FAN

(*Muricea pinnata*) 1.8 m / 6 ft

Highly branching gray to yellow fan shape. Retracted polyps have a spiny aperture. Yellowish-brown polyps.



GOLDEN SEA SPRAY

(*Heterogorgia uatumani*) 30 cm / 1 ft

Thick bright yellow to golden branches form a fan shape. Bright yellow polyps. Found in deeper or darker areas.



ORANGE DEEPWATER FAN

(*Nicella goreau*) 45 cm / 1.5 ft

Bright orange to red branches growing in a single plane. Translucent white polyps. Found under darker ledges.



DEEPWATER SEA FAN

(*Iciligorgia schrammi*) 1.5 m / 5 ft

Large reddish fans with widely spaced branches and lighter polyps. Prefers deeper walls and stronger current.



COLORFUL SEA ROD

(*Diodogorgia nodulifera*) 30 cm / 1 ft

Bright red branches in a single plane. Translucent white polyps with distinctively yellow bases. Found under ledges.



Sea rods live mainly in shallow waters, though larger colonies can be found at greater depths. Their color often varies depending on whether their tentacles are open or retracted. Most are yellow or brownish but on deeper reefs and under dark ledges they can be very colorful.



BLACK SEA ROD

(*Plexaura homomalla*) 60 cm / 2 ft

Large bushy colonies of branching black rods. Light brown polyps. Commonly found in the shallows.



BLACK SEA ROD (VARIATION)

(*Plexaura homomalla*)

With the lighter polyps retracted, the rod appears dark or black, with raised bumps around the polyp apertures.



KNOBBY SEA RODS (VARIATION)
(*Eunicea* spp.)

Knobby Sea Rods come in many colors, from light brown to purple (most noticeable when polyps are retracted).



KNOBBY SEA RODS
(*Eunicea* spp.) 90 cm / 3 ft

Numerous species, usually branching in a single plane. With polyps retracted, branches have a knobby surface.



DOUGHNUT SEA ROD
(*Eunicea fusca*) 45 cm / 1.5 ft

Short bushy colonies. Yellow to brown polyps with rounded swollen apertures. Found on shallow reefs.



SWOLLEN-KNOB CANDELABRUM
(*Eunicea mammosa*) 45 cm / 1.5 ft

Light yellow to brown rods, branching into a fan shape. Knobby appearance from densely packed tubular polyps.



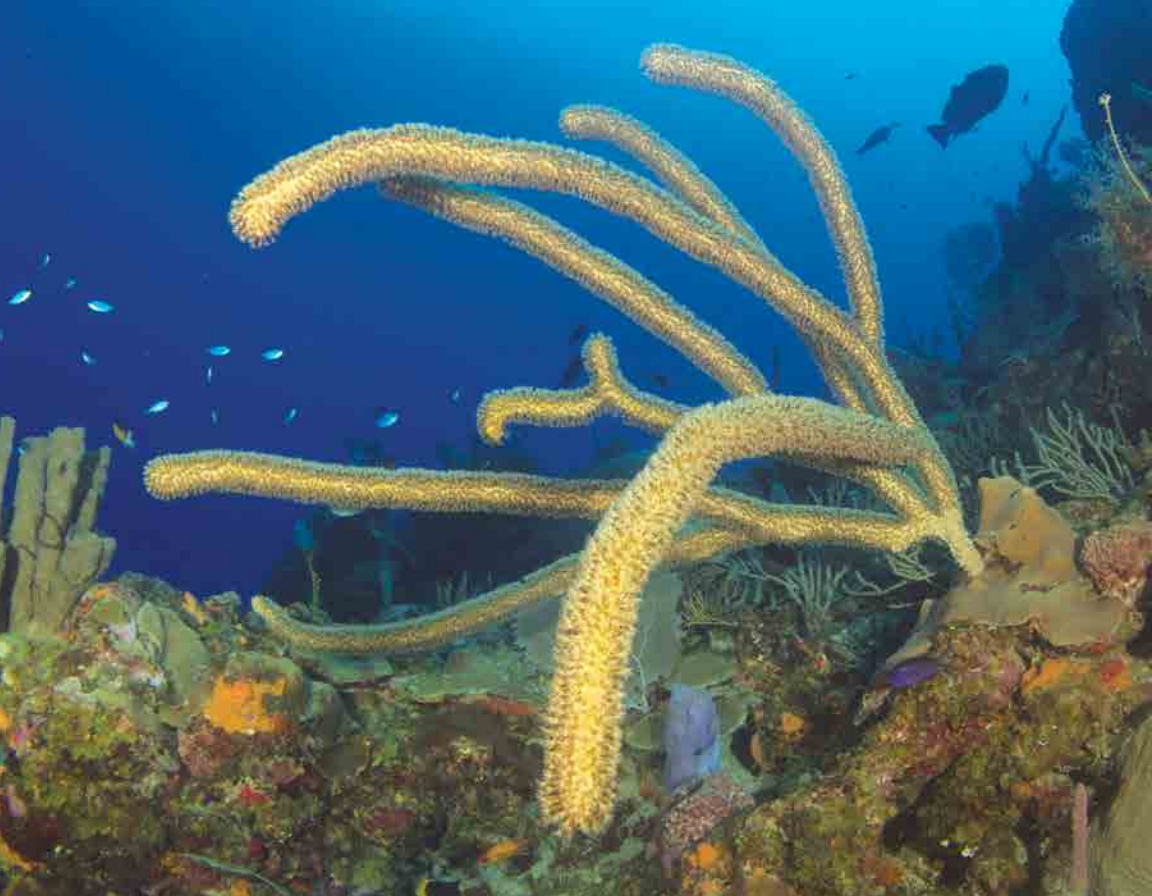
TUBE-KNOB CANDELABRUM
(*Eunicea laxispica*) 30 cm / 1 ft

Light yellow to brown rods with little branching. Widely spaced polyps are longer than *E. mammosa* (above).



WARTY SEA RODS
(*Eunicea calyculata*) 90 cm / 3 ft

Distinctively round non-tapering rods, branching to form bushy structures. Not found growing in a single plane.



GIANT SLIT-PORE SEA RODS

(*Plexaurella nutans*) 2.2 m / 7 ft

Thick elongated rods growing from a common base. Polyps have slit-like apertures. Often found in stronger currents.



Gorgonians provide an excellent shelter for many fish species that can hide among the stalks, such as Longsnout Seahorses (p. 344) and Slender Filefish (p. 367). Sometimes butterflyfish or smaller mollusks like the Flamingo Tongue (p. 222) can be found feeding on the fleshy polyps.



POROUS SEA RODS

(*Pseudoplexaura* spp.) 2.2 m / 7 ft

Tall bushy colonies of fleshy rods, seldom branching. Pale polyps from low rounded apertures, often retracted.



SLIT-PORE SEA ROD

(*Plexaurella* sp.) 1.2 m / 4 ft

Sparse rods growing from a common base. With polyps retracted (pictured above), slit-like apertures are visible.



DELICATE SPINY SEA ROD

(*Muricea laxa*) 45 cm / 1.5 ft

Slender pale rods branch into a tall bush. Numerous thin long branchlets. Retracted polyps have a spiny aperture.



SHELF KNOB SEA ROD

(*Eunicea succinea*) 60 cm / 2 ft

Yellow to brown fan or bush shape. The base of each polyp has a shelf-like projection (visible when retracted).



ORANGE SPINY SEA RODS

(*Muricea elongata*) 45 cm / 1.5 ft

Bushy orange to pale brown colonies. Dense polyps with sharply pointed lower aperture lips. Common in shallows.



BENT SEA ROD

(*Eunicea flexuosa*) 40 cm / 16 in

Rounded light brown branches, growing in fan shapes in a single plane. Polyp mouths are only slightly raised.



SLIMY SEA PLUME

(*Antillologorgia americana*) 1 m / 3.2 ft

Short side-branchlets grow in a single plane to form feather-like shapes. Commonly purple to pale yellow.



ROUGH SEA PLUME

(*Muriceopsis flavida*) 75 cm / 2.5 ft

Thin side-branchlets grow out in all directions to form a tall bushy shape. Polyps are randomly distributed.



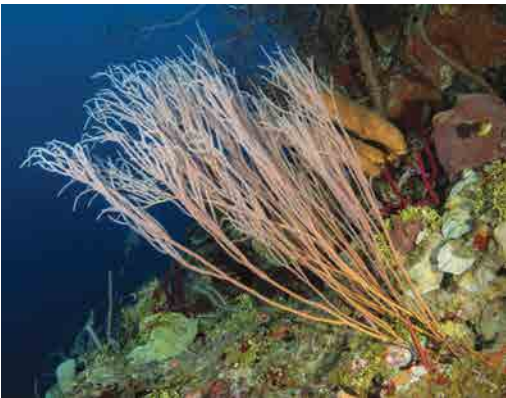
BUSHY SEA WHIP

(*Ellisella schmitti*) 60 cm / 2 ft

A single stalk branches and re-branches, forming a fan shape. Bright red with white polyps. Found under ledges.



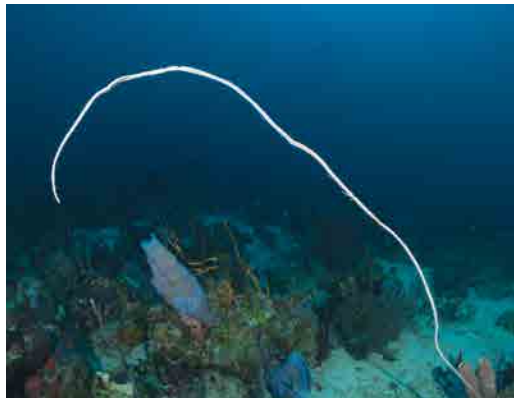
Sea whips can sometimes be mistaken for black corals (p. 90). Some species can be found in similar areas: at greater depths and under ledges and overhangs. Sea whips are octocorals, with eight tentacles on each polyp, whereas the black coral polyp only has six non-retractable tentacles.



LONG SEA WHIP

(*Ellisella elongata*) 1.5 m / 5 ft

Dozens of thin red stalks branching out from a single base. Tiny dense white polyps. Found on deeper reefs.



DEVIL'S SEA WHIP

(*Ellisella elongata*) 2.5 m / 8 ft

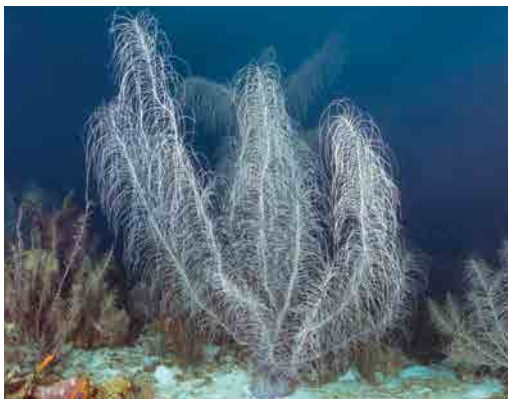
Long whip-like stalk, tapering slightly towards the tip. Red to orange with white polyps. Found on deeper reefs.



BIPINNATE SEA PLUME

(*Antillologorgia bipinnata*) 60 cm / 2 ft

Widely spaced branches in a single plane. Shorter paired side-branchlets. Most commonly found in purple.



SEA PLUMES

(*Antillologorgia* sp.) 2.2 m / 7 ft

Tall delicate stalks in gray or purple, rarely branching. Long thin side-branchlets. Polyps are brown to gray.



BIPINNATE SEA PLUME (VARIATION)

(*Antillologorgia bipinnata*)

Occasionally the branches of the Bipinnate Sea Plume will be pale pink, yellow or even dull whitish in color.



YELLOW SEA WHIP

(*Pterogorgia citrina*) 35 cm / 14 in

Short bushy colonies of flattened branches. Bright yellow with translucent white polyps on all branch edges.



GROOVED BLADE SEA WHIP

(*Pterogorgia guadalupensis*) 60 cm / 2 ft

Flattened purple branches in fan or bush shapes. White polyps extend from grooves running down both edges.



ANGULAR SEA WHIP

(*Pterogorgia anceps*) 60 cm / 2 ft

Bushy colony of long tapering branches. Each branch divided into X or Y shape when seen in cross section.



There has recently been a dramatic upsurge in the number of diseases that are threatening coral reefs throughout the Caribbean; over 30 have been identified so far. The cause varies with each disease but their rise has been linked to runoff from increased human development in coastal areas. They can be spread to new reefs by cruise ships and regular shipping. Once they arrive, animals like butterflyfishes and fireworms will spread it even further. The series below shows the progress of a coral disease in just over one month, killing off a brain coral colony that could be a century old.





BLACK BAND DISEASE (BBD)

(Pathogen: *Roseofilum reptotaenium*)

Black to reddish-brown band of cyanobacteria. Attacks a variety of hard corals. Spreads up to 60 cm per month.



RED BAND DISEASE (RBD)

(Pathogen: *Oscillatoria* spp.)

Filamentous red line of cyanobacteria. Attacks sea fans as well as hard corals. Spreads up to 5 cm per month.



CORAL GROWTH ANOMOLY (GA)

(Pathogen: unknown)

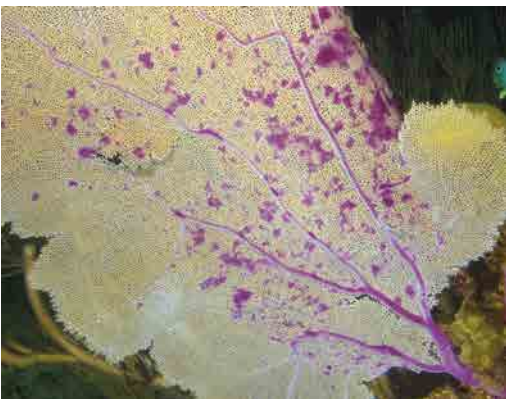
Tumor-like structures. Possibly genetic mutations or a reaction to the presence of fungi, algae or invertebrates.



DARK SPOTS DISEASE (DSD)

(Pathogen: unknown)

Irregular dark blotches, often depressed. Most common on Lesser Starlet Coral. Only limited partial mortality.



PURPLE SPOTS DISEASE (PS)

(Pathogen: Labyrinthulomycote protozoan)

Small purple spots covering the Common Sea Fan and other octocorals. No major mortality in affected areas.



ASPERGILLOSIS (ASP)

(Pathogen: fungus, *Aspergillus sydowii*)

Fungal infection on sea fans and other octocorals. Slow spread of 0.5 cm a month leads to partial or full mortality.



STONY CORAL TISSUE LOSS DISEASE (SCTLD)

(Pathogen: Unknown)

Irregular spots or bands of exposed white skeleton, often from multiple points on a colony. Sloughing coral tissue is visible at tissue-loss margin.



By far the most horrific new threat to Caribbean reefs, SCTLD was first discovered in Florida in 2014 and has rapidly spread south to affect many areas. It attacks a wide variety of stony corals, causing over 60% loss in coral coverage on reef ecosystems. Even the largest coral colonies, centuries old, can show complete mortality in just under two months.

The cause of this sudden outbreak is still unknown but its spread to the entire region seems inevitable. The diseases on the following page can all be confused with SCTLD, but its presence is unmistakable by its speed and destructiveness.



Typically the first signs that SCTLD has arrived at a new reef are small lesions in just a few colonies. Pillar Coral is perhaps the most susceptible of all, followed quickly by maze and brain corals.



Pillar Coral



Maze Corals



Brain Corals



COMPROMISED HEALTH IN HARD CORALS (CHC)
(Pathogen: unknown)

Irregular spots, bands or rings of unhealthy coral tissue, often discolored and tissue sloughing off the skeleton.



WHITE PLAGUE (WP)
(Pathogen: unknown)

Wide band of exposed white skeleton. Moves quickly, at up to 10 cm a day, usually leading to full mortality.



YELLOW BAND DISEASE (CYBD)
(Pathogen: Bacteria, *Vibrio* spp.)

Wide yellow bands, starting at colony edge or at multiple points. Can spread 4 cm a month. Partial to full mortality.



CARIBBEAN WHITE SYNDROME (CWS)
(Pathogen: Unknown)

Irregular patterns of tissue loss, spreading from different points on a colony. Slow-moving. Partial to full mortality.



WHITE BAND DISEASE (WBD)

(Pathogen: Bacteria, *Aquarickettsia rohweri*)

Found only on acroporids. Wide band of white skeleton spreading up to 10 cm a day. Partial to full mortality.




CARIBBEAN CILIATE INFECTION (CCI)

(Pathogen: Folliculinid ciliates, *Halofolliculina* sp.)

Scattered bands of tiny dark ciliates, lagging behind exposed skeleton. Slow spread, usually to full mortality.



 Jellies are some of the oldest forms of life on Earth; they have been around for over 650 million years, long before the dinosaurs. They are about 95% water and have a very simple nervous system used to detect light, salinity and orientation. Some species are bioluminescent, producing their own green or blue light.

They feed on zooplankton and even small fish. Some juvenile fishes, such as the small jack on the left, actually find protection from larger predators in the open ocean by hiding among the stinging tentacles.

The Thimble Jelly (on the right) can gather in swarms of millions of individuals. This is called a “bloom,” occurring in late spring to summer. It is the larvae of these jellies, often called “sea lice,” that can sting and cause rashes.

The sting of other jellies can be quite painful to divers. The best treatment is to gently remove any tentacles from the skin with tweezers or scrape them off with a card. Do not rub the area or apply fresh water. This will only cause more of the stinging cells to activate. Rinse with vinegar or seawater and then soak the affected area in hot water to break down the protein-based venom.





MOON JELLIES

(*Aurelia* spp.) 40 cm / 16 in

Large translucent bell with four-leaf-clover pattern inside. Short thin tentacles around the rim. Numerous species.



WARTY JELLY

(*Pelagia noctiluca*) 10 cm / 4 in

Rounded bell with dark yellow or purple spots. Color ranges from translucent pink to yellow. Four oral arms.



MARBLED JELLY

(*Lychnorhiza lucerna*) 15 cm / 6 in

Rounded bell, often with marbled black markings. Bulbous oral arms. Shorter clusters of white tentacles.



CANNONBALL JELLY

(*Stomolophus meleagris*) 25 cm / 10 in

Spherical bell with a short skirt of tentacles below. Red, yellow or bluish markings, mostly around the rim.



THIMBLE JELLY

(*Linuche unguiculata*) 2 cm / 0.8 in

Thimble-shaped bell is transparent on top and brown beneath. Few short tentacles. Often in large blooms.



PINK MEANIE

(*Drymonema larsoni*) 90 cm / 3 ft

Smooth flattened bell, pale pink to purplish or orange. Four large tufted lobes and thin tentacles over 20 m long.



Sea Wasps can deliver a painful sting. Four long trailing tentacles, armed with stinging cells called nematocysts, are used to immobilize prey such as larval fishes. The captured prey is then transferred up into the bell where the slow process of digestion begins, as seen in the picture above. These animals are most commonly encountered at night, often in shallow protected areas, and they can be attracted to a diver's light. They are most abundant eight to ten nights after a full moon, when large numbers may congregate near the surface for spawning.



SEA WASP

(*Alatina alata*) 25 cm / 10 in

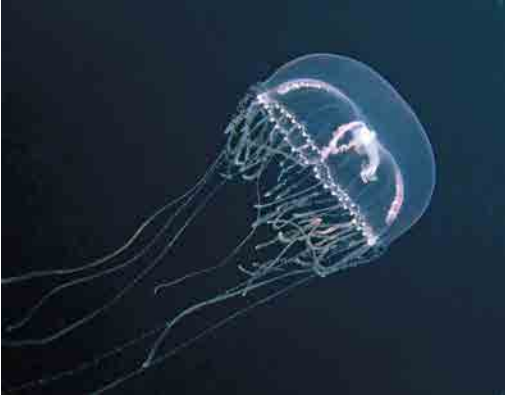
Smooth transparent bell with four long thin trailing tentacles. Sting causes intense pain. Found in shallows.



BANDED BOX JELLY

(*Tamoya ohboya*) 15 cm / 6 in

Gelatinous bell with nematocyst warts. Four tentacles with red banding (may be retracted while swimming).



AGUA VIVA JELLY

(*Olindias sambaquiensis*) 5 cm / 2 in

Rounded bell, wider than it is tall. Purple radial canals. Short primary tentacles, long thin secondary tentacles.



DELICATE HYDROMEDUSA

(*Olindias tenuis*) 5 cm / 2 in

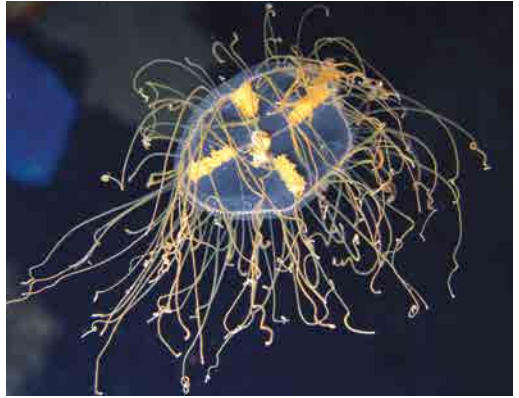
Clear bell with four radial canals. Thick primary tentacles surrounded by numerous thinner marginal tentacles.



HITCHHIKING JELLY

(*Vallentinia gabriellae*) 1.5 cm / 0.6 in

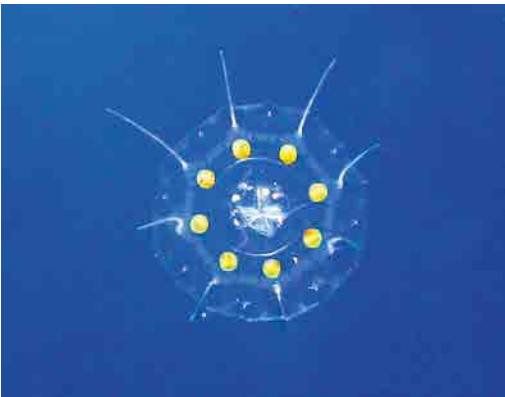
Clear bell, taller than it is wide. Four distinct orange radial canals. Up to 100 short bright orange tentacles.



CLINGING JELLY

(*Gonionemus cf. vertens*) 5 cm / 2 in

Clear bell with dozens of orange tentacles around the rim. Tentacles with sticky pads for holding onto the reef.



CROWN JELLY

(*Nausithoe maculata*) 1.5 cm / 0.6 in

Small translucent dome with eight thin tentacles, half the width of the dome, with round yellow bulbs at each base.



ZANCLEOPSIS JELLY

(*Zancleopsis dichotoma*) bell: 1.5 cm / 0.6 in

Small elongated bell with a pointed tip. Four long trailing tentacles with distinctive rows of small white bulbs.



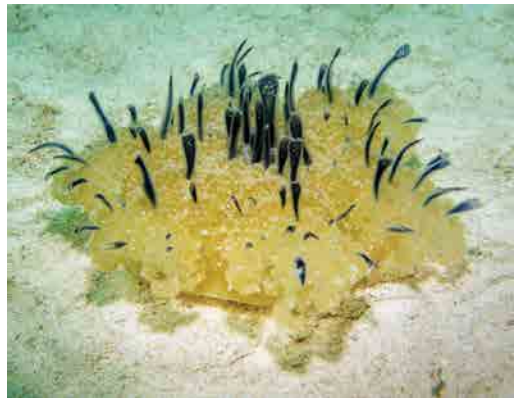
Upsidedown Jellies are most common in sheltered bays and lagoons and they rarely swim. The flattened bell acts like a suction cup to hold them onto the sandy bottom, with their short branching tentacles facing towards the sun. The brownish color comes from symbiotic algae living in the tissue, photosynthesizing sugars to sustain the jelly. Oxygen is also produced, allowing them to thrive in oxygen-poor water. They release a cloud of stinging cells to feed on passing plankton. Look into the tentacles to find the *Cassiopea Dondice* (p. 199), a nudibranch found nowhere else.



UPSIDEDOWN JELLY

(*Cassiopea frondosa*) 25 cm / 10 in

Flattened bell with short clustered tentacles, pale brown with blunt white tips. Found upside down in the shallows.



MANGROVE UPSIDEDOWN JELLY

(*Cassiopea xamachana*) 30 cm / 1 ft

Long flattened green to bluish appendages scattered within the tentacles. Mostly in lagoons and mangroves.



BANDED HYDROMEDUSA

(*Aequorea* sp.) 7.5 cm / 3 in

Wide white canals radiate up from the margin of the bell. Long tentacles are widely spaced around the margin.



JELLY HYDROMEDUSA

(*Aequorea forskalea*) 10 cm / 4 in

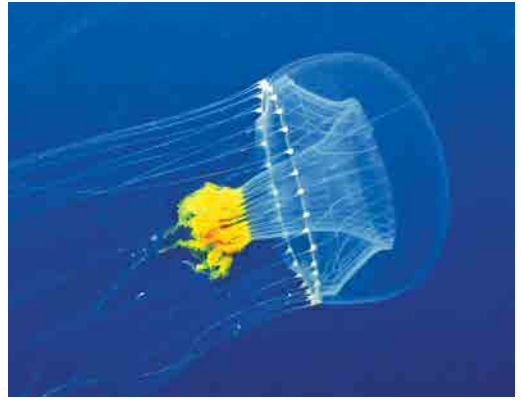
Transparent dome. Numerous tentacles attach to the bell and also appear to continue onto it in radial lines.



CYAN HYDROMEDUSA

(*Aequorea neocyanea*) 10 cm / 4 in

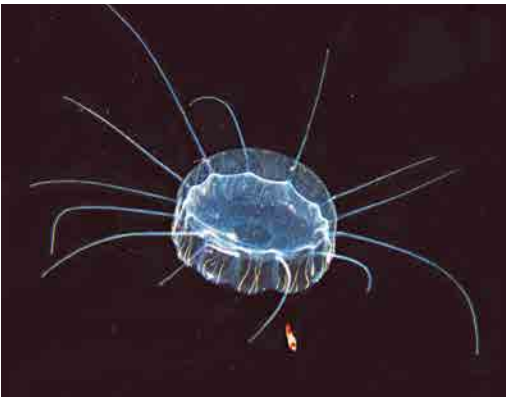
Radial canals extend onto a large belly, half of the bell's diameter. Sparse thin tentacles, swollen at the base.



CLUB HYDROMEDUSA

(*Orchistoma pileus*) 2.5 cm / 1 in

Bulbous translucent bell and numerous thin tentacles. Distinctive club-shaped organs where tentacles attach.



CUNINA JELLY

(*Cunina* sp.) 5 cm / 2 in

Clear rounded bell with a whitish rim and large posterior opening. Few widely spaced tentacles, thin and pointed.



DICHOTOMOUS MEDUSA

(*Dichotomia cannoides*) 1.5 cm / 0.6 in


Elongated bell with visible golden brown branching canals. Long thin tentacles retracted when swimming.



BOLINOPSIS COMB JELLY

(*Bolinopsis vitrea*) 10 cm / 4 in

Transparent body with four wing-like flaps. Internal organs visible at night. Distinct lobes gather in towards the mouth.

 Comb jellies are ctenophores that get their name from rows of tiny hairs called cilia that wave back and forth rapidly, propelling them through the water, often flashing multicolored lights. Ctenophore shapes vary from long ribbons to a small benthic (bottom-dwelling) form, as seen below.



VENUS'S GIRDLER

(*Cestum veneris*) 1.5 m / 5 ft

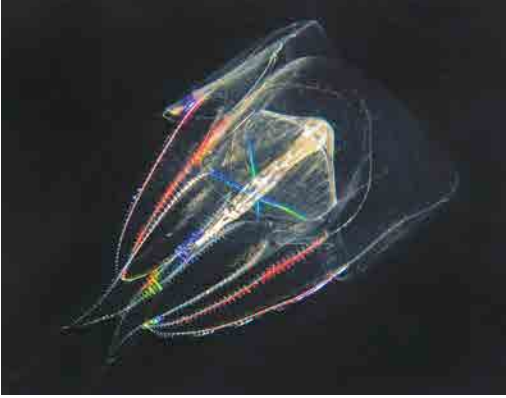
Transparent ribbon-like body with a thin central band. Lower edge of cilia may show bluish-green fluorescence.



BENTHIC CTENOPHORE

(*Vallicula multiformis*) 2.5 cm / 1 in

Flat body with pale contractile tentacles from either end. Color matches substrate, with pink or brown highlights.



REDSHOT COMB JELLY

(*Eurhamphaea vexilligera*) 9 cm / 3.5 in

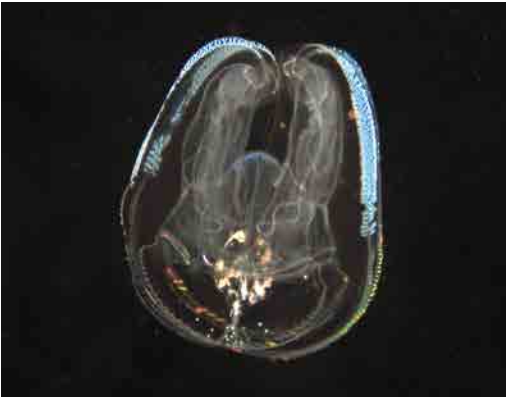
Elongated body with short oral lobes. Cilia appear as lines of flashing red spots running parallel to the gut.



WARTY COMB JELLY

(*Leucothea multicornis*) 20 cm / 8 in

The largest comb jelly. Long warty protrusions on body and large oral lobes, which may have brown markings.



CRYSTAL COMB JELLY

(*Ocyropsis crystallina*) 9 cm / 3.5 in

Short flattened body with widely spaced lobes and visible musculature. Comb rows run perpendicular to the gut.



SPOTWING COMB JELLY

(*Ocyropsis maculata*) 10 cm / 4 in

Transparent to milky-white translucent body. Most often with four brown to black spots on the rounded oral lobes.



SEA GOOSEBERRY

(*Hormiphora* sp.) bell: 1.5 cm / 0.6 in

Tiny transparent oval body with reddish highlights. Two long thin tentacles extend outwards for catching prey.



BEROE COMB JELLY

(*Beroe forskalii*) 15 cm / 6 in

Flattened transparent to purplish body with tapered end. Fast-moving, aggressively feeds on other comb jellies.



SPIRAL SIPHONOPHORE

(*Forskalia* sp.) bell: 7.5 cm / 3 in

Swimming zooids arranged in a spiral. Thin tentacles with numerous large feeding zooids and tiny red stinging tentilla.

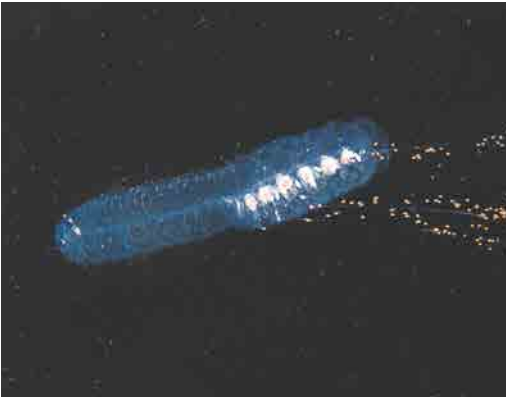


Siphonophores can occasionally drift over reefs and these planktonic animals should be treated with caution. The most noticeable is the Portuguese Man-of-War, with a float that keeps the main body on the surface. Others have small floats that keep them neutrally buoyant in the water column. Siphonophores are colonies made up of numerous tiny animals called zooids, each with a specialized job. They hunt by trailing long tentacles with bright tentilla (pictured left), used for catching prey. The tentacles of some species may reach over 10 meters and should be given a wide berth.

The tentilla contain stinging cells called nematocysts. Upon contact, these cells fire a tiny harpoon-like barb that injects a strong venom into the prey (right).

Despite this venom, some animals have developed a taste for siphonophores, such as the planktonic larval lobster (far right), often seen carrying siphonophores about for both food and protection.

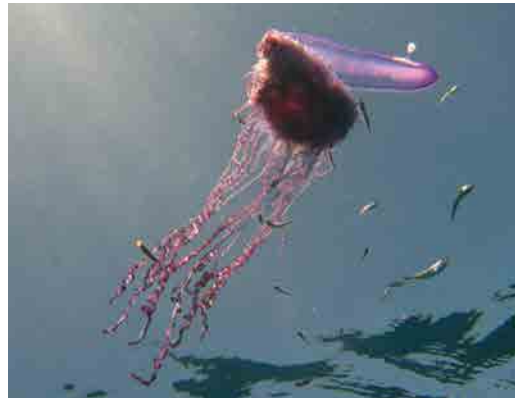




ROBUST AGALMA SIPHONOPHORE

(*Agalma okenii*) bell: 10 cm / 4 in

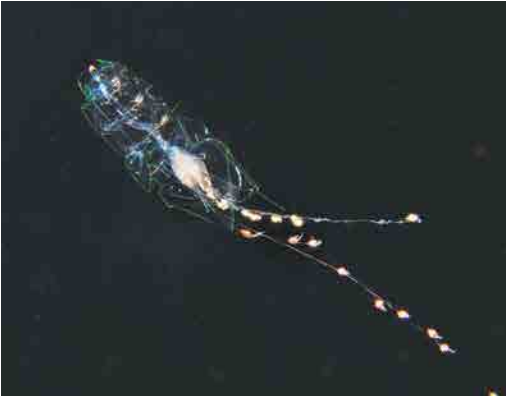
Main body as a cluster of swimming zooids. Thin feeding tentacles with red tentilla can reach lengths of 2 m / 6 ft.



PORTUGUESE MAN-OF-WAR

(*Physalia physalis*) float: 15 cm / 6 in

Pale purple gas-filled float with pinched edge along top. Purple trailing tentacles can reach up to 50 m / 160 ft.



DELICATE AGALMA SIPHONOPHORE

(*Agalma elegans*) bell: 10 cm / 4 in

Transparent body with short tentacles up to 30 cm / 1 ft. Small individuals may show a greenish bioluminescence.



FLOATING SIPHONOPHORE

(*Rhizophysa* sp.) 5 cm / 2 in

A small bubble of air is attached above the main body. Tentacles with bright pink tentilla can reach 10 m / 30 ft.



ROSACEA SIPHONOPHORE

(*Rosacea plicata*) bell: 3 cm / 1.2 in

Transparent twin-lobed body. Long trailing tentacles with small pinkish tentilla and larger feeding zooids.



BARBED WIRE SIPHONOPHORE

(*Apoemia* sp.) bell: 10 cm / 4 in

Long ragged collection of retractable whitish zooids from a transparent oval body. Can reach up to 10 m / 30 ft.



GIANT ANEMONE

(*Condylactis gigantea*) 30 cm / 1 ft

The largest of the anemones. Dozens of long tentacles with blue, red or green bulbous tips. Orange or red pedal disc.



Anemones are from the same group of simple animals as corals, the cnidarians. They are made up of a pedal disc, used for attaching to the reef, and an oral disc with a single opening in the middle, serving as both a mouth and an anus. Around this opening are numerous tentacles armed with stinging cells called nematocysts. These can grab and immobilize their prey, including small fish. Some anemone species are able to move slowly across the reef, while others can detach themselves completely and drift to a more productive spot.

Some animals have evolved to make use of the stinging tentacles of anemones as a shelter. The Pederson Cleaner Shrimp (p. 249) lives in the thin tentacles of the Corkscrew Anemone and the tiny Squat Anemone Shrimp (p. 257) is often found on the Giant Anemone. The eyes of the Banded Clinging Crab (pictured on the right) are perfectly camouflaged while poking out of the tentacles of the Knobby Anemone. These animals are able to resist the stings of the anemone, and in return for protection they keep it clean of debris, foraging on the anemone's waste.





SUN ANEMONE

(*Stichodactyla helianthus*) 15 cm / 6 in

Flattened oral disc is completely covered with short rounded green or brown tentacles. Prefers shallows.



RED WARTY ANEMONE

(*Bunodosoma granuliferum*) 13 cm / 5 in

Reddish pedal disc covered with pale warty knobs. Short pointed olive-green tentacles with red and yellow bands.



ELEGANT ANEMONE (VARIATION)

(*Actinoporus elegans*)

Highly variable in color, the Elegant Anemone can appear white, purple, bright orange or a mottled brown.



ELEGANT ANEMONE

(*Actinoporus elegans*) 23 cm / 9 in

Only the oral disc appears above sand, with short round tentacles. Retracts into a donut shape during the day.



COLLARED SAND ANEMONE

(*Actinostella flosculifera*) 16 cm / 6.4 in

Flattened oral disc with bulbous warty projections. Tentacles around rim formed into rectangular shapes.




BEADED ANEMONE

(*Phymanthus crucifer*) 16 cm / 6.4 in

Flattened oral disc with small warty projections in radiating lines. Numerous short pointed tentacles.



 Anemones are often difficult to identify on a dive because of the variety of colors and patterns that each species can display. Pictured above is a rarely seen color variation of the more common Club-tipped Anemone.

Some anemones seem to produce their own light, known as fluorescence, as seen with the Beaded Anemone pictured on the left. This is caused by a protein growing inside the flesh of their tentacles. It is thought to be protection from the harmful ultraviolet radiation in bright sunlight, a kind of biological “sunscreen” that some anemones can apply when needed.

Anemones have a multitude of ways to feed themselves. Tentacles can simply grab food as it floats by. Many live in a symbiotic relationship with single-celled algae that live in their tissues, just like the closely related corals. The algae have a safe place to grow, while the anemone gets the oxygen and sugars produced by photosynthesis. If needed, anemones can also absorb vital nutrients directly from the surrounding seawater. Most anemones are able to retract their tentacles if threatened. Some species, such as the Sun Anemone, can live to be many decades old.





TELMATACTIS ANEMONE

(*Telmatactis* sp.) 10 cm / 4 in

An undescribed species. Anemones in this genus are characterized by having swollen tips on the tentacles.



CLUB-TIPPED ANEMONE

(*Telmatactis cricoides*) 10 cm / 4 in

Flattened disc, sometimes flecked with pale spots. Large bulbous tips on tapering tentacles. Variable in color.



MAROON ANEMONE

(*Telmatactis vernonia*) 5 cm / 2 in

Pale tentacles become maroon towards the mouth. The oral disc has large pale blotches. Shallow reefs or sand.



BRAZILIAN ROCK ANEMONE

(*Bellactis ilkalypseae*) 4 cm / 1.6 in

Short grayish-blue bulbous tentacles, often with paler tips. Translucent pedal disc. Shallow reefs to intertidal.



BROWN ANEMONE

(*Exaiptasia diaphana*) 2.5 cm / 1 in

Brown oral disc with a whitish central mouth. Tentacles of different lengths. Common in lagoons and mangroves.



HITCHHIKING ANEMONE


(*Calliactis tricolor*) 7.5 cm / 3 in

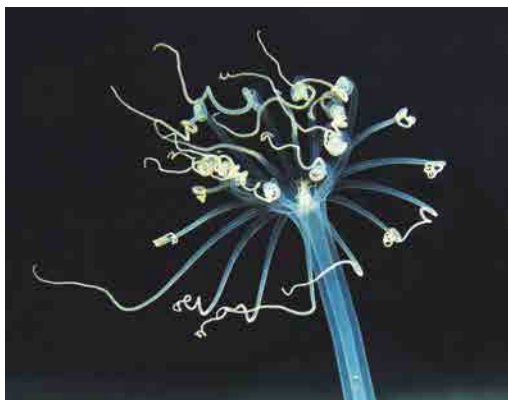
Found attached to hermit crab shells. Large pedal disc, variable in color from brown to reddish. Pale tentacles.



BANDED TUBE-DWELLING ANEMONE

(*Isarachnanthus nocturnus*) tentacles 5 cm / 2 in
 Long banded tentacles surrounding a white oral disc.
 Central tuft of short pale to lavender tentacles. Nocturnal.

 Tube-dwelling anemones (subclass: Ceriantharia) are only distant relatives of sea anemones and have two crowns of tentacles. They hide in long fibrous tubes until nightfall, when they extend their tentacles into the water column to feed. They can retract very quickly when threatened.



TRANSPARENT TUBE-DWELLING ANEMONE

(*Arachnanthus* sp.) 25 cm / 10 in
 Long transparent body with thin translucent tentacles.
 Retreats quickly into sand when disturbed. Nocturnal.



UNDESCRIBED ANEMONE

(Order: Actiniaria)
 Highly diverse, there are still new species of anemone to be discovered and described throughout the Caribbean.



TURTLE GRASS ANEMONE

(*Bunodeopsis globulifera*) 2 cm / 0.8 in

Flattened body column with noticeably smaller vesicles than *B. antilliensis*. Tentacles rarely extended in daytime.



BLISTERED GRASS ANEMONE

(*Bunodeopsis antilliensis*) 3.5 cm / 1.4 in

Irregular flattened body column, covered in large pale bulbous projections (vesicles) when tentacles retracted.



HIDDEN ANEMONE

(*Lebrunia coralligens*) 5 cm / 2 in

Rows of tiny brown tentacles poking out from crevices in the reef. Pale rounded tips are sometimes striped.



BRANCHING ANEMONE

(*Lebrunia neglecta*) 30 cm / 1 ft

Small brownish knobs on thin branching finger-like tentacles. Often with pale brown to white highlights.



KNOBBY ANEMONE

(*Laviactis lucida*) 15 cm / 6 in

Numerous long transparent tentacles from a hidden oral disc. Small densely packed knobs of stinging cells.



CORKSCREW ANEMONE

(*Bartholomea annulata*) 20 cm / 8 in

Numerous transparent tentacles have a spiraling white pattern. Oral disc usually hidden. Found in sandy areas.



Corallimorphs, once thought to be anemones, are also known as mushroom corals. Although they share features with both corals and anemones they are now placed in a group by themselves. Like their coral cousins they can feed using the symbiotic algae in their flesh, but they are not able to produce an internal skeleton. They differ from anemones by having to remain attached to the same place on the reef, while many anemones can move. They may grow individually or in large mats covering wide areas of the reef. Chemical defenses prevent them from being overgrown by corals.



WARTY CORALLIMORPH (VARIATION)
(*Rhodactis osculifera*)

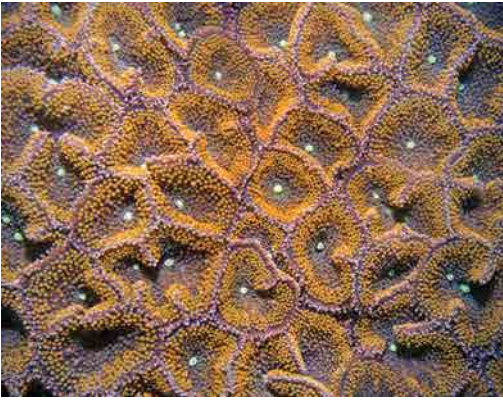
Flattened disc with large swollen bulbous tentacles. Greenish-blue with white spots, may have pointed tips.



WARTY CORALLIMORPH

(*Rhodactis osculifera*) 9 cm / 3.5 in

Flattened disc with tentacles ending in forked projections. Shorter tentacles around rim. May be found in clusters.



FLORIDA CORALLIMORPH (VARIATION)
(*Ricordea florida*)

Grows singly or in dense clusters. This corallimorph is also able to fluoresce, seeming to give off its own light.



FLORIDA CORALLIMORPH
(*Ricordea florida*) 5 cm / 2 in

Rounded densely packed tentacles radiating from a pale central mouth. Longer tentacles found closer to the rim.



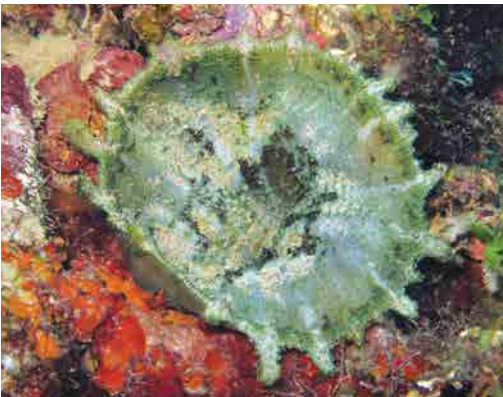
FORKED TENTACLE CORALLIMORPH
(*Discosoma carlgreni* VARIATION)

Highly variable in color and patterns, from bluish-green to red or purple. Found individually or in small clusters.



FORKED TENTACLE CORALLIMORPH
(*Discosoma carlgreni*) 7.5 cm / 3 in

Flattened disc in a variety of colors, usually blotched. Small forked tentacles in lines radiating from the mouth.



UMBRELLA CORALLIMORPH
(*Discosoma neglecta*) 7.5 cm / 3 in

Wide flattened oral disc with short rectangular tentacles arranged around the outer edges. Typically solitary.



ORANGE BALL CORALLIMORPH
(*Corynactis caribbeorum*) 5 cm / 2 in

Orange body and pale brown to yellow oral disc. Long transparent tentacles tipped with bright orange balls.



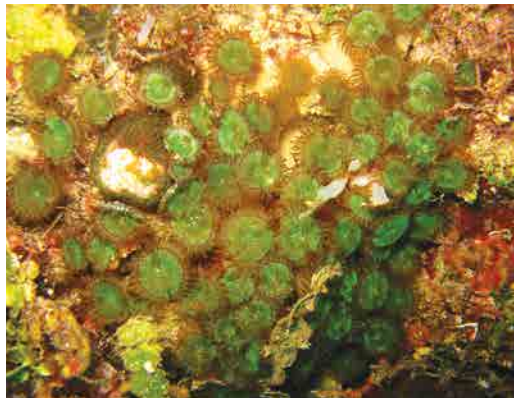
At first glance, zoanthids appear to be tiny coral polyps. On close inspection one can see small holes or slits in the middle of the oral discs that act as mouths for these tiny creatures. Zoanthids have two rows of tentacles around the disc. They can be solitary but are most often found in clusters, reproducing asexually (with the offspring remaining connected) and forming dense mats across the top of the reef. They are very hardy animals; given enough food and sunlight they can spread quickly, adding as many as two or three new polyps to the colony every week.



MAT ZOANTHID

(*Zoanthus pulchellus*) 1.5 cm / 0.6 in

Gray, green or brown oral discs surrounded by short tentacles. Can grow in dense mats over large areas.



MAT ZOANTHID (VARIATION)

(*Zoanthus pulchellus*)

Color and density are highly variable, in loose patches of individuals or in clusters. May show bright fluorescence.



BROWN ZOANTHID (VARIATION)
(*Zoanthus* sp.)

Often found growing in tightly packed clusters with overlapping edges. All have whitish markings inside.



BROWN ZOANTHID
(*Zoanthus* sp.) 1.5 cm / 0.6 in

Greenish disc with a white center and radiating lines. Short brown tentacles. Darker brown ring near the rim.



SOLITARY ZOANTHID
(*Palythoa* sp.) 4 cm / 1.6 in

An undescribed species. Similar to *P. grandis* but with unusually long tapering tentacles around the oral disc.



ENCRUSTING ZOANTHID
(*Palythoa caribaeorum*) 1.5 cm / 0.6 in

Short tentacles arranged around a raised circular disc. Grows in loose clusters within a common fleshy base.



SUN ZOANTHID (VARIATION)
(*Palythoa grandis*)

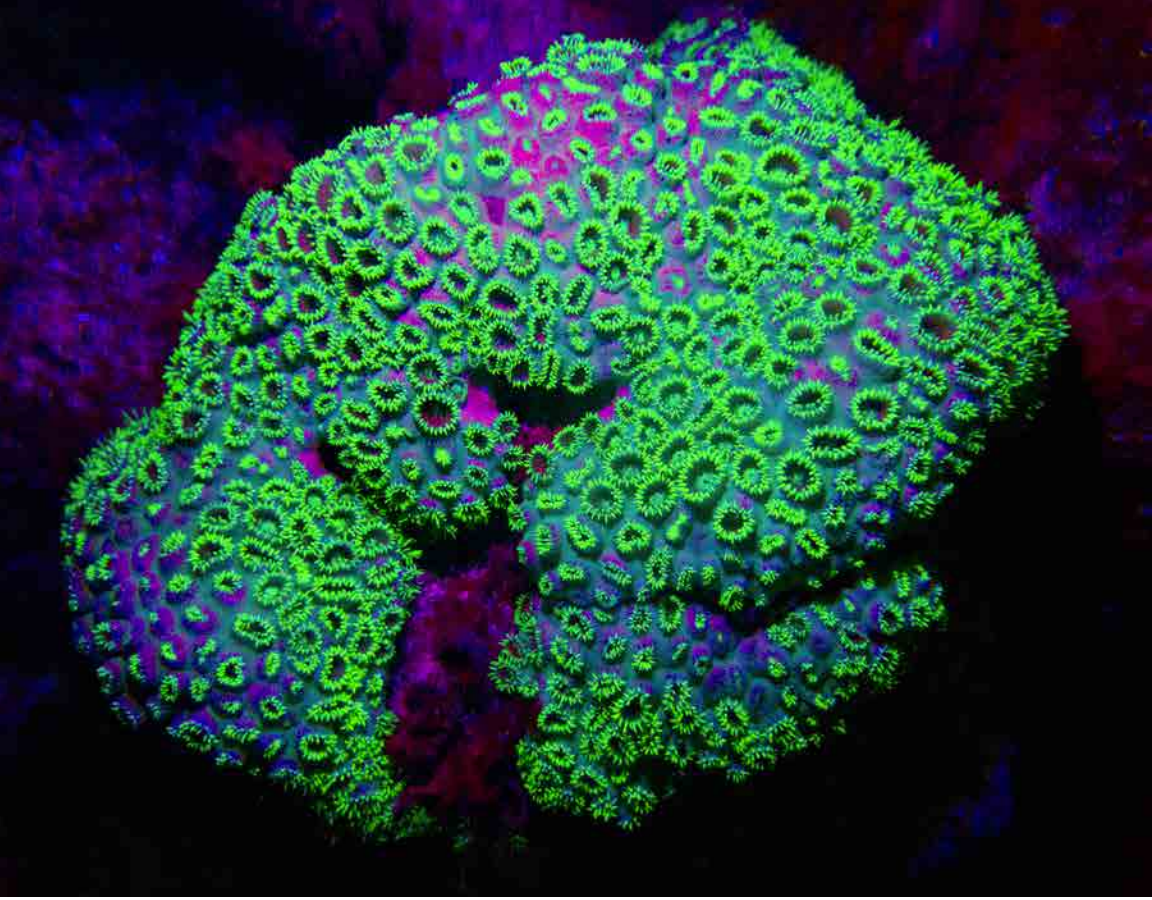
Sun Zoanthids grow singly or in small clusters and have a range of colors from light brown to green or reddish.



SUN ZOANTHID

(*Palythoa grandis*) 3 cm / 1.2 in

Large flattened disc, often mottled with patches of white. Lines radiate from a pale central mouth. Short tentacles.



The bright colors of zoanthids come from symbiotic algae, called zooxanthellae, that live within the tissues, just as in the true reef-building corals. Pigments in the flesh help protect them from the sun's harmful radiation in the shallows, seen pictured above under ultraviolet light.

Zoanthids are able to take in small particles of sand and debris to help them maintain their body shape, unlike the true corals that actually produce their own calcium carbonate skeletons to live in. They are not reef-builders, they merely borrow tiny bits of it for their own use.



KNOBBLY ZOANTHID

(*Isaurus tuberculatus*) 5 cm / 2 in

Stiff tubular body with a rough surface. Mouth usually bent inwards. Grows out of holes in the reef. Nocturnal.



SNAKE POLYPS

(*Isaurus* spp.) 5 cm / 2 in

Often found in loose clusters of individuals. Colors are highly variable. Many have yet to be fully described.



SPONGE ZOANTHID

(*Umimayanthus parasiticus*) 6 mm / 0.2 in
Pale central disc with a brown circle inside. Short brown tentacles. Found encrusting vase and rope sponges.



GOLDEN ZOANTHID

(*Parazoanthus swiftii*) 6 mm / 0.25 in
Bright yellow body and tentacles, sometimes connected in short rows. Found encrusting deeper sponge species.



YELLOW SPONGE ZOANTHID

(*Bergia cutressi*) 6 mm / 0.2 in
Bright yellow tentacles around a darker yellow oral disc. The body is yellow. Found on deeper sponge species.



BROWN SPONGE ZOANTHID

(*Bergia catenularis*) 6 mm / 0.2 in
Pale brown tentacles around a darker brown oral disc. The body is white. Found on deeper sponge species.



HYDROID ZOANTHID

(*Hydrozoanthus tunicans*) 6 mm / 0.2 in
Light brown to yellow tentacles on a darker oral disc. Found encrusting the Feather Bush Hydroid (p. 136).



MAROON SPONGE ZOANTHID

(*Bergia puertoricense*) 6 mm / 0.2 in
Tentacles and body are deep purple to maroon. Often found encrusting on Dark Volcano Sponges (p. 51).



Tunicates are often overlooked on the reef. These simple animals can be mistaken for sponges as they have large openings, called siphons, for expelling water. Unlike sponges, they have bands of muscles around their bodies that allow them to close these siphons for protection.

Tunicates are filter feeders, removing microscopic bits of plankton from the seawater. They are covered in a firm but flexible tunic of flesh, hence their name. Individual animals may share this tunic, as well as a common large excurrent siphon for expelling their filtered seawater.

There are three main types of tunicates: larger tube-shaped animals where both of the siphons are visible, flat colonies of encrusting animals with only their excurrent siphons being visible and the free-floating planktonic tunicates that can sometimes drift over a coral reef from the open ocean.



Tube-shaped Tunicate



Encrusting Tunicate



Planktonic Tunicate



PAINTED TUNICATE

(*Clavelina picta*) 2 cm / 0.8 in

Transparent body with purple circles "painted" around the siphons. Often found in dense clusters of individuals.



BULB TUNICATES

(*Clavelina* spp.) 2 cm / 0.8 in

Collective name for the many species of tunicate with this general shape. Often found with yellow markings.



BLACK TUNICATE

(*Phallusia nigra*) 10 cm / 4 in

Solid black body and siphons with no distinctive markings. May be paler when growing under ledges.



MANGROVE TUNICATE

(*Ecteinascidia turbinata*) 5 cm / 2 in

Translucent orange body and siphons. Grows clustered in sandy reef areas, mangroves and seagrass beds.



OBLONG TUNICATE

(*Clavelina oblonga*) 2 cm / 0.8 in

Translucent to whitish body with white internal structures visible. White lines around siphons. Found in clusters.



GIANT TUNICATE

(*Polycarpa spongiabilis*) 10 cm / 4 in

Globular body with two large siphons, often encrusted in algae. Incurrent siphon has thin inward-facing spines.



BLUEBELL TUNICATE

(*Clavelina puertosecensis*) 1.5 cm / 0.6 in

Opaque, blue to purple body. Siphon rims are paler than the rest of the body. Commonly found in large clusters.



Tunicates are also called “sea squirts.” When threatened, they can squeeze their siphons fast enough to send out a small jet of water. There are over 140 tunicate species in the Caribbean. Highly variable growth and color patterns can make proper identification difficult underwater.



GREEN TUBE TUNICATE

(*Ascidia sydneiensis*) 13 cm / 5 in

Single greenish-yellow tube extending from the reef. Large incurrent siphon on a bulbous translucent tip.



REEF TUNICATE

(*Rhopalaea abdominalis*) 4 cm / 1.6 in

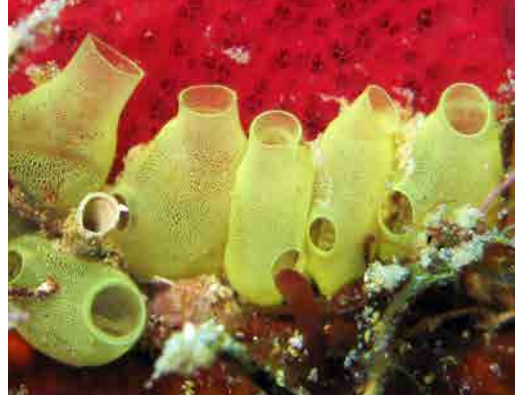
Smooth rounded body with large incurrent and excurrent siphons. Color variable from brown to lavender or purple.



MOTTLED SOCIAL TUNICATE

(*Polycarpa tumida*) 1.5 cm / 0.6 in

Brownish tunicates growing in clusters from a common tunic. Outer edges of the siphons are pale and mottled.



HONEYSUCKLE TUNICATE

(*Perophora viridis*) 1.5 cm / 0.6 in

Greenish-yellow with faint striations visible inside body. Found in loose clusters under ledges and overhangs.



BLACK OVERGROWING TUNICATE

(*Didemnum vanderhorsti*) 10 cm / 4 in

Colony made up of many tiny individuals in a common swollen black tunic. Scattered pale incurrent siphons.



WHITE SPECK TUNICATE

(*Didemnum conchylatum*) 5 cm / 2 in

Usually orange with white specks, in a tunic with shared excurrent siphons. Found growing in small clusters.



OVERGROWING TUNICATE (VARIATION)

(Family: Didemnidae)

Members of this tunicate family are highly variable in both color and markings as well as growth patterns.



OVERGROWING TUNICATE

(Family: Didemnidae) 15 cm / 6 in

Thin colorful mats of connected individuals encrusting the substrate. Often mistaken for an encrusting sponge.



STRAWBERRY TUNICATE

(*Eudistoma* sp.) 4 cm / 1.6 in

Tiny individuals bunched together in a bulbous shape and attached to a central stalk. Color can vary greatly.



Without a skeleton, these soft animals rely on chemical defenses for protection. Chemical compounds from some Caribbean tunicates are used in treating viruses and even cancer. The drug Trabectedin, used in chemotherapy, was first derived from the common Mangrove Tunicate (p. 129).



GEOMETRIC ENCRUSTING TUNICATES

(*Botryllus* spp.) 1.5 cm / 0.6 in

Collective name for geometric shapes of small incurrent siphons surrounding larger shared excurrent siphons.



GEOMETRIC ENCRUSTING TUNICATES

(*Botryllus* spp.)

There are numerous species in this genus. All share a symmetrical pattern of incurrent and excurrent siphons.



WHITE CONDOMINIUM TUNICATE

(*Eudistoma* sp.) 10 cm / 4 in

Numerous individuals, seen by slightly raised paired siphons, all encased in a common globular pale tunic.



BLACK CONDOMINIUM TUNICATE

(*Eudistoma obscuratum*) 10 cm / 4 in

Tiny individuals under a common globular black tunic. Protruding siphon edges may be speckled with white.



BUTTON TUNICATES

(*Distaplia corolla*) 6 mm / 0.2 in

Small rounded clusters of tunicates gathered around a common excurrent siphon. Typically orange or purple.



ENCrustING SOCIAL TUNICATE

(*Symplegma viride*) 6 mm / 0.2 in

Tiny individual tunicates growing from a common tunic that spreads across the substrate. Color varies greatly.



ROW ENCRUSTING TUNICATES

(*Botrylloides* spp.) 1.5 cm / 0.6 in

Collective name for tunicates growing in long encrusting rows. Small incurrent and larger excurrent siphons.



FLAT TUNICATE

(*Botrylloides niger*) 6 mm / 0.2 in

Long colonies of rust-colored or yellow to orange-red individuals, each sharing a larger excurrent siphon.




PLANKTONIC TUNICATE

(*Cyclosalpa affinis*) 5 cm / 2 in

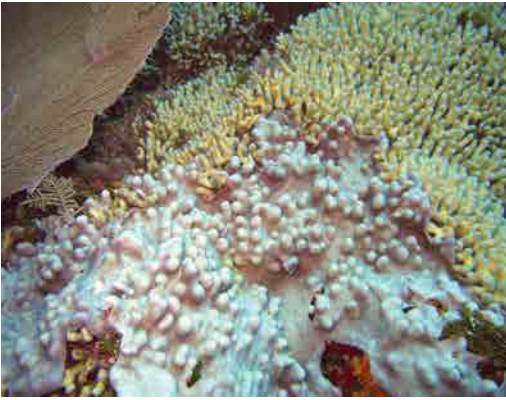
Transparent body, often with blue markings. Faint muscles and reddish digestive tracts can usually be seen. Pelagic.



 Planktonic tunicates are often mistaken for jellies but they have a few distinguishing features, such as their wide incurrent and excurrent siphons that allow them to jet through the water. They also have simple nervous and digestive systems, usually visible through their transparent bodies. Even a simple rounded “brain” called the neural ganglia can be seen. The tiny striations around the body are the tunicate’s muscles. Larval fish and other planktonic animals can sometimes be found taking shelter in and around them.

Planktonic tunicates take on many shapes and sizes. They reproduce asexually by simple budding. Depending on the species, these buds will form long chains, discs or floral shapes until individuals break away and begin life on their own. They are most commonly seen during the summer months.





MAT TUNICATE (VARIATION)
(*Trididemnum solidum*)

This overgrowing tunicate is most often a dull gray color but can be found in white, bluish-green or dark purple.



OVERGROWING MAT TUNICATE
(*Trididemnum solidum*) 60 cm / 2 ft

Tough rough-textured mat that overgrows any substrate, even living coral. Tiny incurrent siphons on the surface.



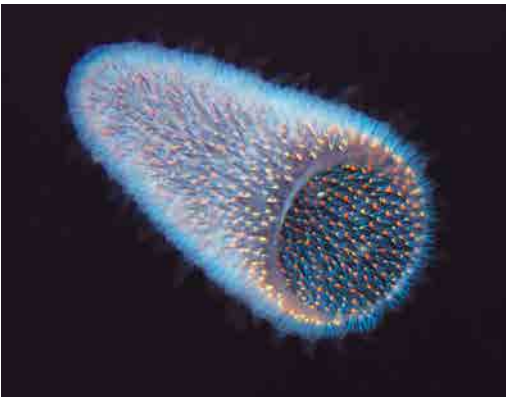
AZURE OVERGROWING TUNICATE
(Family: Didemnidae) 15 cm / 6 in

Thin uniform bluish-purple mat of tightly packed colonies encrusting over the substrate. Found on deeper reefs.



MOTTLED ENCRUSTING TUNICATE
(*Distaplia bermudensis*) 15 cm / 6 in

Individual tunicates cluster around the excurrent siphons, giving them a mottled appearance. Color varies greatly.



ATLANTIC PYROSOME

(*Pyrosoma atlanticum*) 60 cm / 2 ft

A colony of thousands of tunicate clones, joined to form a long cylindrical structure. Pelagic, rarely seen over reefs.



GLOBULAR ENCRUSTING TUNICATE

(*Diplosoma glandulosum*) 10 cm / 4 in

Tiny individuals empty into a common deep excurrent siphon. Thin pale siphon rims. Forms globular shapes.



SOLITARY GORGONIAN HYDROID

(*Ralpharia gorgoniae*) 2.5 cm / 1 in

Single white or pinkish polyp surrounded by numerous thin curling tentacles. Often found with amphipods (p. 265).



Each individual polyp of a hydroid is like a tiny jelly, with a central mouth surrounded by stinging tentacles. Most hydroids have evolved to live as a colony, each polyp supporting and feeding the basic structure of the whole. The polyps can often sting the bare skin of careless divers.



FEATHER BUSH HYDROID

(*Dentitheca dendritica*) 35 cm / 14 in

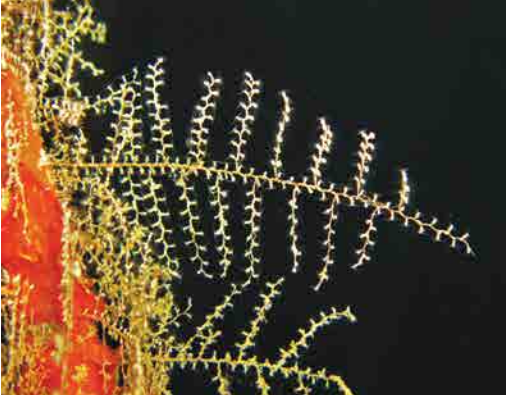
Thick central stalks branch repeatedly to form a loose bush. Often covered in Hydroid Zoanthids (p. 127).



SEAFAN HYDROID

(*Solanderia gracilis*) 45 cm / 1.5 ft

Reddish stalks branch repeatedly, growing in a single plane like a fan. Covered with tiny white stinging polyps.



BRANCHING HYDROID

(*Sertularella diaphana*) 15 cm / 6 in

Branchlets alternate at right angles from a single stalk. Tiny polyps are found on both sides of the branchlets.



ALGAE HYDROID

(*Thyroscyphus ramosus*) 13 cm / 5 in

Thick reddish-brown central stalk. Branchlets in a single plane with alternating polyps. Often found in clusters.



CHRISTMAS TREE HYDROID

(*Pennaria disticha*) 9 cm / 3.5 in

Branchlets alternate from a single stalk. White polyps on tips of each branchlet and stalk. Often found in clusters.



FEATHER HYDROID

(*Gymnangium sibogae*) 30 cm / 1 ft

Thin tightly spaced branchlets alternate along a dark brown central stalk. The shape resembles a tall feather.



THREAD HYDROID

(*Halopteris carinata*) 15 cm / 6 in

Long thin central stalks. Tiny alternating branchlets with tiny polyps. Usually found growing in small clusters.



WHITE STINGER

(*Macrorhynchia philippina*) 10 cm / 4 in

Rigid stalk with only a few branches. Distinctively bright white polyps run in pairs down both stalk and branches.



PURPLE LICHEN BRYOZOAN

(*Patinella purpurea*) 2 cm / 0.8 in

Small domed circular to oval colonies, depressed in the center. Pale to deep bluish purple zooids in single rows.



Bryozoans are colonies of countless cloned animals called zooids that may form calcified crusts, fans or ribbon shapes. Looking closely, a diver can see each individual zooid and its tiny ciliated tentacles that trap food from the water. Their name comes from the Greek "moss animal."



BLEEDING TEETH BRYOZOAN

(*Trematoecia aviculifera*) 20 cm / 8 in

Encrusting calcified layer of larger pink to reddish zooids, visible to the naked eye. Often found at depth.



PEARLY ORANGE BRYOZOAN

(*Hippopodina feegeensis*) 7.5 cm / 3 in

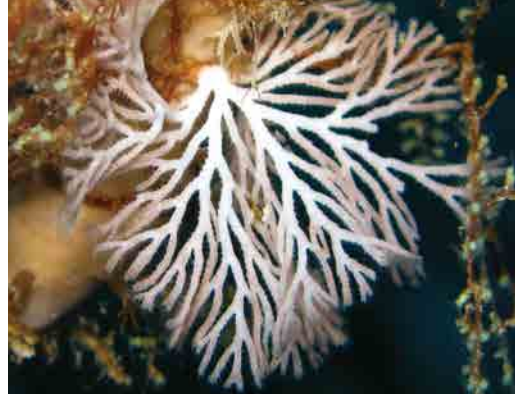
Bright orange zooids form a calcified layer. Often found on mangrove roots and dock pilings as well as on reefs.



BROWN FAN BRYOZOAN

(*Bugulina simplex*) 3 cm / 1.2 in

Brown fan-shaped colony of flattened branching stalks with distinctively red tips. Often under darker ledges.



WHITE FAN BRYOZOAN

(*Reteporellina evelinae*) 5 cm / 2 in

Flattened white stalks that branch repeatedly. Grows outwards in a single plane to form a loose fan shape.



TAN FAN BRYOZOAN

(*Scrupocellaria* sp.) 3 cm / 1.2 in

Light brown fan of tightly spaced and highly branched connected stalks. Grows in a single plane. No red tips.



PURPLE REEF FAN

(*Bugula minima*) 5 cm / 2 in

Purple fan of widely spaced stalks, rarely branching and without red tips. Shallows to deeper sheltered reefs.



WHITE TANGLED BRYOZOAN

(*Adeonellopsis subsulcata*) 13 cm / 5 in

Rigid colonies of thin cylindrical branches. Rectangular zooids are clearly visible. Prefers deep reefs and walls.



SEAWEED BRYOZOAN

(*Caulibugula dendrograpta*) 40 cm / 16 in

Delicate fan-shaped white colonies growing from a common stalk. Found in lagoons and on shallow reefs.



CUSHION SEA STAR

(*Oreaster reticulatus*) 35 cm / 14 in

Five short triangular arms. Thick reddish-orange body with a network of raised red bumps in radiating lines.



Sea stars are able to move using thousands of tiny feet called podia, allowing them to slowly hunt for prey such as shellfish. Their stomachs actually extend out of their bodies to dissolve their meals. They have no blood, simply using seawater to move the nutrients around inside their bodies.



RED MINIATURE SEA STAR

(*Poraniella echinulata*) 3 cm / 1.2 in

Five broad arms tipped with black. Sometimes white markings on the top. Cryptic, found hiding in rubble.



BLUNT-ARMED SEA STAR

(*Asterinides folium*) 2.5 cm / 1 in

Five short triangular arms with blunt tips. Color varies from white to yellow, red or blue. Found among rubble.



STUDED SEA STAR

(*Mithrodia* sp.) 13 cm / 5 in

Pale arms with wide brown bands. Small central disc. Rounded spines on the arms. Found on deeper reefs.



MOTTLED SEA STAR

(*Copidaster lymani*) 30 cm / 12 in

Five tubular arms with rounded tips. Red with irregular dark red mottling. Rows of small pits run down the arms.



GUILDING'S SEA STAR

(*Ophidiaster guildingi*) 10 cm / 4 in

Five tubular arms, all of the same length. Each arm with a distinctively upturned red tip. Color is highly variable.



COMMON COMET STAR

(*Linckia guildingi*) 13 cm / 5 in

Four to seven rounded arms with blunt tips. All arms can be of different lengths. Color varies from orange to tan.



TWO-SPINED SEA STAR

(*Astropecten duplicatus*) 20 cm / 8 in

Five elongated arms bordered with a series of knobby plates, each with two sharp white spines. Color variable.




CONICAL-SPINED SEA STAR

(*Echinaster sentus*) 18 cm / 7 in

Five tubular arms with rows of red to orange or pale brown conical spines. Maroon color between the spines.



 Brittle stars are one of the most common creatures on a healthy reef, and one of the most successful. They go back over 450 million years in the fossil records. Most active at night, they can be seen in the daytime resting inside sponges or hiding under pieces of rubble in the shallows. Brittle stars feed mainly on detritus (marine debris) but can also catch and devour small invertebrates, using a set of five jaws below their central disc to chew their meals. They have no eyes, but they are able to detect light from crystallized lenses built directly into the skeletons of their arms, one of the simplest forms of vision in the ocean. Brittle stars are either male or female and on certain nights in late summer they gather together in dense groups to spawn into the water column (pictured left).

Although brittle stars can move quickly across the reef, they will be preyed upon if caught out in the open. They can shake off one of their limbs, which will continue to wiggle about distracting the fish while the brittle star escapes. It can easily regenerate this lost limb and even regenerate any lost internal organs after a more serious attack.





ANTILLES BRITTLE STAR

(*Ophioblenna antillensis*) arms: 13 cm / 5 in
Smooth tan to purplish dome, may have yellow spots.
Spiny dark brown arms, spines are banded with yellow.



RUBY BRITTLE STAR

(*Ophioderma rubicundum*) arms: 13 cm / 5 in
Long thin arms have short spines and are banded with red and white. Color and patterns are highly variable.



RETICULATED BRITTLE STAR

(*Ophionereis reticulata*) arms: 25 cm / 10 in
Brown to light green central disc with thin dark lines in a reticulated pattern. Long arms with thin dark bands.



SPINY BRITTLE STAR

(*Breviturma paucigranulata*) arms: 15 cm / 6 in
Dark to light brown arms with numerous long thin spines. Wide pale central lines on arms extend onto the disc.



SHORT-ARMED BRITTLE STAR

(*Ophioderma brevicaudum*) arms: 7.5 cm / 3 in
Greenish central disc with red and brown markings.
Distinctively short arms are pale with brown bands.



BLUNT-SPINED BRITTLE STAR


(*Ophiocoma echinata*) arms: 15 cm / 6 in
Smooth central disc in solid gray or black. Arms have prominent blunt spines, becoming shorter near arm tips.



SPOTTED BRITTLE STAR

(*Ophioderma guttatum*) arms: 20 cm / 8 in

Long arms with very short spines. The smooth central disc and the arms are covered in tiny brownish spots.

 Brittle stars can feed by secreting a mucous that is caught between spines along their arms. This sticky substance can catch floating bits of debris and zooplankton from the water. The arms then transfer this substance, together with the food, to a small mouth under the central disc.



SPONGE BRITTLE STAR

(*Ophiothrix suensonii*) arms: 9 cm / 3.5 in

Small central disc. Thin arms with many long spines. Distinctive black line runs over the top of each arm.



ANGULAR BRITTLE STAR

(*Ophiothrix angulata*) arms: 13 cm / 5 in

The central disc has five distinctive lobes bulging out between the arms. Long spines on arms. Color variable.



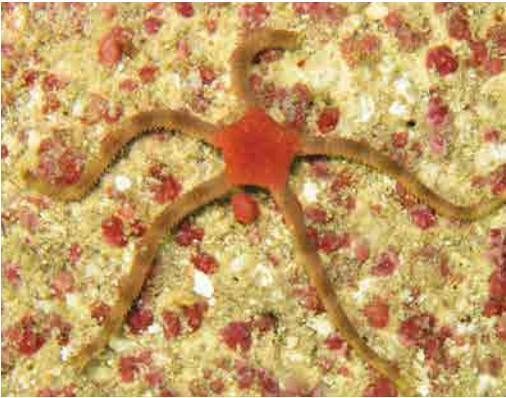
SLIMY BRITTLE STAR (VARIATION)
(*Ophiomyxa flaccida*)

The central discs of some individuals can be solid color, mottled or spotted pattern of red, green, white or brown.



SLIMY BRITTLE STAR

(*Ophiomyxa flaccida*) arms: 15 cm / 6 in
Rounded central disc with distinctively bulging rims.
Arms have short spines and may be lightly banded.



SMOOTH BRITTLE STAR

(*Ophioderma phoenium*) arms: 9 cm / 3.5 in
Smooth reddish-brown disc. Arms are always in a contrasting color with darker bands and tiny spines.



BANDEDARM BRITTLE STAR

(*Ophioderma appressum*) arms: 13 cm / 5 in
Green to gray with distinctively banded arms. Central disc solid green, speckled or with bold irregular patterns.



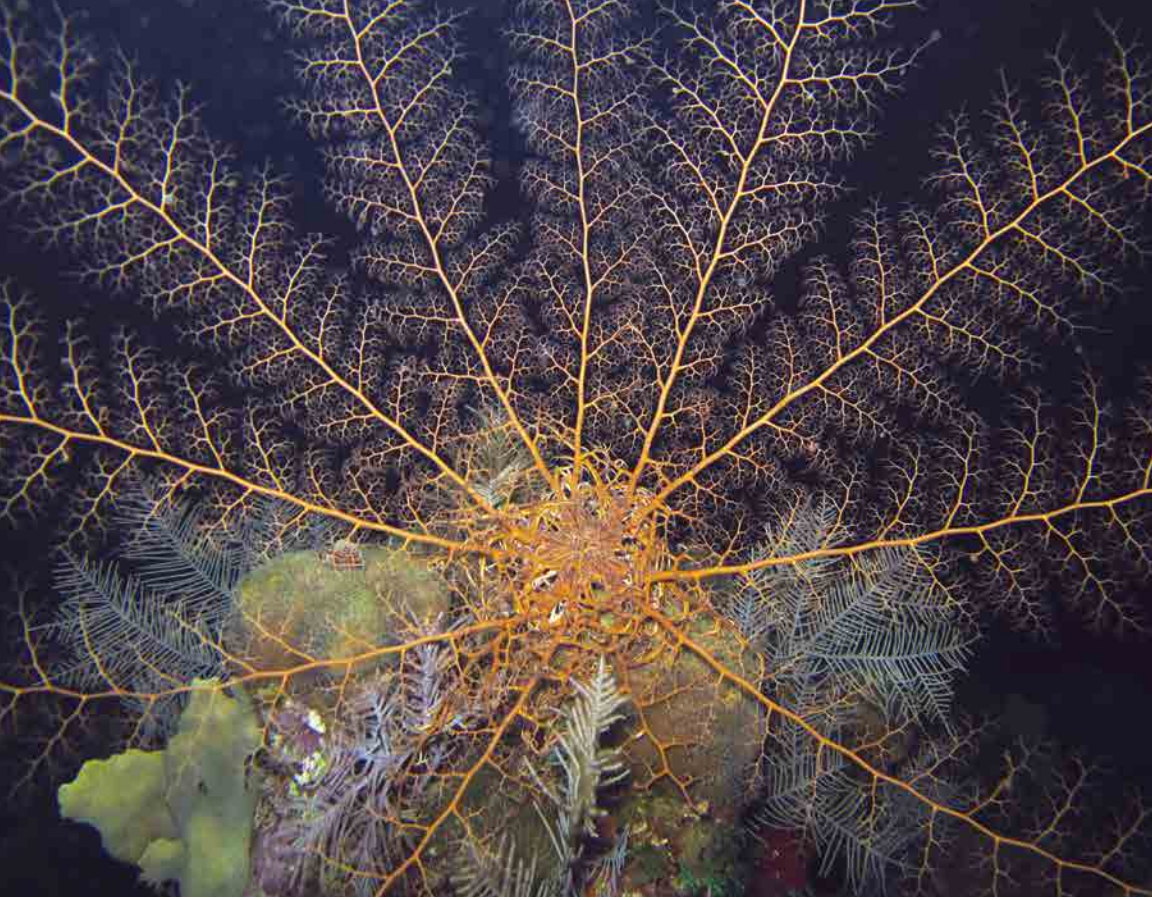
CIRCLE-MARKED BRITTLE STAR

(*Ophioderma cinereum*) arms: 15 cm / 6 in
The central disc has ten spots, each outlined in black, arranged around the rim. Arms are usually banded.



CREVICE BRITTLE STAR

(*Ophiopsila riisei*) arms: 16 cm / 6.4 in
Long thin arms with light banding and numerous short spines. Arms extend only at night, disc remains hidden.




GIANT BASKET STAR

(*Astrophyton muricatum*) arms: 45 cm / 1.5 ft

Long arms branch repeatedly from a tangled mass near the central disc. Light brown to reddish. Nocturnal.



 Basket stars only spread out their arms at night, catching any tiny bits of plankton drifting by in the current. They remain curled up in a dense protective ball during the day. Some may wrap sea fans or other octocorals around them like a cloak, while others may find shelter by curling up beneath poisonous sponges for added protection.

Crinoids deserve a closer look; hiding among the spiny arms are tiny commensal shrimps (p. 252) that have evolved to blend in with the colors of their hosts. Crinoids are largely nocturnal, usually keeping only their feeding arms out in the daytime. At night they can move up higher onto the reef to get at more of the plankton. Tiny “legs” under the body are used to hold the crinoids in place, or allow them to move to better feeding spots. The Swimming Crinoid (following page) is able to use wave-like motions of its arms to propel itself through the water.





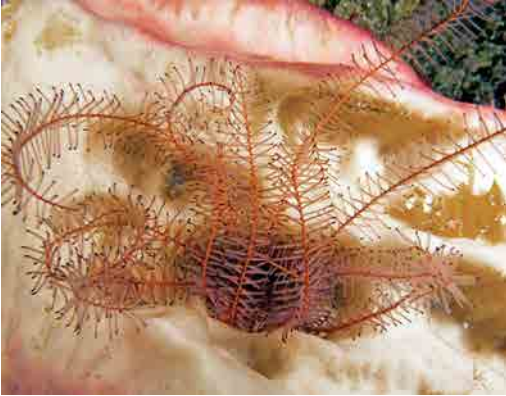
SEA ROD BASKET STAR

(*Schizostella bifurcata*) arms: 5 cm / 2 in
Banded reddish-brown arms that only branch once or twice. Found on sea rods (p. 97). Curled up by day.



LACE CORAL BRITTLE STAR

(*Sigsbeia conifera*) arms: 2.5 cm / 1 in
Cream to reddish-brown disc. Red-banded arms with tiny spines. Found only on Rose Lace Coral (p. 73).



BEADED CRINOID

(*Davidaster discoideus*) arms: 15 cm / 6 in
Twenty arms, usually golden. Side branches are tinged with silver and often have black tips. Hides in crevices.



BLACK AND WHITE CRINOID

(*Nemaster grandis*) arms: 25 cm / 10 in
Forty long black arms. Numerous short black side branches, each tipped in white. Short curved legs.



GOLDEN CRINOID

(*Davidaster rubiginosus*) arms: 37 cm / 15 in
Twenty to forty arms of either yellow, brown or black. Side branches are golden or black with golden tips.



SWIMMING CRINOID

(*Analcidometra armata*) arms: 9 cm / 3.5 in
Ten long pale arms with thin red banding. Red side branches. Can swim about by undulating the arms.

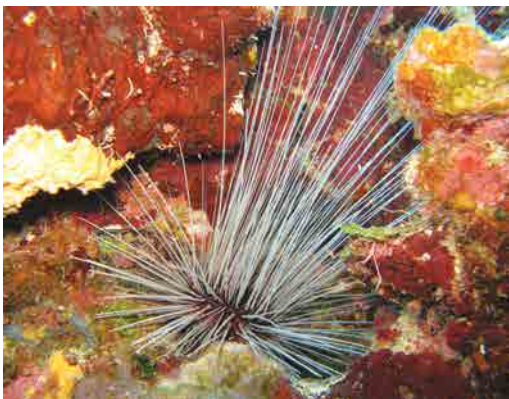


Sea urchins are protected by long mobile spines that are also used for moving about the reef. They rarely venture out in the day, hiding in crevices until nightfall when they come out and clean the reef of algae and decaying plant and animal matter. As reef cleaners, sea urchins are essential to the entire reef ecosystem. In 1983 a mysterious disease killed off 97% of the Long-spined Urchins and most Caribbean reefs quickly suffered: the algal bloom that followed caused the amount of algae-covered corals to increase by as much as 250%. Many reefs have still not fully recovered to this day.

Sea urchins reproduce in summer by releasing millions of jelly-covered eggs and clouds of sperm into the water. The larvae can drift for up to six weeks until they develop enough to settle onto a new reef and begin foraging.

Between the spines of some sea urchins there are tiny tentacles called podia, with miniature suction cups on the ends. They use these to cling onto reef walls and to move about, climbing over obstacles. Some sea urchins use these podia to grab onto loose bits of dead algae or empty shells. This covering gives them extra protection and camouflage on the reef.

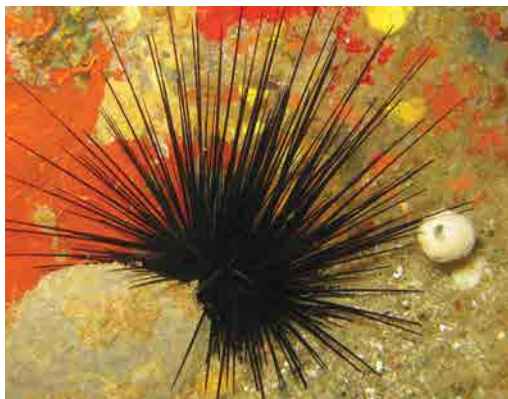




LONG-SPINED URCHIN (VARIATION)

(*Diadema antillarum*)

A less common variation with white spines. Individuals may be found with both black and white spines together.



LONG-SPINED URCHIN

(*Diadema antillarum*) spines: 20 cm / 8 in

Numerous long thin spines, longer towards the top of the animal. Nocturnal, hides in crevices during the day.



LONG-SPINED URCHIN (JUVENILE)

(*Diadema antillarum*)

Juveniles are usually more colorful than the adults. The spines are often banded in contrasting colors.



MAGNIFICENT URCHIN

(*Astropyga magnifica*) 15 cm / 6 in

Dark purple body with radiating red lines. Long spines are clustered in radial bands down the body segments.



ROCK-BORING URCHIN

(*Echinometra lucunter*) 7.5 cm / 3 in

Short brown spines with a thick base. Black or red body. Found boring holes into the limestone substrate by day.



REEF URCHIN

(*Echinometra viridis*) 5 cm / 2 in

Dark red body. Short pointed spines all have darker tips and a pale ring around their bases. Prefers shallow reefs.



JEWEL URCHIN

(*Lytechinus williamsi*) 5 cm / 2 in

Pale body with red lines between each segment. Green spines. Short podia ending in clear or small purple balls.



While some sea urchins use chemicals to slowly melt protective holes into the reef, others are found on sand. These are the nocturnal sand dollars and sea biscuits. They have shorter spines that allow them to dig down into the sand, avoiding predators that are more active during the day.



SLATE PENCIL URCHIN

(*Eucidaris tribuloides*) 5 cm / 2 in

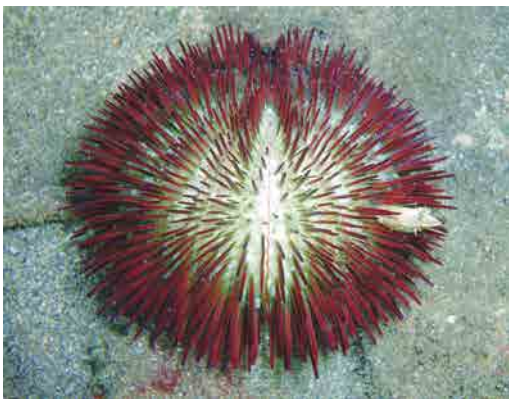
Light red to brownish body. Thick tapering spines with light brown banding. Short white secondary spines.



SAND DOLLAR

(*Clypeaster subdepressus*) 30 cm / 12 in

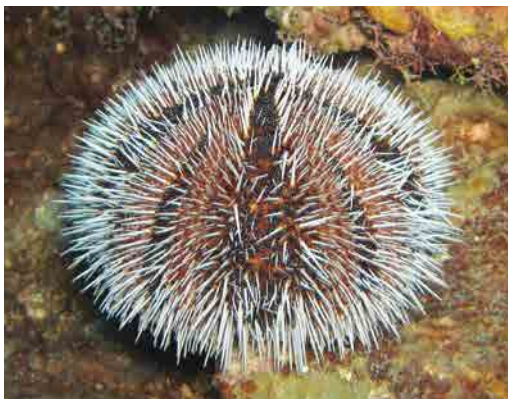
Flat brown disc-shaped body with a dark pentagonal design on the back. Very short spines. Buries in sand.



VARIEGATED URCHIN

(*Lytechinus variegatus*) 13 cm / 5 in

Pale body with numerous white podia. Short red, purple or white spines in sparse rows, following the plate lines.



WEST INDIAN SEA EGG

(*Tripneustes ventricosus*) 13 cm / 5 in

Rounded dark purple to black body. White spines are short and dense. Visible podia. Prefers shallow reefs.



LONG-SPINED SEA BISCUIT

(*Plagiobrissus grandis*) 20 cm / 8 in

Elongated rounded body with short brown spines. Longer clear spines on the top and towards the rear.



INFLATED SEA BISCUIT

(*Clypeaster rosaceus*) 20 cm / 8 in

Flattened brown to reddish hemispherical body with a raised pentagonal design on the back. Short spines.



SIX KEYHOLE SAND DOLLAR

(*Leodia sexiesperforata*) 10 cm / 4 in

Disc-shaped body with a pentagonal design on the back. Six elongated holes around the edges. Very short spines.



RED HEART URCHIN

(*Meoma ventricosa*) 15 cm / 6 in

Rounded dome-shaped body, flattened on the bottom. Short brown spines. Buries into sand during the day.



CLARK'S SEA CUCUMBER

(*Isostichopus macroparatheses*) 12 cm / 5 in
Smooth rounded cream to tan body with brown blotches
and small spots (darker around short pointed papillae).



The role of sea cucumbers on a coral reef is similar to that of earthworms on land: they feed on detritus (dead or decaying organic matter), breaking it down into even smaller particles. Bacteria can then reintroduce this organic waste back into the food chain. Some have a ring of long movable tentacles around the mouth for transferring food into their stomachs, like the Beaded Sea Cucumber, which is usually only seen at night.

In some areas of the Caribbean, these essential reef-cleaning animals are being commercially harvested, quite often illegally, which upsets the delicate balance of local reef ecosystems.

Despite their leathery skin they can be eaten by some fishes, such as the trunkfish on the right, and have developed an interesting defense strategy: if attacked, they can regurgitate a sticky mass from their stomachs onto the fish to entangle it. Others release a strong toxin called holothurin, stunning predators. Nevertheless, some animals have evolved to use the long body cavities for protection, such as the slender Pearlfish (p. 343) that lives inside the anus of sea cucumbers.



SEA CUCUMBERS : INVERTEBRATES



FURRY SEA CUCUMBER

(*Astichopus multifidus*) 40 cm / 16 in

Fleshy white to light brown body, often with blotches. Short podia on the back and in a skirt around the sole.



CONICAL SEA CUCUMBER

(*Eostichopus arnesoni*) 40 cm / 16 in

Dark brown with numerous lighter cone-shaped podia along the back, circled in light brown. The sole is reddish.



DONKEY DUNG SEA CUCUMBER

(*Holothuria mexicana*) 35 cm / 14 in

Light brown to black with numerous creases along the body. The sole is red to white with tiny brown parapodia.



FIVE-TOOTHED SEA CUCUMBER

(*Actinopyga agassizii*) 25 cm / 10 in

Mottled yellowish-brown body, often with squared sides. Conical podia, larger near the sole and smaller on top.



BEADED SEA CUCUMBER

(*Euapta lappa*) 90 cm / 3 ft

Bulbous flexible body with yellow stripes on the sides. Ring of long pale feeding tentacles around the mouth.



TIGER TAIL SEA CUCUMBER

(*Holothuria thomasi*) 1.8 m / 6 ft

The largest sea cucumber. Pale brown body with dark bands. Short tentacles around mouth. Mostly nocturnal.



GOLDEN SEA CUCUMBER

(*Holothuria parvula*) 10 cm / 4 in

Rounded golden-brown body with irregular darker brown spots and blotches. Small pointed papillae on the back.



The Golden Sea Cucumber is unique, reproducing asexually simply by splitting in two. Each half regenerates lost organs, starting with the gut so it can begin feeding within just two months. With few juveniles found on the reef, this is believed to be their main method of reproduction.



SEAWEED SEA CUCUMBER

(*Synaptula hydriformis*) 10 cm / 4 in

Green to reddish-brown body with twelve feather-like feeding tentacles. Found in algae and seagrass beds.



JUVENILE SEA CUCUMBERS

(Class: Holothuroidea)

Juveniles are often brightly colored with long pointed papillae and may be confused for nudibranchs (p. 186).



THREE-ROWED SEA CUCUMBER

(*Isostichopus badionotus* VARIATION)

Sometimes the podia are surrounded by darker brown spots, appearing like chocolate-drops across the back.



THREE-ROWED SEA CUCUMBER

(*Isostichopus badionotus*) 40 cm / 16 in

Brown or tan to yellow body is creased and covered in small knobby podia, usually in sharply contrasting colors.



PRINCEPS SEA CUCUMBER

(*Holothuria princeps*) 30 cm / 1 ft

Tan body tapering at the rear, mottled with rows of brown blotches. Podia of various sizes, tipped with tiny papillae.



SAND SEA CUCUMBER

(*Holothuria arenicola*) 30 cm / 1ft

Light rusty-brown with gray or reddish spots and short papillae. Leaf-shaped oral tentacles. May bury in sand.



IMPATIENT SEA CUCUMBER

(*Holothuria impatiens*) 20 cm / 8 in

Slender mottled brown to reddish body. Tapers more towards the mouth. Rows of cone-shaped papillae.



FLORIDA SEA CUCUMBER

(*Holothuria floridana*) 25 cm / 10 in

Creased tapering body in brown, yellow or red. Often mottled. Numerous sharp podia along back and sides.



BEARDED FIREWORM

(*Hermodice carunculata*) 30 cm / 1 ft

Long segmented reddish body. May display white tufts of bristles. Fleshy appendage (caruncle) on head.



Divers should be wary around fireworms. They get their name from the intense sting they can inflict on contact with bare skin. When threatened, a series of white bristles containing a powerful neurotoxin shoots out from along the sides of the body. This allows them to forage freely on the reef, even in the daytime. If a diver accidentally touches a fireworm, adhesive tape can be used to remove the bristles and vinegar should neutralize some of the toxins.

The dark orange frills that line the body are actually gills, similar to those of the nudibranchs, that allow them to absorb oxygen directly from the seawater.



Fireworms feed on corals by extending their mouths, enveloping the tips. They secrete enzymes to break down the flesh of the corals and digest it. They can even be found feeding on the toxic fire corals (p. 73), leaving the bare white skeleton exposed after their meal.



BEARDED FIREWORM (JUVENILE)
(*Hermodice carunculata*)

Even very small juveniles of just a few millimeters are armed with widely spaced tufts of stinging bristles.



BEARDED FIREWORM (VARIATION)
(*Hermodice carunculata*)

Fireworms are most often reddish-orange but can also be found in shades of green and brownish-gray.



ORANGE FIREWORM

(*Eurythoe complanata*) 35 cm / 14 in

Narrow flattened body with dense tufts of white bristles. Orange, red or greenish, often darker towards midbody.



BLACKLINE FIREWORM

(*Chloeia viridis*) 15 cm / 6 in

Each segment has a black line surrounded by white, forming a line down the back. Found in sandy areas.



CARIBBEAN SEA MOUSE

(*Aphrodita* sp.) 15 cm / 6 in

Burrowing bristle worms covered in a dense mat of hair-like setae. Almost a dozen species in the Caribbean.



BUSHY FIREWORM

(*Euphrosine* sp.) 15 cm / 6 in

Short dense orange bristles cover the body, parting down the middle to reveal iridescent orange body segments.



BOBBIT WORMS

(*Eunice* spp.) 1.8 m / 6 ft

Long segmented reddish-brown body with an iridescent sheen. Retractable scissor-like jaws for attacking prey.

 Bobbit Worm is a collective name for species in a large family of worms called Eunicidae. Rarely seen in the daytime, they are fast-moving carnivorous predators. All have segmented bodies, often with an iridescent sheen, two eyes and five long tentacles surrounding the mouth.



ATLANTIC PALOLO

(*Eunice fucata*) 60 cm / 2 ft

Iridescent reddish-brown body. Centipede-like legs on each body segment. Found in areas of shallow rubble.



BOBBIT WORM DEN

Bobbit worms make a den of strong fibers, appearing like spider's silk. They are largely nocturnal hunters as most of their predators are fish that are active during the day.



YELLOWFLAP SYLLID WORM

(*Proceraea janetae*) 4.5 cm / 1.8 in

Slender elongated body with dark spots and small bright yellow flap-like cirri. Found on Great Star Coral (p. 82).



ROBUST SYLLID WORM

(*Amblyosyllis* sp.) 4.5 cm / 1.8 in

Dark body with rounded segments. Thin white curling cirri along the body. White head with large black spots.



TOUCH-ME-NOT SPONGE WORMS

(*Haplosyllis spongicola*) 5 mm / 0.2 in

Colonies of small white bristled worms. Only found on the inside walls of Touch-Me-Not Sponges (p. 67).



PAINTED BRISTLE WORM

(*Hesione picta*) 5 cm / 2 in

15 white bands across a dark body, with orange spots where they meet tufts of bristles from each segment.



BLUE-STRIPED BRISTLE WORM

(*Hesione praetexta*) 5 cm / 2 in

Parapodia with tufts of bristles line the sides. Pale blue iridescent stripes. Some describe as variation of *H. picta*.



DARK-LINED BRISTLE WORM

(*Hesione intertexta*) 5.5 cm / 2.2 in


Tan body with numerous thin dark brown longitudinal stripes. Row of white spots runs down medial line.



FINE-CIRRUS SCALE WORM

(*Harmothoe lanceocirrata*) 3 cm / 1.2 in

Rounded tan to pinkish scales covered with fine hairs. Tufts of light brown bristles and pale cirri from under the scales.

 Scales worms (Family: Polynoidae) get their common name from the flattened scales, called elytra, that cover the body. They are able to roll up into a protective ball if threatened. They are fast-moving predators but typically hide under coral rubble. Some may show bioluminescence.



ANTINOE SCALE WORMS

(*Antinoe* spp.) 2.5 / 1 in

Smooth rounded scales, often with an iridescent sheen. Short tufts of bristles and longer cirri from the sides.



MALMGRENIELLA SCALE WORMS

(*Malmgreniella* spp.) 2.5 / 1 in

Typically smooth rounded overlapping scales with dark patterning on the edges. Many still remain undescribed.

SCALE WORMS : INVERTEBRATES



PLANKTONIC SCALE WORM

(Family: Polynoidae)

Scale worms have a long larval stage, allowing them to grow larger as they feed in the plankton before settling.



TOOTHED SCALE WORM

(*Harmothoe longidentis*) 3 cm / 1.2 in

Golden brown scales with paler edges. Distinctively long pointed teeth on the lateral edges of each scale.



HANLEY'S SCALE WORM

(*Harmothoe hanleyi*) 2.5 / 1 in

Rough-edged light brown scales with rough tubercles and fine papillae. Scale edges darker down the middle.



ROUGH SCALE WORM

(*Harmothoe augeneri*) 2.5 / 1 in

Creamy light brown scales with a distinctly rough texture of pointed tubercles. Thick tapering cirri on sides.



CRUCIS SCALE WORM

(*Harmothoe crucis*) 5 cm / 2 in

Light brown rounded oval scales with a rough texture from low tubercles. Pale cirri and dark feeding tentacles.



VARIEGATED SCALE WORM

(*Malmgreniella variegata*) 2.5 / 1 in


White to pale brown scales with thin black margins. Dark crescents on inner half of each overlapping scale.



MEDUSA WORM

(*Loimia medusa*) body: 15 cm / 6 in

Reddish body with numerous long banded tentacles. Sharp bristles along the body used to move inside a sandy tube.

 Terebellids like the Spaghetti Worm extend long tentacles over the reef floor to feed. A sticky mucous traps small bits of food and larger pieces can be grabbed and pulled in to the mouth. Grains of sand are cemented together to form a safe tube-shaped home for the body of the animal.



SPAGHETTI WORM

(*Eupolymnia crassicornis*) tentacles: 1 m / 3.2 ft

Thin white tentacles radiating from a common hole in the reef. Body is hidden. Found close to sandy areas.



TRUMPET WORMS

(Family: Pectinariidae) tube: 5 cm / 2 in

These worms cement grains of sand together to form buried tubes. Also known as Ice Cream Cone Worms.



SPHAERODORID WORMS

(Family: Sphaerodoridae)

This family of marine polychaetes is characterized by spherical tubercles covering the whole body surface.



BAMBOO WORMS

(Family: Maldanidae)

A family of polychaetes that builds tube shelters from sand. Long soft segmented semi-transparent bodies.



OENONID WORMS

(Family: Oenonidae)

Elongated tapering bodies with somewhat flattened heads. Bury in sediment, not making permanent burrows.



CHRYSOPETALID WORMS

(Family: Chrysopetalidae)

Small segmented worms characterized by retractable anterior segments. Many still remain undescribed.



SPIONID WORMS

(Family: Spionidae)

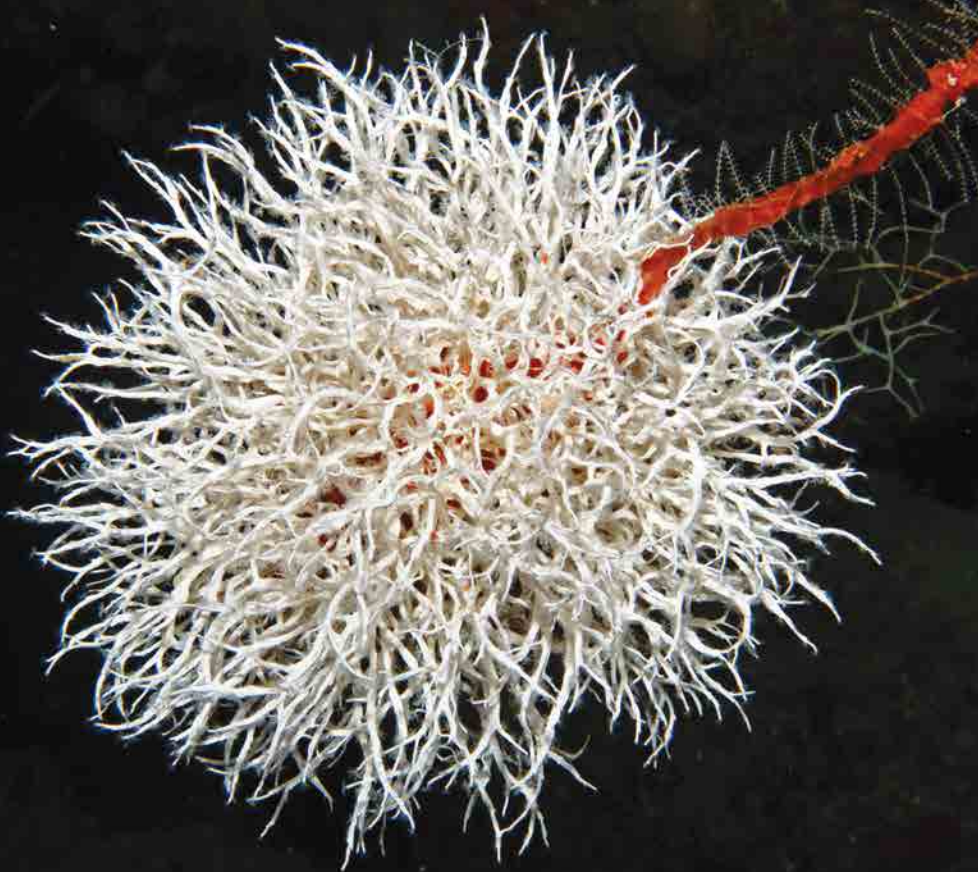
These worms form tubes and burrow into sponges. Two slender arms (palps) are used for feeding on plankton.



HESIONID WORMS

(Family: Hesionidae)

This family of polychaetes is characterized by bristles (setae) in short tufts from stalks on each body segment.



SEA FROST

(*Salmacina huxleyi*) colony 15 cm / 6 in

Encrusting tangles of thin white tubes that the tiny worms build as shelters. Tiny red radioles are visible at each tip.



Marine worms can look very different from their land-based cousins. They range from the tiny, almost microscopic individuals of Sea Frost, living in calcified tubes (pictured above), to the extremely long and often colorful ribbon worms (following page).



REDCOLLAR TUBE WORM

(*Filigranella* sp.) 2 cm / 0.8 in

Clusters of feathery red radioles extending from a visible calcified white tube. Bright red band at the tube's mouth.



HONEYCOMB WORM

(*Lygdamis wirtzi*) 4 cm / 1.6 in

Twin crowns of thin black spikes. Found in short tubes constructed of sand. Retracts quickly when approached.

TUBE WORMS / WORMS : INVERTEBRATES



BASEODISCUS WORMS

(*Baseodiscus* spp.) 1.8 m / 6 ft

Elongated soft bodies. Colors vary greatly, often with spots, stripes or bands. Usually live deep inside the reef.



RIBBON WORMS

(Phylum: Nemertea) 1.8 m / 6 ft

Collective name for long soft-bodied nocturnal worms, sometimes with a flattened head. Colors vary greatly.



PEANUT WORMS

(Phylum: Sipuncula) 7.5 cm / 3 in

Translucent body, tapering near the front. Thin striations along the body. Found burrowing into sand and rubble.



WHITE-STRIPED RIBBON WORM

(*Micrura* sp.) 10 cm / 4 in

White body with bright red on the top. Distinctive thin white stripe runs down the entire length of the body.



SOUTHERN LUGWORM

(*Arenicola cristata*) 15 cm / 6 in

Only seen by the waste that this worm blows up onto the sand. A small pit nearby is the burrow's entrance.



PALP WORM


(*Mesochaetopterus stinapa*) tentacles: 10 cm / 4 in
Palp worms bury into sand, extending two tentacles to feed. This species is recognized by its colored bands.



CHRISTMAS TREE WORM

(*Spirobranchus giganteus*) 4 cm / 1.6 in

Two spiraling crowns of radioles. Usually found in contrasting shades of purple, white and orange.

 Christmas Tree Worms are abundant throughout the Caribbean and come in a wide variety of colors. They are most often found growing from the tops of hard corals. When threatened, a whorl-like crown of radioles allows them to retract very quickly in a spiral motion. Under the crown is a sharp spike that will hurt any fish trying to take a bite, discouraging them from trying again. In front of the crown, elongated sensory organs stick out into the water, protected by a tough plate called an operculum. This plate will act as a lid to cover the hole while the animal is retracted.



Tube-dwelling worms (Family: Serpulidae) often grow inside coral heads and they match the rate of growth in their host coral. As the coral grows outwards, the worm builds up more of its protective tube so that it can always have access to the seawater in which it feeds. When found in caves, where no coral growth is taking place, the tube of the worm grows attached to the cave wall. This protective case is made up of calcium carbonate and small particles taken out from the filtered seawater.



BLUSHING STAR CORAL FANWORM

(*Vermiliopsis* sp.) 6 mm / 0.2 in

Tiny red crowns of radioles, poking out from the surface of Blushing Star Corals (p. 83). Tube is hidden in coral.



MINIATURE CHRISTMAS TREE WORM

(*Spirobranchus polycerus*) 2 cm / 0.8 in

Only found on shallow corals or encrusting fire corals. Colors vary, often combinations of pastels and black.



STAR HORSESHOE WORM

(*Pomatostegus stellatus*) 4 cm / 1.6 in

Radioles form a U-shaped crown. Red and yellow are the most common colors. Calcified tube usually hidden.



RED-SPOTTED HORSESHOE WORM

(*Protula* sp.) 4 cm / 1.6 in

Pale gold or yellow radioles folded into a U-shape. Distinctive red eyespots on crown. Visible calcified tube.



BROWN FANWORM

(*Notaulax nudicollis*) 3 cm / 1.2 in

Alternating brown and white bands on a circular crown of radioles. The tube below is usually hidden in the reef.



YELLOW FANWORM

(*Notaulax occidentalis*) 3 cm / 1.2 in

Circular yellow crown of dense radioles with numerous thin dark bands. The tube is usually hidden in the reef.



VARIEGATED FEATHER DUSTER

(*Bispira melanostigma*) 3 cm / 1.2 in

Circular crown of radioles, sometimes banded. Tiny eyespots usually visible. Tubes are sometimes hidden.



Feather dusters feed by keeping a crown of fan-like arms, called radioles, extended into the water to catch microscopic plankton. These crowns have light receptors and can sense when danger is near, quickly pulling back into their protective tubes in less than 1/100th of a second.



SOCIAL FEATHER DUSTER

(*Bispira brunnea*) 3 cm / 1.2 in

Circular crown of radioles. Brown with white bands or solid white. Found in clusters. Visible elongated tubes.



GHOST FEATHER DUSTER

(*Anamobaea* sp.) 2 cm / 0.8 in

Pale circular crowns with purple bands and a darker ring near the center. Found growing in small clusters on sand.

FEATHER DUSTERS : INVERTEBRATES



PARASABELLA FANWORMS

(*Parasabella* spp.) 1 cm / 0.4 in

Fanworms in this genus are characterized by having no eyes on radioles. Tall tube collars are often overgrown.



RUFFLED FEATHER DUSTER

(*Hypsicomus* sp.) 2 cm / 0.8 in

Oblong crown of radioles surrounded by a thin white rim. Short visible tube. Found on deeper reefs and walls.



BLACK-SPOTTED FEATHER DUSTER

(*Branchiomma nigromaculatum*) 2.5 cm / 1 in

Brown with white banding and dark spots. Radioles form a distinctive horseshoe shape. Tube is hidden in the reef.



SPLITCROWN FEATHER DUSTER

(*Anamobaea orstedii*) 5 cm / 2 in

The oblong crown of radioles has a split down the middle, forming two halves. Colors are highly variable.



MAGNIFICENT FEATHER DUSTER

(*Sabellastarte magnifica*) 15 cm / 6 in

The largest of the feather dusters, with a double row of banded radioles. Variable in color: tan, yellow or purple.



SHY FEATHER DUSTER

(*Acromegalomma* sp.) 2.5 cm / 1 in

Crown with distinctive V-shaped fold, where radioles are longer. Well-developed eyespots. Shy, retracts quickly.



Flatworms are sometimes mistaken for nudibranchs on a dive because of their bright colors and the two raised flaps near their heads. These are called pseudotentacles, which have concentrations of specialized cells for detecting light and smelling chemical traces in the water. Flatworms have no gill structures like the nudibranchs; they are able to absorb oxygen directly from the seawater. The mouth, underneath the body, is also used to expel waste. Some are able to swim away from predators using a series of wave-like muscular contractions. Many flatworm species are found close to their major food source, the tunicates (p. 128).

Flatworms are rarely attacked by larger predators; their bright or contrasting colors are meant as a warning that they are poisonous. Even so, they remain most active at night. If they are attacked they can quickly regenerate lost parts of their bodies. Flatworms are simultaneous hermaphrodites, with both male and female sexual organs, and some have an odd method of reproduction. They carry a harpoon-like penis, used to stab and inject sperm into other flatworms, forcing them to reproduce. Some flatworm species are also able to reproduce by fission: they can simply split into two, resulting in a genetically identical clone of themselves.





SPLENDID FLATWORM

(*Pseudobiceros splendidus*) 5 cm / 2 in

Dark purple to black body with thin purple and orange lines around the margin. Orange-tipped pseudotentacles.



LEOPARD FLATWORM

(*Pseudobiceros pardalis*) 13 cm / 5 in

Dark purple body with orange spots outlined in black. Margin and pseudotentacles lined with small white spots.



YELLOW-LINED FLATWORM

(*Pseudobiceros* sp.) 5 cm / 2 in

Black body with a bright yellow central line and radiating lines towards a yellow margin. Found in the shallows.



CARIBBEAN FLATWORM

(*Pseudobiceros caribbensis*) 2.5 cm / 1 in

Brownish body with darker blotches. Large white spots, denser along medial line. White-tipped pseudotentacles.



LINED FLATWORM

(*Prostheceraeus crozieri*) 5 cm / 2 in

White to reddish-brown body with distinctive thin dark lines and a white margin. Close-set pseudotentacles.



NEWMAN'S FLATWORM

(*Prostheceraeus floridanus*) 2.5 cm / 1 in

White body with a dense reticulated pattern of brown markings. Black lines on the head and around margin.



ENCHIRIDIUM FLATWORMS

(*Enchiridium* spp.) 4.5 cm / 1.8 in

Pale bodies with small spots, denser down medial line.
 Identifications should be considered tentative on dives.



Unlike segmented worms, flatworms have no rigid body walls and no internal body cavities other than a simple gut. Countless tiny hairs called cilia allow them to glide smoothly and quickly and they can deform these soft bodies to squeeze into the tiniest of crevices in the reef.



FRECKLED FLATWORM

(*Enchiridium* cf. *periommatum*) 4.5 cm / 1.8 in

Spots become darker as individuals feed. Like all genus members, microscopic examination needed for exact ID.



EVELINE'S FLATWORM

(*Enchiridium* cf. *evelinae*) 3.5 cm / 1.4 in

Creamy white with small brown spots on dorsum and small orange spots near dorsum margin. ID tentative.



NOTOCOMPLANA FLATWORMS

(*Notocomplana* spp.) 2.5 cm / 1 in

Translucent white to pinkish body with white, irregularly branching lines. Two small black close-set eyespots.



RUSTY FLATWORM

(*Notocomplana ferruginea*) 4 cm / 1.6 in

Translucent white body with visible internal organs on medial line. Black eyespots, set well back from margin.



ADENOPLANA FLATWORMS

(*Adenoplana* spp.) 2.5 cm / 1 in

Fleshy oval bodies, translucent light brown to pinkish. Identifications based on location of marginal eyespots.



TENANT FLATWORM

(*Hoploplana inquilina*) 1 cm / 0.4 in

Rounded translucent bodies with reticulated pattern of branching white internal organs. Short dark tentacles.



LATTICED FLATWORM

(*Styloplanocera fasciata*) 5 cm / 2 in

Pale brown to whitish body covered with scattered brown spots and blotches. Two long pointed nuchal tentacles.



PSEUDOCEROS FLATWORMS

(*Pseudoceros* spp.)

Folded pseudotentacles. Often brightly colored. Many still undescribed: pictured above is *Pseudoceros* cf. *josei*.



STIPPLED FLATWORM

(*Idioplana atlantica*) 2.5 cm / 1 in

Background color from white to pink or yellowish. Brown blotches become smaller near margin. Pointed tentacles.



Planocericid flatworms have high concentrations of a potent neurotoxin, called tetrodotoxin, as a chemical defense against predators. This is the same toxin found in pufferfishes (p. 368). Studies show that by feeding on planocericids, juvenile pufferfishes are able to raise their own toxin levels.



HORNED FLATWORMS

(*Gnesioceros* spp.)

Flatworms in this genus have small thin tentacles set well back on a very flattened body, usually wider at the front.



SARGASSUM HORNED FLATWORM

(*Gnesioceros sargassicola*) 1.5 cm / 0.6 in

Flattened body tapering to the rear, with scattered brown spots and irregular blotches. Small thin white tentacles.



BLACK VELVET FLATWORM

(*Pseudoceros bolool*) 5 cm / 2 in

Uniformly black body and pseudotentacles. Light gray underside. Found mostly in sandy areas. Circumtropical.



MARGINED-BICOLORED FLATWORM

(*Pseudoceros bicolor marcusorum*) 5 cm / 2 in

Brownish body with tiny white speckles, a central stripe and a broad white margin. White-tipped pseudotentacles.



BICOLORED FLATWORM (VARIATION)

(*Pseudoceros bicolor*)

Body may be paler with tiny white speckles. Same thin white margin with irregular white lines pointing inwards.



BICOLORED FLATWORM

(*Pseudoceros bicolor*) 5 cm / 2 in

Occasionally the white margin is tinged with a greenish yellow (compare to bright orange on *P. rawlinsonae*).



RAWLINSON'S FLATWORM (VARIATION)

(*Pseudoceros rawlinsonae*)

The dark area in the center of the body may be speckled with white spots. The mantle margin remains orange.



RAWLINSON'S FLATWORM

(*Pseudoceros rawlinsonae*) 2.5 cm / 1 in

Black or reddish-brown body. Orange-rimmed white margin has widely spaced white lines pointing inwards.



GHOST ACOEL

(*Amphiscolops* sp.) 1 cm / 0.4 in

Small fast-moving acael flatworm. Transparent body with two sharp tail lobes. White eyespots and band at front.



Acoels are a unique group of animals that closely resemble flatworms, but they are no longer grouped together under Platyhelminthes. They are often very tiny and more solid-bodied but lack a conventional gut, with the mouth opening directly into the tissues that fills the body.



RED SPOT BANANA WORM

(Order: Acoela) 5 mm / 0.2 in

Tiny tapering yellow body. Dark red spot at midbody and a flattened head. (Some varieties almost solid red.)



PANTHER WORM

(*Hofstenia miamia*) 9 mm / 0.4 in

Rounded teardrop-shaped body with spots and bands. Tapering tail. Fast-moving predators, hence their name.



RETICULATED FLATWORM

(*Phrikoceros mopsus*) 2.5 cm / 1 in

Light brown body with numerous spots and a darker medial line. Distinctive thin black line around the margin.



SHARP EYE FLATWORM

(*Pericelis cata*) 5 cm / 2 in

Light brown body with darker blotches, concentrated down the medial line. Widely spaced pseudotentacles.



EURYLEPTA FLATWORMS

(*Eurylepta* spp.)

Oval to broadly oval bodies with smooth dorsal surface. Pseudotentacles are typically tall pointed folds in margin.



ACEROTISA FLATWORMS

(*Acerotisa* spp.)

Typically small rounded oval bodies with smooth dorsal surface. No prominent pseudotentacle folds on margin.



WHITECROSS FLATWORM

(*Thysanozoon broccii*) 1.5 cm / 0.6 in

Reddish-brown body with bulbous tubercles. White cross centered on the back. Small white spots around margin.



BULBOUS FLATWORM

(*Thysanozoon* sp.) 2.5 cm / 1 in

Brown to black body with short bulbous tubercles. Margin is edged with small white spots. An active swimmer.



LETTUCE SEA SLUG


(*Elysia crispata*) 10 cm / 4 in

Fleshy convoluted parapodia resemble leaves of lettuce.
Large pale blotches on sides. Long curled rhinophores.



Lettuce Sea Slugs are highly variable in color, depending on which algae they have been feeding on.



 The Lettuce Sea Slug has developed a unique way of feeding itself called kleptoplasty: stealing photosynthetic material from plants. It actually keeps the chloroplasts alive and stored in the ruffles on its back. These are the plant cells that use sunlight to produce sugars by photosynthesis. They continue to work inside the slug's flesh for up to a month, but now they are feeding an animal instead of a plant. As an added bonus, the colors of the chloroplasts help the Lettuce Sea Slug to remain camouflaged on its food source. The color will change depending on what type of plant the animal is living and feeding on. With its ruffled back always exposed to the sunlight, the Lettuce Sea Slug acts like a small solar-powered battery moving about on the reef floor.



VELVET ELYSIA

(*Elysia velutinus*) 4 cm / 1.6 in

Green to yellowish body. White lines from round head to rhinophores. Small gap in closed parapodia at midbody.



ORNATE ELYSIA

(*Elysia ornata*) 5 cm / 2 in

Light green body with tiny black and white spots. Tips of rhinophores and parapodia lined with orange and black.



CAULERPA ELYSIA

(*Elysia subornata*) 7 cm / 2.8 in

White patch on head extends onto short rhinophores. Parapodial edge is paler with a thin solid brown line.



PAPILLOSE ELYSIA

(*Elysia papillosa*) 4 cm / 1.6 in

Pale green body with white papillae on parapodial edge. Distinctive brown band on lower third of the rhinophores.



MAZDA ELYSIA

(*Thuridilla mazda*) 6 mm / 0.2 in

Dark body with yellowish area on back of the head and rhinophores. Blue and orange half-moons on the sides.



PAINTED ELYSIA

(*Thuridilla picta*) 3 cm / 1.2 in


Prominent curling rhinophores tipped in red. Parapodia lined with red, blue and green. Yellow Y on the head.



LINED ELYSIA

(*Elysia pratensis*) 3 cm / 1.2 in

Green with distinctive longitudinal white stripes. Solid black line along parapodial edge. Yellow-tipped rhinophores.

 Elysias are often found on green macroalgae such as the Mermaid's Fan (p. 19) or Pinecone Alga (p. 20). They are generally found in the shallower areas of the reef as these are closer to the sunlight that is needed to keep their resident plant material producing food for them.



HORNED ELYSIA

(*Elysia cornigera*) 1 cm / 0.4 in

White to greenish body with brilliant red and pale orange spots. Long tapering rhinophores, usually held forward.



TAINO ELYSIA

(*Elysia taino*) 2 cm / 0.8 in

White to light green with papillae on head. Red flecks on parapodial edge. Dark band on short knobby rhinophores.



PAWLIK'S ELYSIA

(*Elysia pawliki*) 3 cm / 1.2 in

Yellowish-green body with white papillae. Three flaps on dark-rimmed parapodia, the middle one distinctively long.



ZULEICA'S ELYSIA

(*Elysia zuleicae*) 2 cm / 0.8 in

Olive-green, often with iridescent blue spots. Sometimes has a black tail. Large eyes. Purplish-brown rhinophores.



ZEMI'S ELYSIA

(*Elysia zemi*) 1.5 cm / 0.6 in

Mottled orange-brown parapodia, often opened. Olive head and body. Purple acorn-shaped patch on the head.



ELLEN'S ELYSIA

(*Elysia ellenae*) 1 cm / 0.4 in

Pale green to white body. Parapodia lined with red. Red spot on short rhinophores. Distinctive blue eyeshadow.



SEAGRASS ELYSIA

(*Elysia serca*) 8 mm / 0.3 in

Large head and short rhinophores. White patch on head and on parapodia. Only found on Turtle Grass (p. 11).



YELLOW ELYSIA

(*Elysia flava*) 2 cm / 0.8 in

Light yellow to tan body, often with dark blotches. Short rhinophores. Distinctive white rim along parapodial edge.



EYESPOT COSTASIELLA

(*Costasiella ocellifera*) 1 cm / 0.4 in

Bulbous pointed green cerata with orange bands and black spots. Often a small blue spot above close-set black eyes.



The Eyespot Costasiella is a sacoglossan, or sapsucking slug, that is only found on very specific hosts, the *Aorainvillea* algae such as Paddle Blade Alga (p. 21). Dozens of these tiny animals can be found on the same plant, often sheltering in the recesses between the individual blades.



SAND COSTASIELLA

(*Costasiella arenaria*) 8 mm / 0.3 in

Pale green to dark brown with bright speckles on dense cerata. Brown line on rhinophores. Found on fine sand.



BLACK COSTASIELLA

(*Costasiella nonato*) 5 mm / 0.2 in

Black with white patches around eye and outer edge of rhinophores. Black cerata with white spots. White foot.



ANTILLES OXYNOE

(*Oxynoe antillarum*) 5 cm / 2 in

Green or yellowish body with conical white papillae and sometimes blue spots. Often on *Caulerpa* algae (p. 13).



LINEDSHELL LOBIGER

(*Lobiger souverbii*) 3 cm / 1.2 in

Bulbous green shell with thin dark lines and blue spots. Four distinctively tall parapodial lobes with white papillae.



BLUESPOT OXYNOE

(*Oxynoe azuropunctata*) 2 cm / 0.8 in

Greenish body with blue spots on closed parapodia and on rhinophores. White papillae on parapodia and foot.



MARCUS'S ELYSIA

(*Elysia marcusii*) 1 cm / 0.4 in

Green body with a distinctive cleft on the right side behind the head. Found on *Halimeda* algae (p. 22).



MIMIC BOSELLIA (VARIATION)

(*Bosellia mimetica*)

Sometimes dark with scattered white spots concentrated around rhinophores. Green color varies as they feed.



MIMIC BOSELLIA

(*Bosellia mimetica*) 1.5 cm / 0.6 in

Flattened pale green body with parapodia held open. Stubby rhinophores. Found on *Halimeda* algae (p. 22).



HARLEQUIN GLASS SLUG

(*Cyerce cristallina*) 5 cm / 2 in

Pale body and purple rhinophores. Large translucent cerata have brownish to bright purple tips and thin white lines.



Glass slugs are delicate sacoglossans that have their digestive tracts inside large transparent cerata and so their color can vary as they feed, appearing darker. They are largely nocturnal. In the daytime they may be found under coral rubble or dead leaves in shallow reef areas and lagoons.



ANTILLES GLASS SLUG COMPLEX

(*Cyerce* spp.)

Ceratal shape and facial markings vary. New studies show there are over a dozen closely related species.



ANTILLES GLASS SLUG

(*Cyerce antillensis*) 6 cm / 2.4 in

Transparent cerata with irregular white-tipped edges. Long oral tentacles. Feeds on Watercress Alga (p. 23).



CROSSBEARER HERMAEA

(*Hermaea cruciata*) 5 mm / 0.2 in

Translucent body with white and brown spots. Elongated transparent cerata with pale cross-like markings at tips.



BLUE STILIGER

(*Ercolania coerulea*) 1.5 cm / 0.6 in

Translucent body with dark green lines. Inflated white-tipped cerata. Found on Green Bubble Weed (p. 19).



MURCA GLASS SLUG (VARIATION)

(*Mourgona murca*)

If the animal has not been feeding, the cerata's digestive tracts are empty and it appears pale or even transparent.



MURCA GLASS SLUG

(*Mourgona murca*) 1 cm / 0.4 in

Inflated and rounded cerata with visible dark green digestive tracts. Long brown rhinophores with white tips.



BURNT PLACIDA

(*Placida cremoniana*) 1.2 cm / 0.5 in

Orange body with pointed orange and black cerata. Black rhinophores with pale blue or white posteriors.




KINGSTON'S PLACIDA

(*Placida kingstoni*) 1.5 cm / 0.6 in

Translucent body with green digestive tracts. Cerata on either side of body, leaving the white pericardium visible.



BLACK-SPOTTED NUDIBRANCH
(Ceratothyllidia papilligera) 3 cm / 1.2 in
 Solid white dorsum with pointed gray tubercles,
 each circled in black. Black-tipped rhinophores.

 Dorid nudibranchs have large exposed gill structures on their backs, used to extract oxygen directly from the seawater. It is not always visible because it can be quickly retracted if the animal senses danger. The word nudibranch comes from Latin and Greek, meaning “naked gills.”

Rhinophores are tall sensory organs on top of the head that can detect chemical traces in the water. Nudibranchs do have a kind of simple vision but most of their environment is sensed by smell.



Nudibranchs leave a faint mucus trail that others of the same species can detect. This is how they find and follow each other, in a unique behavior called “tailing.” It is often a prelude to mating. There are no males or females, they can each lay ribbon-like egg masses, a sure sign there are nudibranchs in the area.



HARRIS'S THORDISA

(*Thordisa harrisi*) 4 cm / 1.6 in

Orange dorsum covered with distinctive sharply pointed dark papillae. Pale brown gills with six branching leaves.



CARIBBEAN SPANISH DANCER

(*Hexabranhus morsomus*) 13 cm / 5 in

Pale orange to dark red dorsum and thickened mantle edges (only when disturbed). Red rhinophores and gills.



LEATHER-BACKED DORIS (VARIATION)

(*Platydorid angustipes*)

Small individuals may show clusters of small white spots on dorsum and white bars or triangles on mantle edges.



LEATHER-BACKED DORIS

(*Platydorid angustipes*) 15 cm / 6 in

Bright red mottled dorsum with thin pale mantle edges. Dark rhinophores and large pale brown branching gills.



ORANGEBALL TARINGA (VARIATION)

(*Taringa telopia*)

Small individuals are often darker brown, with radiating white spots on gill and rhinophore sheaths more visible.



ORANGEBALL TARINGA

(*Taringa telopia*) 4 cm / 1.6 in


Bright orange with darker patches and covered in fine ciliated tubercles. Pale rhinophores with brown speckles.



WHITE-V TRAPANIA

(*Trapania dalva*) 1.2 cm / 0.5 in

Dark brown with white blotches and small orange spots.
White lines run from rhinophores to large pale gills.

 Most nudibranchs have a very short lifespan, usually only about one year. After hatching, the young may crawl away or may enter a planktonic larval stage. The tiny *Tenellia* species (p. 202) are sexually mature after only a few weeks and may only live for two or three months.



STRIPED POLYCERA

(*Kankelibranchus alhenae*) 2.5 cm / 1 in

Longitudinal red lines and white blotches. Branching red appendages on oral veil. Red on gills and rhinophores.



ANTILLEAN DORIS

(*Aphelodoris antillensis*) 4 cm / 1.6 in

Translucent dorsum with dark brown speckles. Mantle fringed with white and yellow, with larger black spots.



BROWN DIAULULA

(*Diaulula phoca*) 5 cm / 2 in

Purplish-brown dorsum with tiny tubercles, rhinophores and gills of same color. Rigid mantle. Feeds on sponges.



FARMER'S DIAULULA

(*Diaulula farmersi*) 4 cm / 1.6 in

Dirty yellow dorsum with brown patches. Low sheaths on dark rhinophores. Rows of white glands around mantle.



YELLOW DORIOPSILLA

(*Doriopsilla* sp.) 2 cm / 0.8 in

Uniformly yellow to orange oval dorsum with rounded tubercles. Rhinophores and gills same color as body.



LILACINA DORIS

(*Tayuva lilacina*) 5 cm / 2 in

Flattened gray to purple dorsum with dark blotches and raised central area. Brown rhinophores with white tips.



TISHA'S BLACK-LINED DORIS

(*Doriopsilla tishae*) 2.5 cm / 1 in

Yellow with black lines between pale tubercles. Honduras only, similar *D. nigrolineata* has white-ringed tubercles.



RED-SPECKLED DORIS

(*Doriopsilla espinosai*) 1.5 cm / 0.6 in


Translucent white dorsum with red speckles. Covered in low rounded tubercles. White gills and rhinophores.



SLIMY DORIS

(*Dendrodoris krebsii*) 7 cm / 2.8 in

Smooth rounded dorsum with a ruffled mantle skirt. Gills and rhinophores are of the same color, tipped with white.

 The Slimy Doris is one of the more common dorid nudibranchs in the Caribbean. They are often solid black but can also be found in red or white or a mottled pattern. All have distinctive white tips on the gills and rhinophores. They are commonly found hiding under shallow rubble.



SLIMY DORIS (VARIATION)

(*Dendrodoris krebsii*)

Spots can be black, white, gray or reddish. There may be vein-like markings on the margins of the mantle.



BROWN'S DORIS

(*Atagema browni*) 2.5 cm / 1 in

Pale gray dorsum with black blotches. Elevated rows of white tubercles. Gills and rhinophores match body color.



KNOBBY DORIS

(*Sclerodoris prea*) 4 cm / 1.6 in

Creamy-brown dorsum with brownish spots. Two distinct rows of knobby tubercles run from rhinophores to gills.



WORK'S DORIS

(*Sclerodoris worki*) 5 cm / 2 in

Creamy-brown dorsum, often with darker patches. Large orange tubercles in a cauliflower shape, ringed in white.



DAVID BOWIE'S JORUNNA

(*Jorunna davidbowieii*) 2.5 cm / 1 in

White, turns pink when disturbed. Speckled rhinophores and gills with white tips. Yellow glands around mantle.



PALE CADLINA

(*Cadlina rumia*) 4 cm / 1.6 in

White to creamy-yellow oval dorsum with distinctive rows of yellow glands. Rhinophores pale to golden brown.



SPECKLED JORUNNA

(*Jorunna coloradilla*) 2.5 cm / 1 in

Flattened pale dorsum with purplish-red dots. Gills and rhinophores are darker, with small brownish speckles.




BRUSH JORUNNA

(*Jorunna spazzola*) 2.5 cm / 1 in

White dorsum covered in tiny papillae. Rhinophores and gills are pale. Tiny white glands around mantle edges.



 Sea goddesses are colorful sea slugs in the chromodorid family and are a particular favorite of nudibranch hunters. The bright colors of these animals are no accident; they are a warning to fish and other potential predators, called aposematic coloration. Sea goddesses feed on sponges that are toxic to other animals and they store these toxins in specialized glands on their mantles.

The planktonic larval stage of some species is very short and so they have a limited geographic range, while others have spread more widely throughout the entire Caribbean.



HARLEQUIN SEA GODDESS

(*Felimida binza*) 3.5 cm / 1.4 in

Large red areas on dorsum extend down to become lines on a white mantle edge. Pale blue spots circled in red.



CLENCH'S SEA GODDESS

(*Felimida clenchi*) 3.5 cm / 1.4 in

Red areas on dorsum do not extend to mantle edge. Patterns for this species are more varied than *F. binza*.



GOLD-LINED SEA GODDESS

(*Felimare ruthae*) 2.5 cm / 1 in

Dark blue to black with yellow lines on dorsum. Yellow margin on white mantle edge, interrupted at midbody.



PURPLE-SPOTTED SEA GODDESS

(*Felimare marci*) 5 cm / 2 in

Brownish body with small purple spots on dorsum and sides. White gills lined in brown. White rhinophores.



REDLINE BLUE SEA GODDESS

(*Felimare nyalya*) 4 cm / 1.6 in

Blue dorsum with dark blue rhinophores and gills. Mantle edged in yellow with a thin red margin. Prefers shallows.



PURPLE-CROWNED SEA GODDESS

(*Felimare kempfi*) 2.5 cm / 1 in

White dorsum with large black blotches. Broad yellow band around mantle edge. Purple gills and rhinophores.



GOLD-CROWNED SEA GODDESS

(*Felimare acriba*) 7 cm / 2.8 in

Yellow dorsum with purple spots. Gold line on ruffled mantle edge. Brown-lined gills. Pale purple rhinophores.



RED-TIPPED SEA GODDESS

(*Chromolaichma sedna*) 5 cm / 2 in

White dorsum with ruffled mantle, outlined in red and bright yellow. Red tips on white gills and rhinophores.



TUFTED NUDIBRANCH

(*Tritoniopsis frydis*) 2.5 cm / 1 in

Highly branched cerata surround the dorsum. Flattened oral veil with short tentacles. Sheathed rhinophores.



Tufted Nudibranchs are found in a variety of colors, sometimes grouped together on the same coral.



Tritonid nudibranchs are characterized by sheathed rhinophores and the arrangement of the cerata, which are often in pairs of tufts along the sides of the body rather than on the back as in other nudibranchs. They also have a fleshy veil of oral tentacles at the front of their heads. Look for areas on gorgonians where the outer layer of flesh has been stripped away. Here one can find spiral-shaped egg masses that the nudibranch has been laying, often easier to spot than the animal itself. They commonly hide and feed under dead sea fans and gorgonians on the reef floor.



TRITONID NUDIBRANCHS : INVERTEBRATES



HAMNER'S TRITONIA

(*Tritoncula hamnerorum*) 2.5 cm / 1 in

Smooth light brown body with thin white stripes. Short widely spaced tufts of cerata. Long tentacles on oral veil.



CRISSCROSS TRITONIA

(*Tritoncula bayeri*) 2 cm / 0.8 in

Pink to translucent dorsum with a fine network of white to yellow reticulated lines. Short yellow branching cerata.



WELLS'S TRITONIA

(*Tritoncula wellsii*) 1.5 cm / 0.6 in

White speckles on a tapering gray to pinkish dorsum. Small branching cerata and a broad rounded oral veil.



TASSELED NUDIBRANCH

(*Bornella calcarata*) 7 cm / 2.8 in

Orange to reddish body with small white tubercles and lines. Stocky rhinophores. Feeds on hydroids (p. 136).



PHIOPS NUDIBRANCH

(*Lomanotus phiops*) 8 mm / 0.3 in

Translucent gray to light brown with white and brown spots. Rhinophores distinctively tall with conical tips.



SARGASSUM NUDIBRANCH

(*Scyllaea pelagica*) 10 cm / 4 in

Light brown with white blotches or blue spots. Tall lobes on back. Found camouflaged in sargassum rafts (p. 24).



GRAPECLUSTER DOTO

(*Doto uva*) 1.2 cm / 0.5 in

Dark body with white spots. White-rimmed sheaths on black rhinophores. Bulbous cerata. Found on hydroids (p. 136).



Dotos are a group of dendronotid nudibranchs that feed on hydroids. Only a few millimeters long, they are challenging to spot on the reef. Notoriously difficult to identify, there are still many undescribed species. They are another group of nudibranchs that needs genetic testing and revising.



GRAPECLUSTER DOTO (VARIATION)

(*Doto uva*)

After feeding, the digestive tracts in the cerata are dark, and tubercles on the cerata appear more pronounced.



UNDESCRIBED DOTO

(*Doto cf. cabecar*) 1.2 cm / 0.5 in

Translucent pale yellow with dark blotches on sides and rhinophores. Black spots on tubercles of pale cerata.



CREUTZBERG'S BERGHIA

(*Berghia creutzbergi*) 3 cm / 1.2 in

Brown dorsum with white spots. Banded pointy cerata. Rhinophores with knobby tubercles. Short oral tentacles.



BRAZILIAN SPURILLA

(*Spurilla braziliana*) 4 cm / 1.6 in

Pale orange with white spots on both head and dorsum. Lamellate rhinophores, shorter than the oral tentacles.



SARGASSUM SPURILLA

(*Spurilla sargassicola*) 4 cm / 1.6 in

White spots on dorsum may join as patches, the sides are solid brown. Curved tapering cerata with white tips.



ANNE'S SPURILLA

(*Spurilla dupontae*) 4 cm / 1.6 in

Translucent brown dorsum with white spots. Distinctive brown reticulated pattern, continuing onto rhinophores.



ORANGE-SPOTTED NANUCA

(*Nanuca sebastiani*) 1.2 cm / 0.5 in

Green to translucent body with white patches and orange spots. White stripes on separated clusters of cerata.



GAUDY AEOLID

(*Babakina anadoni*) 1 cm / 0.4 in

Pinkish-gray body. White, blue, yellow and red on cerata. White patch on front of head. Rhinophores fused at base.



FROSTY MORDILLA

(*Noumeaella kristenseni*) 1.5 cm / 0.6 in

Translucent white with a network of thin white lines.

Similar markings on oral tentacles, head and long cerata.



Aeolid nudibranchs are characterized by the sharp pointed cerata on their backs, serving many purposes: breathing, digestion and weapons. Aeolids often feed on hydroids and store the stinging cells, called nematocysts, in the cerata as defense. The Cassiopea Dondice (following page) gets its nematocysts from Upsidedown Jellies.

Aeolids are simultaneous hermaphrodites, producing both eggs and sperm. The two on the right are fighting for dominance, attacking each other with their cerata. The loser will be injected with sperm and carry fertilized eggs.

Nudibranchs move across the reef on a flat muscular foot, often laying down a mucus trail that makes it easier for them to glide over. Some species have fine hairs, or cilia, that help them glide over the mucus. The foot is very strong and only a small fraction needs to be in contact with the reef for the nudibranch to keep itself in place. Larger nudibranchs use waves of muscular contractions to pull themselves along. Some species, such as the Spanish Dancer (p. 187), are able to swim by rhythmically flapping their mantles.





CHRISTMAS TREE HYDROID NUDIBRANCH

(*Learchis poica*) 2.5 cm / 1 in

Translucent to orange with dark cerata. White on head, white stripe down body. On hydroid *P. disticha* (p. 137).



LYNX NUDIBRANCH

(*Phidiana lynceus*) 4.5 cm / 1.8 in

Distinctive blue line runs along dorsum, divides on the head and continues onto long white-tipped oral tentacles.



CASSIOPEA DONDICE

(*Dondice parguerensis*) 5 cm / 2 in

White stripe running down dorsum. Thin white ring on tips of cerata. Found on Upsidedown Jellies (p. 110).



FRINGEBACK DONDICE

(*Dondice occidentalis*) 5 cm / 2 in

Head with median orange line and two lateral blue lines. Dark jaw area. Cerata and oral tentacles with white tips.



ARIANE'S DONDICE

(*Dondice arianeae*) 3 cm / 1.2 in

Broken pinkish-white line down dorsum. Blue spots on edge of foot. Spots on long oral tentacles. From Florida.



FREDDIE MERCURY'S DONDICE

(*Dondice freddiemercuryi*) 2.5 cm / 1 in

Head with orange line and two leaf-like marks. Red rings on bulbous cerata. Bluish band at base of oral tentacles.



LONG-EARED FAVORINUS

(*Favorinus auritulus*) 1.5 cm / 0.6 in

Rounded cerata with white markings. Rhinophores with distinctive bulges. Feeds on the eggs of other sea slugs.



The Long-eared Favorinus is unique among aeolids; it has adapted to feed primarily on the eggs of other species of sea slugs. It is commonly found in shallow seagrass beds and lagoons where sap-sucking slugs (p. 178) are more abundant. The animal above is seen feeding on an elysia's eggs.



WHITE-SPECKLED AEOLID

(*Pauleo jubatus*) 5 cm / 2 in

Yellow body with tufts of thick dense cerata with white speckles and tips. Yellow rhinophores and oral tentacles.



WARTY AEOLID

(*Limenandra nodosa*) 1.5 cm / 0.6 in

Greenish-brown body with white patches on dorsum. Row of pink circles and yellow spots. Thick warty cerata.

AEOLID NUDIBRANCHS : INVERTEBRATES



LONGHORN NUDIBRANCH

(*Austreaolis catina*) 2.5 cm / 1 in

Elongated orange body. Two distinctive white spots on head. White tips on rhinophores and long oral tentacles.



PURPLERING FLABELLINA

(*Coryphellina marcusorum*) 2.5 cm / 1 in

Translucent to orange body. Long distinctively pointed cerata and rhinophores, with purple rings and pale tips.



NIPPLED PALISA

(*Palisa papillata*) 2 cm / 0.8 in

Gray to orange with white spots. Bulbous cerata with white nipples. Pale oral tentacles with thin orange bands.



ENGEL'S FLABELLINA

(*Flabellina engeli*) 2.5 cm / 1 in

Widely spaced cerata with orange bands, connected by thick white lines. White-tipped rhinophores and tentacles.



DUSHIA FLABELLINA (VARIATION)

(*Flabellina dushia*)

The color of the digestive tracts in the cerata varies from red to bright orange or yellow, sometimes as a thin band.



DUSHIA FLABELLINA

(*Flabellina dushia*) 2 cm / 0.8 in


White dorsum with elongated tail. Clusters of transparent cerata showing digestive tracts. Smooth rhinophores.



TENELLIA SP. 1

(*Tenellia* sp.) 1.5 cm / 0.6 in

Solid yellow line on nape. Orange-ringed bulbous cerata.
Red lines on face. Long foot with white spots and blotches.

 *Tenellia* nudibranchs are a good example of how little is known of many nudibranchs. These tiny, often brightly colored animals have been shuffled into and out of many genera over the years, such as *Cuthona*, *Trinchesia* and more. Known but undescribed species are simply given numbers.



TENELLIA SP. 2

(*Tenellia* sp.) 1.5 cm / 0.6 in

Widely spaced smooth oral tentacles. Red markings on rhinophores. The inflated cerata are typical of the genus.



TENELLIA SP. 3

(*Tenellia* sp.) 1.5 cm / 0.6 in

Prominent sloping head with white patches continuing onto body. Dark digestive tracts visible in nipped cerata.



CONE EUBRANCHUS

(*Eubranchus conicla*) 5 mm / 0.2 in

Translucent gray with brown and white spots. Few long and very bulbous cerata. Bands on smooth rhinophores.



TATTY SLUG

(*Janolus comis*) 1 cm / 0.4 in

Translucent gray with white speckles. Sharp tubercles on long inflated cerata. Caruncle between tall rhinophores.



OASIS AEOLID

(*Bulbaeolidia oasis*) 1.2 cm / 0.5 in

Chalk-white with red spots on cerata tips. Rhinophores have distinctive swellings and small reddish striations.



MAUA AEOLID

(*Catirona maua*) 1.2 cm / 0.5 in

Gray with white on dorsum. Pink cerata with white bands, widest past mid-point. Red stripe on lower rhinophores.



GOLD-FRINGED CERBERILLA

(*Cerberilla potiguara*) 2.5 cm / 1 in

Blue body with rows of grayish-blue cerata with orange spots. Long blue oral tentacles and short rhinophores.



PLANKTONIC NUDIBRANCH

(*Phylliroe bucephala*) 5.5 cm / 2.2 in

A pelagic nudibranch species that is rarely seen drifting over a reef. Transparent body circled with white spots.



Headshield slugs are most commonly found on sand, where they can bury themselves when disturbed. They have a tiny internal shell and rounded, often colorful mantle edges called parapodia that are folded against the body. Characterized by their wide flattened heads, these sea slugs vary greatly in their patterns and markings and are sometimes difficult to identify on a dive. Instead of rhinophores, these slugs have fine, hair-like bristles for sensing the environment and finding food and mates. They are simultaneous hermaphrodites and lay thin clear ribbons of eggs.



BEROLINA AGLAJA

(*Camachoaglaja berolina*) 1.2 cm / 0.5 in

Black body with white blotches. One short round tail and one longer thin tail. Orange lines on head and parapodia.



BEROLINA AGLAJA (VARIATION)

(*Camachoaglaja berolina, forma melanica*)

C. berolina is found in a wide variety of patterns and markings or solid black. One tail is distinctively longer.

HEADSHIELD SLUGS : INVERTEBRATES



JEWELED AGLAJA

(*Navanax gemmatus*) 5 cm / 2 in

Light brown to reddish body with white blotches or faint lines. Distinct lobes on head. Blue spots on parapodia.



PUSA AGLAJA

(*Phillinopsis pusa*) 4 cm / 1.6 in

Color varies from gray to dark brown. Distinctive pointed lobe at midbody. Two equal-sized rounded lobes on tail.



BLACK AGLAJA

(*Nakamigawaia felis*) 1 cm / 0.4 in

Jet-black body with two small lobes on the tail, one slightly longer than the other. May show thin white lines.



NORMAN'S AGLAJA

(*Chelidonura normani*) 1 cm / 0.4 in

Variable black and white markings, often with pale blue near the head and tail. No orange lines on parapodia.



CUBAN AGLAJA

(*Chelidonura cubana*) 1.5 cm / 0.6 in

Red to black body with blue spots and faint orange lines. Distinctive white patch on front of head and at midbody.




LEECH AGLAJA

(*Chelidonura hirundinina*) 2.5 cm / 1 in

Dark reddish body with two tapering tails of equal length. Orange and blue stripes. A solid white bar at midbody.



 Seahares get their name from a pair of tall rhinophores that are usually held straight up over their heads, like a rabbit's ears. They are most often found in the shallows, where they feed on algae. A shell is hidden under fleshy folds on the back called parapodia. In some seahare species, these parapodia can be flapped back and forth in an ungainly kind of swimming.

If attacked, many seahares can release a cloud of toxic ink that affects the olfactory senses of a predator, allowing them to escape. Similar toxins are stored in the flesh as another deterrent.



ATLANTIC BLACK SEAHARE

(*Aplysia morio*) 40 cm / 16 in

Dark purple to black body with some faint mottling. Can sometimes spread its parapodial wings to swim away.



SPOTTED SEAHARE

(*Aplysia dactylomela*) 20 cm / 8 in

Tan to greenish-brown body. Numerous dark circles and pale spots. Parapodial wings usually closed over back.



WHITE-SPOTTED SEAHARE

(*Aplysia parvula*) 3.5 cm / 1.4 in

Robust cream to brown body with white blotches. Dark lines along parapodia and rhinophore and tentacle tips.



HESSAM'S SEAHARE

(*Aplysia ghanimi*) 2.5 cm / 1 in

Elongate brownish-red body with white speckles. Dark edges on parapodia and rhinophore and tentacle tips.



BABA'S SEAHARE (VARIATION)

(*Petalifera ramosa*)

The color of each seahare depends on the algae it has been feeding on. Some have tufted knobs of tubercles.



BABA'S SEAHARE

(*Petalifera ramosa*) 7 cm / 2.8 in

Green to reddish-brown body with a pattern of pale conical knobs, each outlined in white. Prefers shallows.



WARTY SEACAT

(*Dolabrifera dolabrifera*) 9 cm / 3.5 in

Green to brown body, wider towards the rear. Scattered rough papillae. Short rolled rhinophores and tentacles.



GEOGRAPHIC SEAHARE

(*Syphonota geographica*) 17 cm / 6.8 in

Tan to greenish body with long white lines or reticulated patterns. Rhinophores close-set, between parapodia.



STRIATED SEAHARE

(*Stylocheilus polyomma*) 4.5 cm / 1.8 in

Tan body with thin brown lines and a large hump on the back. Long tapering tail. Tiny blue spots circled in red.



Seahares have two prominent oral tentacles that are used for detecting chemical traces in the water. This leads them to a favorite alga for feeding, or to other seahares. Hundreds of them can gather together to mate. There are no males or females, they are simultaneous hermaphrodites.



PINBALL SEAHARE

(*Notarchus punctatus*) 3.5 cm / 1.4 in

Globular yellowish to translucent gray body covered with short unbranched papillae. Internal organs are visible.



RAGGED SEAHARE

(*Bursatella leachii*) 15 cm / 6 in

Tan to dark brown body with numerous white spots and blotches. Covered in long pale branching papillae.



EMERALD LEAFSLUG

(*Phyllaplysia smaragda*) 2.5 cm / 1 in

Elongated emerald-green body with gray-pink patch on left of dorsum. Gray on rhinophores and oral tentacles.



TURTLE GRASS SEAHARE

(*Phyllaplysia engeli*) 2 cm / 0.8 in

Translucent green body with lighter patches, most often with longitudinal lines. Found flattened on Turtle Grass.



RANG'S SEAHARE (VARIATION)

(*Petalifera petalifera*)

Highly variable in color and markings. All have a small opening in the parapodia, at middle-rear of the dorsum.



RANG'S SEAHARE

(*Petalifera petalifera*) 4 cm / 1.6 in

Translucent green to brown body with white specks or short lines around the mantle edge. Fused parapodia.



WALKING SEAHARE

(*Aplysia juliana*) 15 cm / 6 in

Color varies, often brown with pale spots. While moving, a sucker on rear foot anchors it while the body stretches.



MOTTLED SEAHARE

(*Aplysia brasiliana*) 25 cm / 10 in


Translucent yellowish-brown or green to black. Irregular brown mottling and white patches. An active swimmer.



WARTY SIDEGILL SLUG

(*Pleurobranchus areolatus*) 15 cm / 6 in

Rounded tubercles cover the dorsum. Highly variable in color: yellow, gold or purple. Short fused rhinophores.

 Sidegill Slugs only have one set of gills, on the right-hand side, hidden between the mantle and the foot. They begin life with shells, which shrink or may even disappear completely as they grow older. If attacked, they can release a strong toxin containing sulphuric acid.



APRICOT SIDEGILL SLUG

(*Berthellina quadridens*) 8 cm / 3.2 in

Smooth uniformly dark orange to reddish body. Broad flattened oral veil. Found in areas of sand and rubble.



NEBULA SIDEGILL SLUG

(*Berthella nebula*) 2 cm / 0.8 in

Translucent white dorsum with small white papillae and pale blotches. Rolled rhinophores and a wide oral veil.

SIDEGILL SLUGS / BUBBLE SNAILS : INVERTEBRATES



TRANSPARENT LAMELLARIA

(*Lamellaria perspicua*) 4 cm / 1.6 in

Fleshy mantle covers the entire shell. May be confused for a sea slug; distinctive single raised siphon at front.



FLAPPING DINGBAT

(*Gastroteron chacmol*) 8 mm / 0.3 in

Parapodia overlap, covering a small shell. Single siphon above head. Swims when disturbed, or buries into sand.



ELEGANT GLASSY BUBBLE

(*Haminoea elegans*) 4 cm / 1.6 in

Translucent yellow to brown with dark spotting. Notched cephalic shield. Parapodia cover only the front of shell.



AMBER GLASSY BUBBLE

(*Haminoea succinea*) 2 cm / 0.8 in

Brownish-gray parapodia barely cover a speckled shell. Buries in the sand and mud, mostly in shallow areas.



WESTERN STRIATE BUBBLE

(*Bulla occidentalis*) 5 cm / 2 in

Pale tan to whitish shell with brown reticulated markings. White spots on the mantle, often completely retracted.



MINIATURE MELO

(*Micromelo undatus*) 3 cm / 1.2 in


White shell with reddish-brown wavy lines. Pale mantle with large white spots and greenish-yellow margins.



SPECTACULAR COROLLA

(*Corolla spectabilis*) 7 cm / 2.8 in

A sea butterfly with distinctive white speckles and broad disc-shaped wings. Can produce a feeding web up to 2 m wide.

 Not all mollusks are found on the reef, some have evolved to live a planktonic life. The feet are modified into wing-like parapodia for swimming. Shells are either absent or reduced to an internal structure called a pseudoconch (seen above) that doesn't weigh them down in the water column.



SEA BUTTERFLIES

(*Cavolinia* spp.)

A broad group of agile planktonic mollusks that can produce a large sticky web of mucous to trap their prey.



SEA ELEPHANT

(*Pterotrachea coronata*) 26 cm / 10 in

Nearly transparent body with a long bulbous proboscis and dark eyes. Foot appears as a single swimming fin.

PLANKTONIC MOLLUSKS / CLAMS : INVERTEBRATES



SUNRISE TELLIN

(*Tellina radiata*) 7.5 cm / 3 in

Cream to yellowish valves with broad radiating pink lines. Only empty valves are found; usually buried under sand.



FAVORED TELLIN

(*Johnsonella fausta*) 10 cm / 4 in

Thick oval to triangular, semi-glossy white valves. Thin gray growth rings and dark hinge usually visible.



BUTTERCUP LUCINE

(*Anodontia alba*) 7.5 cm / 3 in

Rounded pale brown to yellow valves with faint growth lines. Pale interior with numerous short white tentacles.



WAVY CYMATIUM

(*Cymatium undulata*) 6 cm / 2.4 in

Rounded glossy white valves with thin faint ribs. Found in rubble. Long foot used to move quickly into shelter.



EGG COCKLE

(*Laevicardium serratum*) 6 cm / 2.4 in

Smooth polished-looking valves. Cream to yellowish with orange or brown marks that may be zigzag, as above.



MAGNUM COCKLE

(*Acrosterigma magnum*) 9 cm / 3.5 in


Cream to reddish-brown valves. Distinct radial ribs (with fine concentric threads) lead to serrated valve margins.



ANTILLEAN FILECLAM

(*Limaria pellucida*) 2.5 cm / 1 in

Pale oblong valves with tiny spines on radiating ribs. Long pink to reddish tentacles, often with faint white banding.

 Oysters and mussels stay attached to the reef by secreting threads of protein called byssus, while fileclams and scallops are able to move about in an ungainly kind of swimming by flapping their valves open and closed. Clams and cockles can dig into the sand, using a long powerful foot.



ROUGH FILECLAM

(*Ctenoides scaber*) 9 cm / 3.5 in

Rounded valves and deep red mantle folds. Long white, red or pink tentacles. Found hiding in narrow crevices.



SPINY FILECLAM

(*Lima lima*) 9 cm / 3.5 in

Pale rounded valves with fine ribs with small spines. Interior mantle and short tentacles are red to lavender.



KNOBBY SCALLOP

(*Caribachlamys pellucens*) 4 cm / 1.6 in
Radial ribs of both valves covered with short knobby projections with white tips. Short translucent tentacles.



ORNATE SCALLOP

(*Caribachlamys ornata*) 5 cm / 2 in
White valves with dense radial ribs and broken pattern of reddish-brown bands. Found among shallow rubble.



MANY-RIBBED SCALLOP

(*Laevichlamys multisquamata*) 2.5 cm / 1 in
Numerous thin radial ribs, often covered with commensal sponge, as seen above. Short red and white tentacles.



ANTILLEAN SCALLOP

(*Antillipecten antillarum*) 2.5 cm / 1 in
Flattened yellow to light brown valves with wavy streaks. Widely spaced low radial ribs. May attach to gorgonians.



STIFF PEN SHELL

(*Atrina rigida*) 27 cm / 11 in
Dark to light brown valves with numerous raised ridges. Sharply pointed end is hidden in reef, sand or sponges.



AMBER PEN SHELL

(*Pinna carnea*) 23 cm / 9 in
Extremely thin fan-shaped valves with rounded tops and faint radiating ribs. Translucent amber to gray in color.



ATLANTIC THORNY OYSTER

(*Spondylus americanus*) 15 cm / 6 in

Rounded deep red valves with numerous pointed spines on both top and bottom. Brownish mantle with white blotches.



Bivalves are mollusks that have bodies enclosed in a shell of two hinged parts, or valves. Radial ribs give extra strength to each valve and spines sometimes offer extra protection. The age of bivalves can be measured by concentric growth rings and some can live for decades.



DIGITATE THORNY OYSTER

(*Spondylus tenuis*) 7 cm / 2.8 in

Brick-red to pale orange. Upper valve with radial ribs and long flattened spines, lower valve cemented to the reef.



FROND OYSTER

(*Dendostrea frons*) 7 cm / 2.8 in

Valve edges have a distinctive zigzag pattern. Often attached to gorgonians and encrusted with sponge.



RADIAL PURSE OYSTER

(*Isognomon radiatus*) 7 cm / 2.8 in

Thin light brown valves with radiating white lines and visible concentric rings. May grow in dense clusters.



ATLANTIC WING OYSTER

(*Pteria colymbus*) 7.5 cm / 3 in

Dark brown valves with a distinctive point near the hinge. Found attached to gorgonians, often heavily encrusted.



ATLANTIC KITTENPAW OYSTER

(*Plicatula gibbosa*) 2.5 cm / 1 in

Thick fan-shaped valves with large radial ribs. White with red or grayish lines. Found in shallow/intertidal areas.



FLAT TREE OYSTER

(*Isognomon alatus*) 7.5 cm / 3 in

Thin flattened valves and a dark brown interior mantle. Found on shallower reefs, often encrusted with sponges.



BROWN MUSSEL

(*Perna perna*) 10 cm / 4 in

Smooth flattened brown valves with dark gray to black mantle. Found in clumps on mangrove roots and docks.



ASIAN GREEN MUSSEL

(*Perna viridis*) 10 cm / 4 in

Smooth brown valves with bright green margins. An invasive species, recently introduced to the Caribbean.



ORNATE CHITON

(*Tonica schrammi*) 2.5 cm / 1 in

Plates are patterned in green, brown or red. Deep red girdle sometimes showing pale spots or thin bands.



Chitons have eight overlapping plates that allow them to cling onto uneven surfaces or roll up into a ball if dislodged. Often found in the shallows, they can even survive exposed to the air at low tide. Most have a wide variety of plate color and girdle patterns, making identification difficult.



STRIOLATE CHITON

(*Ischnochiton striolatus*) 2 cm / 0.8 in

Faint chevron grooves along the plates. Color varies widely from orange to purple, pink or gray.



MULTIHUED CHITON

(*Ischnochiton erythronotus*) 1.3 cm / 0.5 in

Plates colors are highly variable, including green, purple, orange or pale pink. Girdle often with faint dark bands



WHITE-BARRED CHITON

(*Cryptoconchus floridanus*) 2.5 cm / 1 in

Dark, almost black mantle covers most of the plates' surface, leaving a thin white line visible down the center.



FUZZY CHITON

(*Acanthopleura granulata*) 8 cm / 3.2 in

Brown plates, often encrusted. Girdle with wide dark bands and short bristles. Found close to the waterline.



CARIBBEAN RED CHITON

(*Lepidochitona liozonis*) 1.3 cm / 0.5 in

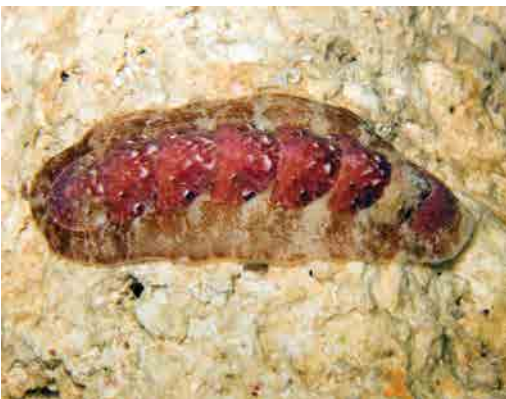
Smooth plates, often red with white spots. Rusty girdle, characteristically without overlapping scales. Uncommon.



RED GLASS-HAIR CHITON

(*Acanthochitona hemphilli*) 2.5 cm / 1 in

Orange-brown girdle almost covers the entire body. Tufts of short bristles extend from sides of each plate.



SLENDER CHITON

(*Stenoplax purpurascens*) 5 cm / 2 in

Elongated body with narrow rounded plates. Plates are often mottled in white. Scaly gray to brown girdle.



SPENGLER'S GREEN CHITON

(*Chiton viridis*) 5 cm / 2 in


Oval body with greenish-brown plates. Ribbed triangles on plates. Scaled girdle with brown and cream banding.



SPOTTED LIMPET

(*Eoacmaea pustulata*) 2 cm / 0.8 in

Flattened oval shell with low blunt apex. Smooth, with low radial ribs. Olive-green to reddish with white spots.

 Limpets have flattened shells and a muscular foot for holding onto rocks, where they feed on algae. Often found right on the waterline, some can anticipate low tide and slowly move down into deeper water. Keyhole limpets (following page) have a small opening for expelling water and waste.



ANTILLES LIMPET

(*Lottia antillarum*) 3 cm / 1.2 in

White shell with scattered brown blotches. Evenly sized concentric ribs run to a slightly scalloped shell edge.



PYGMY LIMPET

(*Hemimarginula pumila*) 1.2 cm / 0.5 in

Highly variable in apex height and form. Concentric threads cross the ribs, giving a laticelike appearance.



FLESHY LIMPETS

(*Lucapina* spp.) 4 cm / 1.6 in

Highly variable in mantle color and markings. Without seeing rib structure, identification often difficult on dives.



SPECKLED FLESHY LIMPET

(*Lucapina sowerbii*) 3 cm / 1.2 in

Alternating large and small radial ribs and few concentric threads. Speckled mantle covers most or all of the shell.



FILE FLESHY LIMPET

(*Lucapinella limatula*) 1 cm / 0.4 in

Relatively large aperture. Distinctive concentric threads over the ribs, giving the appearance of a file's surface.



CANCELLETE FLESHY LIMPET

(*Lucapina suffusa*) 4 cm / 1.6 in

Flattened oval shell with alternating large and small ribs and finely toothed margin. Mantle color highly variable.



LISTER'S KEYHOLE LIMPET

(*Diodora listeri*) 4 cm / 1.6 in

Thick rough-sculptured shell. Tall major ribs with a wavy pattern. Knobby white mantle with distinct dark bands.



DWARF KEYHOLE LIMPET

(*Diodora minuta*) 8 mm / 0.3 in


Pale oval shell with distinctive beaded black ribs. Convex in front and concave behind the dark-rimmed aperture.



FLAMINGO TONGUE

(*Cyphoma gibbosum*) 2.5 cm / 1 in

Pale bulbous shell is wider in the middle. Creamy mantle has orange spots circled in black, often covering the shell.

 The Flamingo Tongue has a thick white shell covered by a colorful mantle. The bright spots act as a warning to potential predators that the snail is toxic; poisons from the gorgonians they feed upon have been stored in the flesh. This is called aposematic coloration. A serrated mouth-part, the radula, is used to scrape the flesh from the gorgonians.

Using a long powerful foot, they move from one gorgonian to the next before they do too much damage, allowing them time to regrow.



Mating takes place on a lunar cycle, with the males extending a small tube under the female's shell. This process can take over three hours. Eggs are laid on the exposed skeletons of the gorgonians. After the eggs hatch, the free-floating larvae will feed on plankton until they are large enough to settle and begin feeding on corals themselves.

Despite the warning colors and unappetizing taste, Flamingo Tongues can be preyed upon by hogfish and lobsters. Their numbers can swell dramatically (almost 20-fold) on reefs where these species are overfished, leading to a loss in coral populations.



TRIANGULAR CYPHOMA

(*Cyphoma cassidyae*) 2.5 cm / 1 in

Elongated shell with white triangles on edges of black or mottled mantle. (Previously *Cyphoma* "black morph.")



FINGERPRINT CYPHOMA

(*Cyphoma signatum*) 2.5 cm / 1 in

Mantle has thin orange lines bordered in black, arranged in a fingerprint pattern. (Previously *Cyphoma gibbosum*.)



BAHAMA SIMNIA

(*Cymbovula acicularis*) 2 cm / 0.8 in

Elongated glossy shell and pale mantle. Thin orange line runs along mantle edge. (Previously *C. bahamensis*.)



WEST INDIAN SIMNIA

(*Cymbovula acicularis*) 2 cm / 0.8 in

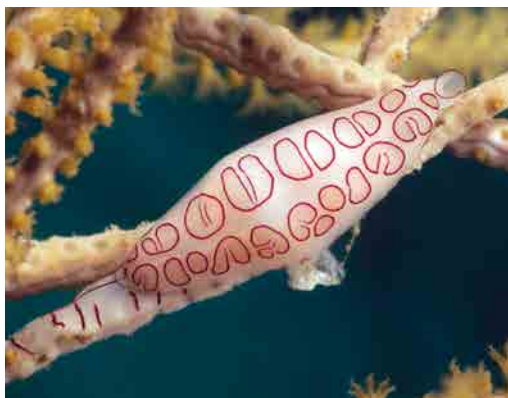
Mantle can change color to match the host gorgonian, often purple. Small pale spots and sometimes papillae.



ONETOOTH SIMNIA

(*Simnialena uniplicata*) 2 cm / 0.8 in

Unmarked mantle is uniform in color. Can be purple, pale pink or white, depending on the host gorgonian.



PINK-CIRCLED SIMNIA

(*Cymbovula* sp.) 2 cm / 0.8 in


Elongated tapering shell. Pale mantle with irregular pink circles outlined in red. Thin dark bars on elongated foot.



ORANGE-SPOTTED MARGINELLA

(*Hyalina chicoi*) 2 cm / 0.8 in

Oblong shell with dark mottling and small orange spots.
Orange spots and white blotches on mantle and proboscis.

 Marginellas are a large group of marine gastropods with dozens of species in the Caribbean and new species are still being described. Typically colorful shells stay glossy because they are usually covered by the mantle when the snail is active. Many will bury into the sand if disturbed.



GLOWING MARGINELLA

(*Prunum pruinosum*) 1.2 cm / 0.5 in

White to yellowish shell with white spots and blotches and faint bands. Translucent mantle with white blotches.



WHITE-SPOTTED MARGINELLA

(*Prunum guttatum*) 2.5 cm / 1 in

Glossy cream to brownish shell with white spots and faint banding. Translucent mantle with large white spots.



ORANGE MARGINELLA

(*Prunum carneum*) 2.5 cm / 1 in

Orange teardrop-shaped shell with narrow white bands. Mantle with white blotches and dense orange spots.



COMMON ATLANTIC MARGINELLA

(*Prunum apicinum*) 1.2 cm / 0.5 in

Translucent pear-shaped shell showing the animal's markings underneath. Common in sandy shallow areas.



WHITE-BANDED MARGINELLA

(*Volvarina albolineata*) 1.2 cm / 0.5 in

Pale oblong shell with three broad brown bands (may be diffuse). Orange spots on white mantle and proboscis.



SOCO A MARGINELLA

(*Volvarina socoae*) 1.2 cm / 0.5 in

Elongated orange shell with pale stripes. Mantle and proboscis solid orange or pale with dark orange spots.



WAVY MARGINELLA

(*Gibberula fluctuata*) 8 mm / 0.3 in

Glossy oval shell with a blunt spire. Cream to tan base color with a series of dark brown wavy longitudinal lines.



KNOBBY MARGINELLA

(*Volvarina floresensis*) 1.2 cm / 0.5 in

Pale oblong shell with dark mottling. Knobby texture on white-spotted mantle. Dark banding on pale tentacles.



KULKULCAN CONE

(*Conus kulkulcan*) 3.5 cm / 1.4 in

Cone-shaped shell with a short pointed spire. Deep red, often a lighter band towards the middle. Dark red mantle.



Cone shells should never be handled or removed from the reef, no matter how pretty the shell. They have a venomous harpoon-like weapon that is used to immobilize prey like small fish, but is also dangerous to humans; the venom of some cones can be fatal to unwary collectors.



CARROT CONE

(*Conus daucus*) 7 cm / 2.8 in

Almost flattened spire with a short pointed spire. Fine shallow grooves cover final body whorl. Red mantle.



MOUSE CONE

(*Conus mus*) 4 cm / 1.6 in

Conical spire. Bluish-gray with brown axial streaks. Top of final whorl has low white knobs. Dark red proboscis.



ALPHABET CONE

(*Conus spurius*) 8 cm / 3.2 in

Pale cone with short pointed spire. Pattern of small red to brownish spots or dashes covering the final whorl.



GLORY OF ATLANTIC CONE

(*Conus granulatus*) 6 cm / 2.4 in

Elongated pale orange cone, commonly with central broken band of brown spots on final whorl. Red mantle.



GLOSSY DOVE SNAIL

(*Nitidella nitida*) 2 cm / 0.8 in

Elongated brown shell with large white patches and smaller white spots. Longer aperture lip than *M. ocellata*.



WHITE-SPOTTED DOVE SNAIL

(*Mitrella ocellata*) 2 cm / 0.8 in

Glossy elongated brown shell with a long spire. Round to oblong pale spots. Brown proboscis with white blotches.



OVATE DOVE SNAIL

(*Conella ovulata*) 2 cm / 0.8 in

Orange to brown shell with a white spire tip and aperture. Creamy white markings form into bands. Purplish mantle.



WEST INDIAN DOVE SNAIL

(*Columbella mercatoria*) 2.5 cm / 1 in

Pale orange shell with white highlights. Long thick-walled lip and curved aperture. Pale tan mantle and proboscis.



COLORFUL MOON SNAIL

(*Naticarius canrena*) 7 cm / 2.8 in

Rounded shell with thin brown bands. White mantle with reddish-brown markings: lines in front and spots at the rear.



Most of a snail's body is hidden safely inside the shell. The visible parts are the foot and the mantle skirt, which can be very colorful. Looking closely one can see two or more pairs of tentacles, as well as a protruding proboscis. Small eyes are usually found at the base the tentacles.



EMERALD NERITE

(*Smaragdia viridis*) 1 cm / 0.4 in

Small bright green shell with white spots or bands. Long thin tentacles. Found on Turtle Grass, on which it feeds.



VIRGIN NERITE

(*Vitta virginea*) 1.2 cm / 0.5 in

Rounded shell with bulbous spire. Wavy zigzag lines and spots. Dominant color may be black, green or reddish.



HARLEQUIN MITER

(*Vexillum histrio*) 1.5 cm / 0.6 in

Highly ridged dark red shell with yellow and black bands. Black mantle and proboscis. White-banded tentacles.



BEAUTIFUL MITER

(*Vexillum pulchellum*) 1.5 cm / 0.6 in

Bright orange shell with a sharply pointed spire. Bands of small black markings. Single white band on final whorl.



CUBAN MITER

(*Vexillum cubanum*) 1.5 cm / 0.6 in

Elongated ribbed white shell with thin dark bands above each whorl. Often a broader dark band on the final whorl.



BARBADOS MITER

(*Probatia barbadensis*) 2.5 cm / 1 in

Smooth elongated shell with a long thin spire. Dark brown to reddish. Mantle and proboscis are yellow.



RIBBED MUDSAIL

(*Nassarius paucicostatus*) 1.2 cm / 0.5 in

Rounded white shell with a blunt spire and well spaced ribs. Mantle and proboscis are pale with white blotches.



STOCKY CERITH

(*Cerithium litteratum*) 3 cm / 1.2 in

Pointed shell with numerous small ridges. Usually white to pale yellow or brown, circled with dark brown spots.



FILOSE TURBAN

(*Turbo cailetii*) 5 cm / 2 in

Conical red shell with dark green lines and white blotches.
Bright green mantle with thin dark lines. Orange tentacles.



Marine snails, or gastropods, secrete a spiraling shell of calcium carbonate. The whorls get larger and thicker as the animals grow, acting as a kind of exoskeleton. Most often this growth is clockwise, with the opening of the shell found on the right-hand side of the animal.



LONGSPINE STARSNAIL

(*Lithopoma phoebium*) 4.5 cm / 3 in

Round flattened shell with curved triangular spines arranged spirally from the center. Prefers shallows.



WEST INDIAN STARSNAIL

(*Lithopoma tectum*) 5 cm / 2 in

Robust conical shell with knobs around the lower edge. White mantle with speckles. Often covered in red algae.



GIANT ATLANTIC PYRAM

(*Pyramidella dolabrata*) 5 cm / 2 in

Elongated shell with a sharply pointed spire. Thin brown lines encircle the shell. White mantle. Buries into sand.



NETTED OLIVE

(*Oliva sayana*) 5 cm / 2 in

Smooth creamy-white shell with a pointed spire. Dark brown wavy interconnecting lines surround the shell.



GRANULINA SNAIL

(*Granulina* sp.) 1 cm / 0.4 in

Tiny rounded shell and long tapering foot with white speckles. Mantle in a variety of colors and patterns.



SHARP EULIMA

(*Melanella hypsela*) 1.3 cm / 0.5 in

Long sharply pointed white shell with reddish highlights. Dark eyespots. Parasitic on sea cucumbers (p. 152).



TUSK SNAIL

(*Dentalium* sp.) 4.5 cm / 3 in

All members of this genus of snails form long tusk-like shells with a very pointed tip. Usually buried in the sand.



WORM SNAIL

(*Petalocochnus* sp.) 13 cm / 5 in

These snails form long tubes as shells and extend thin mucus threads to feed. Found in sponges and corals.



CHOCOLATE-LINED TOPSNAIL

(*Calliostoma javanicum*) 4 cm / 1.6 in

Pointed conical shell with thin chocolate-brown lines.
Similar brown lines on beige mantle. Dark brown tentacles.



Marine gastropods move about using the rhythmical contractions of a strong muscular foot. The word gastropod comes from Greek: "stomach-foot." In some snail species, such as the Flapping Dingbat (p. 211), the mantle has flaps that can be used like a pair of wings, allowing them to swim.



MOTTLED TOPSNAIL

(*Calliostoma jujubinum*) 3 cm / 1.2 in

Conical red to purplish shell with a pointed spire. Finely beaded spiral ribs. Dark mantle with small white spots.



MAGPIE WHELK

(*Cittarium pica*) 14 cm / 5.5 in

Robust thick-lipped black and white shell. Found near rocky inshore. A commercially harvested species.



SILKY TEGULA

(*Agathistoma fasciatum*) 2 cm / 0.8in

Rounded shell with a low spire. Tan to black with white blotches. Spiral lines of white dashes. Found in shallows.



GEM TEGULA

(*Tegula gruner*) 2 cm / 0.8 in

Rounded shell with a low spire. Spirals blotched in red and white over golden brown. Found in the shallows.



HOOF SNAIL

(*Cheilea equestris*) 4 cm / 1.6 in

A sedentary limpet-like gastropod found on coral rubble. Calcified plates with radial ridges, often overlapping.



FLORIDA CORNIROSTRA

(*Cornirostra floridana*) 1 cm / 0.4 in

Black markings visible through translucent rounded shell. Long tentacles with black stripes and a long clear foot.



WEST INDIAN MUREX

(*Chicoreus brevifrons*) 15 cm / 6 in

Thickened shell with many short irregular protruding knobs. Thickened shell lip. Often covered in red algae.



APPLE MUREX

(*Phyllonotus pomum*) 13 cm / 5 in

Robust shell with a large body whorl and vertical ribs. Sawtooth aperture lip. Feeds on bivalves (seen above).



MEASLED COWRIE

(*Macrocyprea zebra*) 10 cm / 4 in

Oval shell has white spots with brown centers (banded in juveniles). Mantle color variable, gray to brown or black.



Identifying marine gastropods is often best done by looking at the markings on the shell, as the mantle is sometimes hidden. Shells should be left on the reef; they become useful places for many fishes to hide and lay eggs, as well as becoming future homes for hermit crabs (p. 270).



ATLANTIC YELLOW COWRIE

(*Naria acicularis*) 4 cm / 1.6 in

Yellow shell with pale blotches. Reddish mantle with numerous highly branched projections. Found on rubble.



ATLANTIC GRAY COWRIE

(*Luria cinerea*) 4 cm / 1.6 in

Smooth tan shell with scattered dark spots. Light brown mantle. Black tentacles. Also found in solid gray to black.



AMERICAN CARRIERSNAIL

(*Xenophora conchyliphora*) 7 cm / 2.8 in

Flat-bottomed conical shell, typically with other shells and pieces of coral debris cemented on for protection.



COFFEE BEAN TRIVIA

(*Pusula pediculus*) 3 cm / 1.2 in

Pale grooved shell with dark patches. Brownish mantle covering the shell may have many knobby protrusions.



CHESTNUT LATIRUS

(*Leucozonia nassa*) 5 cm / 2 in

Dark brown shell with knobbed ribs and a single thin white spiral cord. Deep red mantle with white speckles.



TWIN-CORDED LATIRUS

(*Hemipolygona carinifera*) 5 cm / 2 in

Dark golden-yellow shell with nine axial ribs. Chocolate-brown between the ribs. Red mantle with white speckles.



ST THOMAS FROG SNAIL

(*Lampasopsis thomae*) 3 cm / 1.2 in

Thick-bodied creamy white shell with rounded knobs. Spiral cords with white and brown spots on final whorl.



GRANULAR FROG SNAIL

(*Dulcerana granularis*) 5 cm / 2 in

Long pointed brown shell with deep axial ridges. Pale mantle with irregular brown spots. Banded tentacles.




ATLANTIC TRITON'S TRUMPET

(*Charonia variegata*) 37 cm / 15 in

Large pointed spiral shell with patterns of wavy cream and reddish-brown bands. Mottled brown mantle.



 Larger snails, such as the Triton's Trumpet on the left, are slow-motion hunters, smelling out and attacking even slower animals like sea stars. After flipping it over, they secrete a special saliva into the sea star, which paralyzes it. They can then feed at their leisure, often starting out on the softer tissues around the mouth. The Triton's Trumpet has a serrated organ in its mouth called the radula, for sawing off pieces of its prey. It can also eat smaller mollusks whole, not bothering to cut them up first. After the prey has been digested, the spines or bits of shell are spat out.

Many gastropods are equipped with a blade called an operculum, that perfectly covers the opening into their shells. When threatened, the animal can pull itself quickly inside its shell and the operculum closes like a door. It is attached to the strong muscular foot and can help the animal to move along the reef floor. This sharpened appendage can also be used as a weapon, slashing sideways across a predator (such as an octopus) that might try to get at the animal hiding inside the shell.





MUSIC VOLUTE

(*Voluta musica*) 4.5 cm / 3 in

Pale brown thick-walled shell circled with distinctive thin brown lines. White mantle with brown and gold markings.



DWARF HAIRY TRITON

(*Monoplex vespaceus*) 5 cm / 2 in

Orange to yellow shell with a sharply pointed spire. Elongated aperture with a distinctively toothed lip.



SHELLY DWARF TRITON

(*Colubraria testacea*) 5 cm / 2 in

Elongated tan to brown shell with a pointed spire. Rows of brown dashes and white spots. Thickened aperture lip.



HAIRY TRITON

(*Monoplex pilearis*) 14 cm / 5.5 in

Yellowish with brown spiral ribs and a large body whorl. Spotted mantle. Juveniles covered in hairy protrusions.



LIP TRITON

(*Turritriton labiosus*) 13 cm / 5 in

Orange to brown shell with ridges and a long curving aperture lip. Pale mantle with dark reddish blotches.



GOLDMOUTH TRITON

(*Monoplex nicobaricus*) 9 cm / 3.5 in

Thick-walled shell with irregular knobby surface and rusty brown patches and dark lines. Heavily spotted mantle.



SMOOTH SCOTCH BONNET

(*Semicassis granulata*) 7.5 cm / 3 in

Delicate rounded shell with a low conical spire.
Irregular reddish-brown bands. Light brown mantle.



The Scotch Bonnet usually feeds on smaller urchins, but the snail above has taken on a larger Long-spined Urchin (p. 149). Chemicals help soften the urchin's shell and the radula breaks it open. All internal tissues are devoured except the gut contents. The snail then eats the small tube feet.



WEST INDIAN CHANK

(*Turbinella angulata*) 37 cm / 15 in

Robust shell with a long tapering aperture lip. Mantle is mottled black and orange and is commonly buried.



TRUE TULIP

(*Fasciolaria tulipa*) 25 cm / 10 in

Pointed shell with faint spiral lines and long aperture lip. Pink mantle with white speckles. Short pointed tentacles.



CARIBBEAN VASE

(*Vasum muricatum*) 20 cm / 8 in

Thick-walled shell with a small pointed conical spire. Mantle is brown and speckled. Often covered in algae.



ATLANTIC PARTRIDGE TUN

(*Tonna pennata*) 15 cm / 6 in

Shell may be solid brown or with bands. Broad brown to black mantle with irregular white spots and long blotches.



FLAME HELMET

(*Cassis flammea*) 15 cm / 6 in

Creamy white shell with two rows of knobs. Short spire. Wavy brown markings. Smaller than the King Helmet.



RETICULATE COWRIE-HELMET

(*Cypræacassis testiculus*) 9 cm / 3.5 in

Rounded shell with longitudinal ridges. Broad broken lines of brown or black and white surround the shell.



KING HELMET

(*Cassis tuberosa*) 30 cm / 1 ft

Three spiral rows of triangular knobs. Bands on aperture lip. Juveniles may have wavy lines similar to *C. flammea*.



EMPEROR HELMET

(*Cassis madagascariensis*) 35 cm / 14 in

Robust domed shell with short knobs. Cream to tan. Vertical opening in the front. Lip is a solid cream color.



MILK CONCH

(*Macrostrombus costatus*) 15 cm / 6 in

Thick-walled pale shell with a creamy color inside. Body whorl with large rounded spikes. On sand and seagrass.



Rarely, a conch may develop extra eyes.



Conchs have been a food source in the Caribbean for as long as there have been humans in the area. With growing populations, this important link in the food chain is under threat in many areas from overharvesting. Conchs feed not only on algae but also on detritus, organic debris that could otherwise cause algae to smother a healthy reef and stop enough sunlight from reaching the corals. Queen Conchs are the most popular. They reach their maximum size after just five years but they can live for up to forty years, continuing to thicken their shells as they grow older.



A chank shell lays an egg case on octocoral.



A helmet lays its eggs onto the sand.





ROOSTERTAIL CONCH

(*Lobatus gallus*) 13 cm / 5 in

Reddish shell with white blotches. Distinctively flared tips grow both above the eyes and at rear of aperture lip.



QUEEN CONCH

(*Lobatus gigas*) 30 cm / 1 ft

Orange to brown shell is pink inside. The proboscis and eyestalks are mottled. Small eyes with black tentacles.



FLORIDA FIGHTING CONCH

(*Strombus alatus*) 13 cm / 5 in

Orange to brownish shell with pointed spines, always largest on final whorl. Aperture lip slants downwards.



WEST INDIAN FIGHTING CONCH

(*Strombus pugilis*) 10 cm / 4 in

Orange to brownish shell with evenly sized pointed spines on the whorls. Aperture lip slants upwards.



HAWKWING CONCH

(*Lobatus raninus*) 13 cm / 5 in

Thick brown shell with two distinctively large spikes on the top. Yellow inside shell. Front aperture lip curves up.



CARIBBEAN CROWN CONCH

(*Melongena melongena*) 15 cm / 6 in


Orange-brown shell with small pointed spire. Final whorl with row of short spikes. Dark stripe on brown tentacles.



WHITE-SPOTTED OCTOPUS

(*Callistoctopus macropus*) 50 cm / 20 in

Robust brown to reddish body. Numerous irregular white spots and small bumps cover the body and arms.

 Octopuses are highly intelligent, with the largest brain of all the invertebrates. Most of the neurons are located in the arms, which can sense and react independently of the main brain.

Octopuses use pigment-filled organs on their skin to camouflage themselves against the reef. Some will also mimic the color and even the swimming motions of fishes, such as parrotfishes (on the left) or flounders, as they move about during the daytime.



Octopuses are mostly nocturnal hunters, feeding on crabs and shellfish as well as smaller fish. A tough beak can slowly cut into the hardest of shells, even that of a conch. They can also hunt by creeping up on a coral head and suddenly billowing out with the arms, covering it completely. One arm then goes under this “tent” to catch any trapped prey. The beak can deliver a venomous bite.





DWARF OCTOPUS

(*Paroctopus mercatoris*) 15 cm / 6 in

Small red to brown body with few papillae and broad banding on arms. Juveniles live in empty clam shells.



CARIBBEAN REEF OCTOPUS

(*Octopus briareus*) 50 cm / 20 in

Green to bluish body mottled with brown; may change color rapidly. Distinctive dark brown ring around the eye.



ATLANTIC LONGARM OCTOPUS

(*Macrotritopus defilippi*) 35 cm / 14 in

Distinctively long narrow arms. Gray to light brown with widely spaced white spots. Usually found in sandy areas.



CARIBBEAN TWOSPOT OCTOPUS

(*Octopus hummelincki*) 25 cm / 10 in

Two distinctive dark blue ocellated spots near the eyes. These will disappear when the octopus is camouflaged.



BRAZILIAN REEF OCTOPUS

(*Octopus insularis*) 90 cm / 3 ft

Distinctive red reticulated markings under arms. When startled the eye is white with a dark bar through the iris.




COMMON OCTOPUS

(*Octopus americanus*) 90 cm / 3 ft

Uniformly dark under arms (compare: *O. insularis*). Color and patterns variable. Eye is dark when startled (above).



 Squid have eight arms, like their octopus cousins, and also have two longer hunting tentacles equipped with strong suckers at the end, used for holding onto prey such as fish and shrimp. Nocturnal predators, squid have large light-sensitive eyes that help them to hunt at night, the largest eye-to-body ratio in the animal kingdom.

If threatened, squid raise up their arms and tentacles in a defensive display. If surprised or attacked, they release a cloud of black ink as a visual smokescreen. Adding some mucus keeps this ink together and creates a visual mimic, called a pseudomorph, that the predator attacks instead.

Their skin is covered with pigment organs called chromatophores. As each chromatophore is activated, a sac of pigments is expanded, enlarging the color spot. Doing this with many such organs gives them camouflage while hunting, or allows them to communicate with other squid. Fins are used for swimming, but if more speed is needed they have a funnel that can squirt jets of water.





CARIBBEAN REEF SQUID (JUVENILE)
(*Sepioteuthis sepioidea*)

Juveniles tend to shelter in the branches of gorgonians, often with arms and tentacles widely spread out in two.



CARIBBEAN REEF SQUID
(*Sepioteuthis sepioidea*) 30 cm / 1 ft
The most common squid. Thin unbroken fin runs along the entire length of the body. Color is highly changeable.



GIANTEYE SQUID
(*Abralia veranyi*) 5 cm / 2 in

Tentacles are almost as long as the body, which is small. Translucent fins end in a point. Distinctively large eye.



ATLANTIC BRIEF SQUID
(*Lolliguncula brevis*) 13 cm / 5 in
Short arms and tentacles on a compact body, often with tiny black spots. Rounded fins connect at rear of body.




BAYER'S GRASS SQUID
(*Pickfordiateuthis bayeri*) 2 cm / 0.8 in
Rounded fins, not connected at the rear. Short arms. Large chromatophores, commonly in red and orange.



GRASS SQUID
(*Pickfordiateuthis pulchella*) 2.5 cm / 1 in
Rounded fins, not connected at the rear. Often displays greenish-yellow. Found in seagrass and shallow reefs.



 Reef Squid gather in schools in the daytime and use a variety of color displays while mating. Males put on a zebra pattern to challenge other males, while females put on a saddle display to show they are ready to mate. Courting males wear stripes and try to take a female away from the group. If she accepts, he puts on a flickering display and positions himself under the female and together they rock back and forth.

The male places a sperm packet at the base of her arms. Females can collect sperm from many different males before she decides to fertilize herself, by inserting the chosen male's sperm packet into her mantle.

After laying eggs, the female displays a zebra pattern to approaching males to show she is no longer interested.



Caribbean Reef Squid eggs.



Embryo feeding on the yolk.



Diamondback Squid eggs.



INSHORE SQUIDS

(Family: Loliginidae)

Collective name for many genera near reefs. *Doryteuthis* species (above) are largely indistinguishable on dives.



SLENDER INSHORE SQUID

(*Doryteuthis pleii*) 45 cm / 18 in

Elongated body with triangular fins connected well to the rear, aka Arrow Squid. ID tentative (see Inshore Squids).



ORANGEBACK SQUID

(*Sthenoteuthis pteropus*) 60 cm / 2 ft

Elongated, with rounded fins and long hunting tentacles. Photophore patch on dorsal mantle near head. Pelagic.



ATLANTIC BIRD SQUID

(*Ornithoteuthis antillarum*) 45 cm / 1.5 ft

Pale to reddish elongated body. Triangular fins towards a distinctively long pointed rear. Pelagic, rarely on reefs.



DIAMONDBACK SQUID EGG CASE

(*Thysanoteuthis rhombus*) 1.2 m / 4 ft

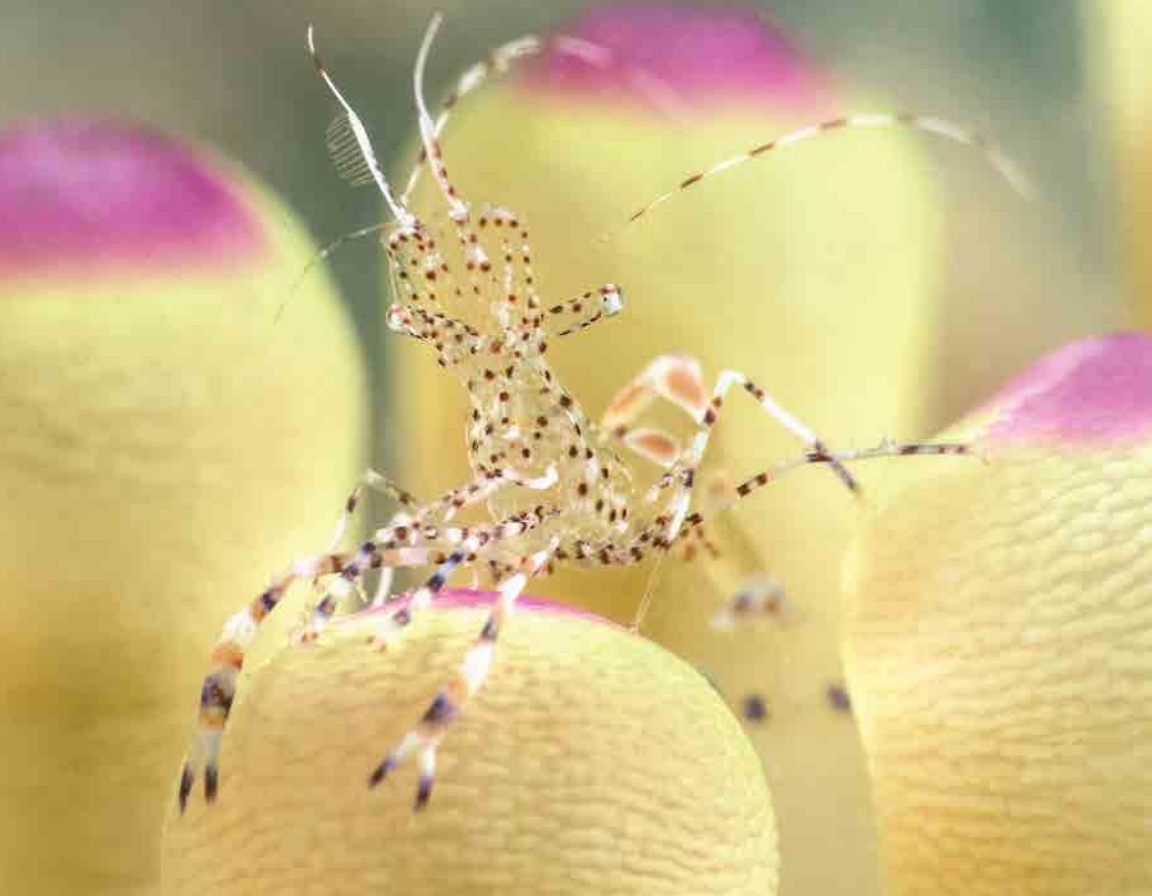
A long tubular mass of tiny purple eggs encased in a transparent jelly. The squid itself is from very deep water.



COMMON CLUBHOOK SQUID

(*Onychoteuthis banksii*) 50 cm / 20 in


Whitish, often with a pink central area. Wide fins, forming a sharp point. Two rows of hooks on hunting tentacles.

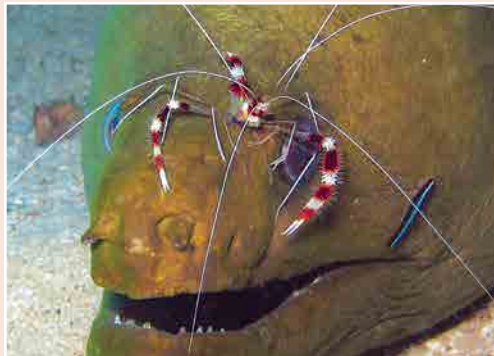
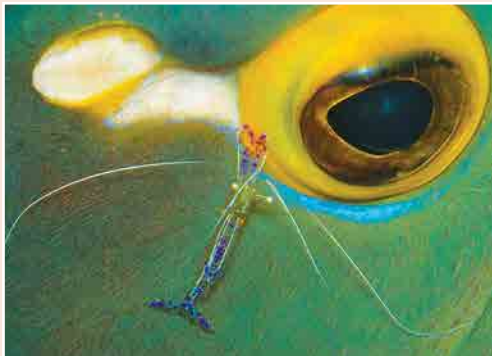


SPOTTED CLEANER SHRIMP

(*Periclimenes yucatanicus*) 2.5 cm / 1 in

Transparent body with large spots down the back and sides. Purple spots on head. Bands on claws and legs.

 Cleaner shrimps get most of their food by offering their services to fish: removing parasites and even bits of torn or decaying flesh from a wounded fish, helping it to heal. They advertise their cleaning services by waving their distinctively long antennae back and forth, signaling a readiness to get to work. Fish then indicate which parts of their bodies need cleaning by orienting themselves towards the cleaners, extending certain fins or opening their mouths or gill covers. The tiny claws of the Pederson Cleaner Shrimp are perfect for delicate jobs such as removing debris from gills and eyes. For tougher jobs, including dentistry, a fish needs the larger Banded Coral Shrimp and its strong muscular claws. The same cleaning station may have both species, offering a full service.





PEDERSON CLEANER SHRIMP

(*Ancylomenes pedersoni*) 2.5 cm / 1 in

Dark purple spots on claw arms, back and tail. Long thin antennae. Found on Corkscrew Anemones (p. 121).



BANDED CORAL SHRIMP

(*Stenopus hispidus*) 5 cm / 2 in

Rear body and claws are white with wide red bands. Long white antennae. Pale blue eggs are often visible.



SCARLET-STRIPED CLEANER SHRIMP

(*Lysmata grabhami*) 5 cm / 2 in

Yellow legs and body with two broad red stripes down the back. Long white antennae. Often found in pairs.



GOLDEN CORAL SHRIMP

(*Stenopus scutellatus*) 4 cm / 1.6 in

Golden to pale yellow body. Claws banded with white, red and orange. Red bands on tail. Long pale antennae.



ANTIGUAN CAVE SHRIMP

(*Parhippolyte antiguensis*) 7.5 cm / 3 in

Slender orange body banded in red. Long thin legs. Often found on Giant Barrel Sponges (p. 64) at night.



WHITECLAW CORAL SHRIMP

(*Odontozona* sp.) 4 cm / 1.6 in

Pale yellow body with reddish bands. Long slender claw arms and white claws. Nocturnal, found under ledges.



STRIPED BUMBLEBEE SHRIMP

(*Gnathophyllum americanum*) 1.5 cm / 0.6 in

Yellow body with brown bands. Gold on legs and tail.

Found on or near sea cucumbers, urchins and sea stars.



Some shrimps have evolved to live on specific hosts such as urchins, crinoids and gorgonians. For some species, such as the Urchin Bumblebee Shrimp below, the color pattern is fixed and highly specific. Others, such as the Sea Plume Shrimp, can change their color depending on their hosts.



CIRCLED BUMBLEBEE SHRIMP

(*Gnathophyllum circellum*) 1.5 cm / 0.6 in

Brownish body with bright gold spots circled in black.

Long transparent legs and antennae. Transparent tail.



URCHIN BUMBLEBEE SHRIMP

(*Gnathophyloides mineri*) 2 cm / 0.8 in

Dark sides with broad white stripes. Thin white stripes on top of back. Found on West Indian Sea Eggs (p. 151).



HYDROID SHRIMP

(*Rapipontonia* sp.) 1.5 cm / 0.6 in

Transparent body with long red stripes. Oblique short red stripes on abdomen. Found on hydroids (p. 136).



WIRE CORAL SHRIMP

(*Pseudopontonides principis*) 1.5 cm / 0.6 in

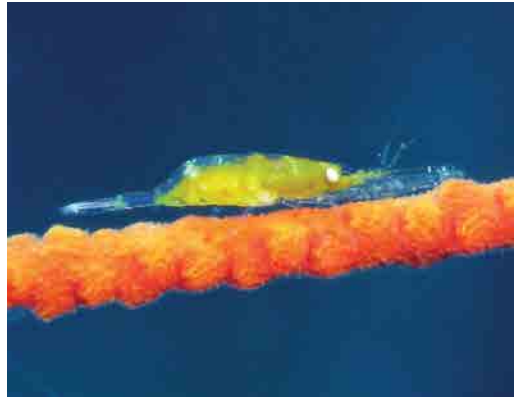
Tapering body. Long thin claws and a flattened tail. May have white bands. Usually found on Wire Coral (p. 91).



PINKEYE GORGONIAN SHRIMP

(*Neopontonides* sp.) 1.5 cm / 0.6 in

Flattened translucent body with reddish speckles. Pink eyes on short stalks. Found on gorgonians. ID tentative.



SEA PLUME SHRIMP

(*Neopontonides chacei*) 6 mm / 0.2 in

Transparent smooth rounded body, generally taking on color of the host gorgonian. White eyes on short stalks.



BLACK URCHIN SHRIMP

(*Tuleariocaris neglecta*) 1.5 cm / 0.6 in

Long dark red to black body. Often a pale stripe along the side. Found on Long Spine Sea Urchins (p. 149).



CARIBBEAN PEN SHRIMP

(*Pontonia mexicana*) 2.5 cm / 1 in

Reddish with white reticulated pattern on head, body and claw arms. Found inside living pen shells (p. 215).



RED AND WHITE CRINOID SHRIMP

(*Periclimenes rincewindi*) 2 cm / 0.8 in

Pink to tan body with serrated head and purplish-red spots.
Transparent sides. Found on Swimming Crinoids (p. 147).



While some shrimps use camouflage to stay safe from predators, others go a step further and use hosts that are also poisonous. The Whitefoot Shrimp (following page) lives inside the toxic Touch-Me-Not Sponge (p. 67), with its tiny claws mimicking the resident sponge worms (p. 159).



GOLDEN CRINOID SHRIMP

(*Periclimenes crinoidalis*) 2 cm / 0.8 in

Pale body with gold eyes and stripe on the back. Sides are transparent. Found only on Golden Crinoids (p. 147).



BROWN CRINOID SHRIMP

(*Periclimenes meyeri*) 2 cm / 0.8 in

Dark brown body with white eyes, eyestalks and tail.
Found only on Black and White Crinoids (p. 147).



YELLOWBAND SHRIMP

(*Periclimenes* sp.) 2.5 cm / 1 in

Translucent body with tiny white speckles. Yellow bands on red legs. Found on the Upsidedown Jelly (p. 110).



BLACK CORAL SHRIMP

(*Periclimenes antipathophilus*) 1.5 cm / 0.6 in

Transparent body with a thin red stripe. Widely spaced eyes on long eyestalks. Found on black corals (p. 90).



IRIDESCENT SHRIMPS

(*Periclimenes* spp.) 1.5 cm / 0.6 in

Numerous similar species with transparent bodies. Eyes on longer stalks. Found mostly on gorgonian species.



WHITEFOOT SHRIMP

(*Periclimenes harringtoni*) 1.2 cm / 0.5 in

Translucent reddish body with distinctively white-tipped claws. Found only inside Touch-Me-Not Sponges (p. 67).



BASKET STAR SHRIMP

(*Periclimenes perryae*) 1.2 cm / 0.5 in

Gold to reddish body with white highlights. Banded legs. Wide band on tail. Found on Giant Basket Stars (p. 146).



SUN ANEMONE SHRIMP

(*Periclimenes rathbunae*) 2.5 cm / 1 in

Transparent body with brown, white and reddish spots. Patches on the back. Found on Sun Anemones (p. 117).



PEPPERMINT SHRIMPS

(*Lysmata* spp.) 4.5 cm / 1.8 in

Pale translucent shrimps with thin red stripes and bars.
 Identifications tentative, based on stripe/bar arrangement.



There are around half a dozen species of Peppermint Shrimps in the region, each with a unique pattern of red stripes and bars. The Sponge Peppermint Shrimp (below) always lives inside tube and vase sponges. They are mostly scavengers but may act as cleaner species as well.



ANKER'S PEPPERMINT SHRIMP

(*Lysmata ankeri*) 4.5 cm / 1.8 in

Pale reddish-orange with dark red stripes. Distinctive curved red line where abdomen slopes down to tail.



SPONGE PEPPERMINT SHRIMP

(*Lysmata pedersenii*) 4.5 cm / 1.8 in

Translucent body with thin red stripes. Two distinctively curved bands near abdomen. Commonly found in pairs.



GORGONIAN TOOTHPICK SHRIMP

(*Tozeuma cornutum*) 3 cm / 1.2 in

Elongated translucent body with red and white speckles and small hump. Found mostly on Sea Plumes (p. 101).



ARROW SHRIMP

(*Tozeuma carolinense*) 4 cm / 1.6 in

Long slender body with a distinctive hump towards tail. Long tapering snout. Color varies, matching the host.



BERMUDA SPONGE SHRIMP

(*Holthuisaeus bermudensis*) 1 cm / 0.4 in

Smooth and rounded translucent body. One large major claw. Globular black eyes. Found hiding in tube sponges.



SUBTUNICATE SHRIMP

(*Periclimenaeus ascidiarum*) 1 cm / 0.4 in

Translucent tan to pink body with white speckles. Large claw arms. Lives under encrusting tunicates (p. 135).



SLENDER SARGASSUM SHRIMP

(*Latreutes fucorum* VARIATION)

Not always on sargassum, they can be found in algae and seagrass beds in a variety of colors and patterns.



SLENDER SARGASSUM SHRIMP


(*Latreutes fucorum*) 2 cm / 0.8 in

Highly variable in color and markings, solid brown or with white bands or blue spots, Sharply upturned rostrum.



TWO CLAW SHRIMP

(*Brachycarpus biunguiculatus*) 7 cm / 2.8 in
Translucent reddish-brown body. Banded claws on long claw arms. Nocturnal, often found inside tube sponges.

 Many shrimps are nocturnal, spending the daylight hours resting in caves and deep crevices within the reef. They come out to forage at night, so they usually have very large eyes to make the most of limited light. Multiple pairs of antennae give them a highly developed sense of smell.



CRIMSON CORAL SHRIMP

(*Microprosthema semilaeve*) 2.5 cm / 1 in
Bright red body curving upwards near the tail. Large red claws with pale tips. Found in areas of sand and rubble.



TAWNY CONCH SHRIMP

(*Microprosthema manningi*) 2 cm / 0.8 in
Translucent body with small spines and large claws. Found in shallow coral debris and dead conch shells.



LONGTAIL GRASS SHRIMP

(*Urocaris longicaudata*) 2 cm / 0.8 in

Transparent body with a rounded hump towards a long transparent tail. A second set of claws behind the first.



CROSSBANDED GRASS SHRIMP

(*Palaemon northropi*) 2.5 cm / 1 in

Transparent body with thin dark brown lines and bands. Found in shallows on mangrove roots and under docks.



AMERICAN GRASS SHRIMP

(*Cuapetes americanus*) 2.5 cm / 1 in

Pale translucent body. Straight rostrum, slightly curved at the tip. Stalked eyes. Distinctively elongated claw arms.



BROWN GRASS SHRIMP

(*Leander tenuicornis*) 5 cm / 2 in

Prominent hump on the back. Often two ocellated spots on lower body. Found in the shallows and on seagrass.



MANNING'S GRASS SHRIMP

(*Thor manningi*) 1 cm / 0.4 in

Translucent body with highly variable green, brown and white highlights. Banded legs. Often near anemones.



SQUAT ANEMONE SHRIMP

(*Thor dicaprio*) 2 cm / 0.8 in

Reddish body with large head and small tail. Pale spots with blue rims. Short antennae. Found on anemones.




RED NIGHT SHRIMPS

(*Cinetorhynchus manningi* complex) 5 cm / 2 in
Pink to red with darker red saddle over pronounced hump on abdomen. Similar species have white abdominal bands.



There are several species in the Red Night Shrimp complex, with a range of colors and patterns.

 The wild shrimp industry is one of the most wasteful and damaging to marine environments in the Caribbean because of the amount of non-targeted species that are brought up in the nets. As much as ten kilograms of this bycatch is killed for every kilogram of shrimp that makes it onto the market. Trawling for shrimp on the seabed also damages the marine environment and, ironically, the habitat for future shrimp populations. Endangered species such as sea turtles (p. 446) can also easily get caught up in shrimp nets. Many shrimp fisheries throughout the Caribbean now mandate the use of turtle exclusion devices (TEDs), that allow them to escape. Shrimp farming has been growing steadily in the Caribbean in recent decades. Shallow lagoons are used to raise non-native shrimp species, and large areas of mangrove forests have been cut down. The sediments, nutrients and pathogens released into the surrounding water can often impact local coral reefs and fisheries.



ROUGHBACK SHRIMP (VARIATION)
(*Trachycaris rugosa*)

Cryptic. Highly variable in color from brown to red or green or mottled, depending on the surroundings.



ROUGHBACK SHRIMP

(*Trachycaris rugosa*) 3 cm / 1.22 in

Bulbous head with upturned rostrum and often a white line below eye. Abdominal sections have pointed edges.



NICHOLSON'S SHRIMP

(*Hippolyte nicholsoni*) 2.5 cm / 1 in

Transparent body with two white bands across the back to the sides. Small white eyes. Found on gorgonians.



ROCK SHRIMPS

(*Sicyonia* spp.) 2 cm / 0.8 in

Small prawn-like shrimps often found in shallow areas of sand and rubble. Many species, colors and patterns vary.



BROWN SHRIMP

(*Penaeus aztecus*) 23 cm / 9 in

Translucent body with bands of tiny brown speckles across the back. A commercially harvested species.



VELVET SHRIMP

(*Metapenaeopsis goodiei*) 7 cm / 2.8 in


Translucent body with pale red markings and long thin antennae. Buries quickly into sand when disturbed.



BANDED SNAPPING SHRIMP

(*Alpheus armillatus*) 4 cm / 1.6 in

Translucent body with eight reddish-brown bands.
Large smooth major claw. Often found living in pairs.

 Snapping shrimps are often found hiding under Corkscrew Anemones (p. 121) and get their name from the loud sound of their largest claw snapping shut. They use this to warn off intruders, and also to stun small prey fishes that pass by. They produce much of the noise on a coral reef.



LARGECLAW SNAPPING SHRIMPS

(*Synalpheus* spp.) 2 cm / 0.8 in

Colors are highly variable. All have one smooth snapping claw much larger than the other. Often found in sponges.



GLASSY SNAPPING SHRIMP

(*Automate* sp.) 2 cm / 0.8 in

Transparent body with internal organs and often dark red eggs visible. Claws unequal in size. Lives under rubble.

SNAPPING SHRIMPS : INVERTEBRATES



VERRILL'S SNAPPING SHRIMP

(*Alpheus verrilli*) 4 cm / 1.6 in

Brown body with wide dark bands. Variable patterns, claws may have green speckling and pale orange tips.



YELLOW SNAPPING SHRIMP

(*Alpheus amarillo*) 1.5 cm / 0.6 in

Transparent body with visible internal organs. One oversized major claw with yellow or purple highlights.



SAND SNAPPING SHRIMP

(*Alpheus floridanus*) 5 cm / 2 in

Grayish body with irregular bands. Lives in a symbiotic relationship with the Orangespotted Goby (p. 294).



REDBAND SNAPPING SHRIMPS

(*Alpheus packardii* complex) 3 cm / 1.2 in

Translucent body with reddish bands on the abdomen. Many similar species exist, with wide geographic ranges.



SPOTLESS SNAPPING SHRIMP

(*Alpheus immaculatus*) 4 cm / 1.6 in

Red body with white spots on abdomen and dark spots above. White patches on claws with no green-gold spots.



RED SNAPPING SHRIMP

(*Alpheus armatus*) 5 cm / 2 in

Red body with white spots on abdomen and dark spots above. Green-gold spots on claws and down the back.




SCALY-TAILED MANTIS

(*Lysiosquilla scabricauda*) 30 cm / 1 ft

The largest of the mantis shrimps. Golden antennal plates with dark speckles. Found in rounded burrows in the sand.



 Mantis shrimps have the most complex eyes on the planet. It is a compound eye, made up of thousands of photoreceptors of different kinds. Each eye moves around independently on a short stalk, giving the mantis shrimp a 360-degree view. Humans have three kinds of photoreceptors in their eyes for seeing different wavelengths. Mantis shrimps have over a dozen. They are able to see both polarized and ultraviolet light as well. Different parts of the eye can look at the same thing, providing depth perception even if only one eye is used, helping them to track moving prey.

Mantis shrimps get their name from a set of sharp raptorial claws similar to those of a praying mantis. They use these to either spear or slice at fish as they swim past their hidden burrows. The strike is incredibly fast; measured in milliseconds, it is literally faster than the blink of a human eye. Other species have specialized claws with hardened clubs for smashing through shells. Mantis shrimps can be termed either “spearkers” or “smashers.”





HAVANA MANTIS

(*Odontodactylus havanensis*) 7 cm / 2.8 in
Pale body with green and red highlights. Club-shaped claws. Green and red antennal scales with a black spot.



DARK MANTIS

(*Neogonodactylus curacaoensis*) 5 cm / 2 in
Brown to greenish body with pale spots. Greenish-blue edges on abdominal plates. Colorful club-shaped claws.



REEF MANTIS

(*Lysiosquilla glabriuscula*) 23 cm / 9 in
Brick red to mottled dark brown with distinctively dark, almost black, eyes. Darker red banding on claw arms.



SWOLLEN CLAW MANTIS

(*Neogonodactylus oerstedii*) 5 cm / 2 in
Mottled body in white, brown and green. Sometimes solid dark green. The tail ends in four pointed spikes.



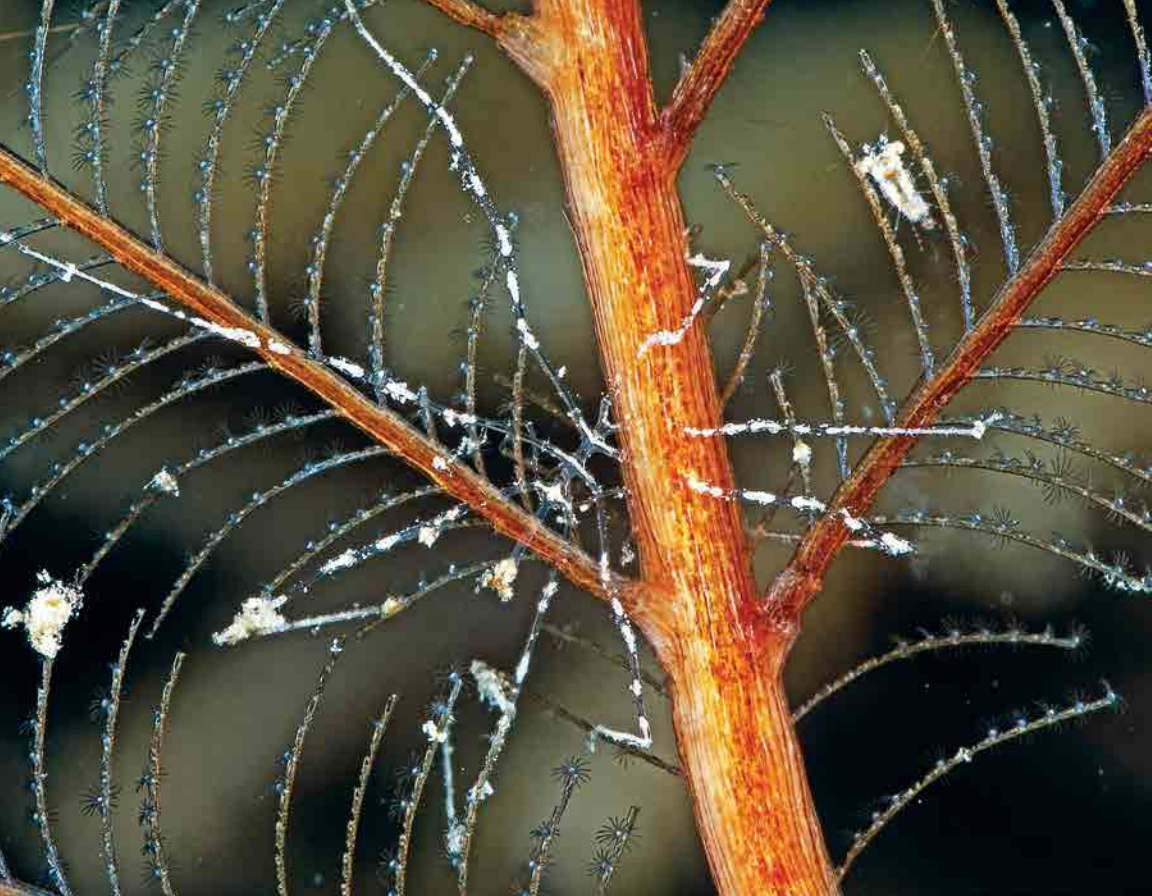
NEPTUNE SQUILLA

(*Alima neptuni*) 5 cm / 2 in
Pale translucent body with white-edged body segments and scattered black spots. Long white lines on head.



CILIATED FALSE SQUILLA

(*Pseudosquilla ciliata*) 9 cm / 3.5 in
Brown to light green body with white spots or stripes. Can change colors and pattern quickly as it moves.



NYPHONID SEA SPIDERS

(Superfamily: Nymphonoidea) 2.5 cm / 1 in

A group of pycnogonids with thin, barely visible bodies and legs. Commonly found feeding on fire corals and hydroids.



Sea spiders are not arachnids, but marine chelicerates that may have from six to ten legs. Most act as scavengers. Nymphonids (above) use their proboscis to suck out the nutrients from hydroids. Their bodies are so thin that most of their guts are actually contained in the legs.



PYCNOGONID SEA SPIDERS

(Class: Pycnogonida) 1.5 cm / 0.6 in

Dozens of different species, indistinguishable on dives. Males often found carrying large egg sacs, as above.



KRILL

(Order: Euphausiacea) 1.5 cm / 0.6 in

Small shrimp-like crustaceans with exposed gills. Stalked compound eyes and rows of photophores along sides.



SPHAEROMATID ISOPODS

(Family: Sphaeromatidae)

Small eyes set well apart. Scavengers, often found under rubble or dead sponges. May curl into a ball for protection.



AEGID ISOPODS

(Family: Aegidae)

Large compound eyes, almost touching. Only part-time parasites, feeding on a fish's blood then dropping off.



SOLDIERFISH ISOPOD

(*Anilocra myrpristis*) 2.5 cm / 1 in

Rounded body with light brown overlapping plates. Attaches to the head of Blackbar Soldierfish (p. 325).



MONOGRAM ISOPOD

(*Rocinela signata*) 3 cm / 1.2 in

Light brown segments often with dark edges. Distinctive rounded W marking on tail. Usually attaches near gills.



AMPHIPODS

(Order: Amphipoda) 1 cm / 0.4 in

Laterally compressed body with unevenly sized legs, last 3 pairs facing backwards. Distinct thorax and abdomen.



COPEPODS

(Class: Copepoda) 0.5 cm / 0.2 in


Teardrop-shaped body, often seen with two lobes of egg sacs to the rear. Parasitic, found on a variety of fishes.



SKELETON SHRIMPS

(*Caprella* spp.) 1.5 cm / 0.5 in

Thin elongated shrimp-like crustaceans with two large bulbous claws. Often found on Thread Hydroids (p. 137).

 Barnacles (following page) are filter feeders with fan-like cirri that are constantly opening and closing, trapping microscopic food particles from the water. Despite their shells they are classified as crustaceans, more closely related to shrimps and lobsters than to mollusks.



OPOSSUM SHRIMPS (MYSIDS)

(*Mysidium* spp.) 2 mm / 0.1 in

Tiny shrimp-like crustaceans. Found in large groups swimming close together in front of recesses in the reef.



ANEMONE MYSID

(*Heteromysis actiniae*) 8 mm / 0.3 in

Distinctive red stripes from antennae and through eyes, joining on tail. Found on Corkscrew Anemones (p. 121).



GROOVED GOOSENECK BARNACLE

(*Lepas anserifera*) 4 cm / 1.6 in

Bluish-white shell edged in orange. Short orange stalk. Found in clusters attached to floating debris and boats.



BLACK CORAL BARNACLE

(*Oxynaspis gracilis*) 1.5 cm / 0.6 in

Distinctive hump on the back of the shell. Attach to Black Corals (p. 90). Often encrusted with a layer of sponge.



SEA TURTLE BARNACLES

(*Chelonibia* spp.) 4 cm / 1.6 in

These epibionts of sea turtles each prefer different hosts. On the Loggerhead Turtle above is *C. testudinaria*.



CORAL BARNACLES

(*Ceratoconcha* spp.) 0.5 cm / 0.2 in

Oblong openings into live coral heads with delicate cirri retracting as they feed. Found on a variety of hard corals.



ACORN BARNACLES

(*Balanus* spp.) 5 cm / 2 in

A widespread group of sessile barnacles in a variety of reef habitats. Pictured above: attached to conch shell.



RIBBED BARNACLE

(*Tetraclita stalactifera*) 3 cm / 1.2 in

Thick-walled shells with pitted grooves. Opening covered by stony plates when not feeding. Shallow to intertidal.



CARIBBEAN SQUAT LOBSTER

(*Anomoeomunida caribensis*) 1.2 cm / 0.5 in

Pale brown carapace, sometimes with a darker longitudinal stripe. Dark-banded claw arms. Found in sand and rubble.



Squat lobsters are small furtive little crustaceans that can be found in all reef habitats but are easy to miss. Their colors are variable and the longitudinal stripe is not always present. Females have shorter and thinner chelipeds (claws), so the two species below can appear similar on dives.



ANGULAR SQUAT LOBSTER

(*Munida angulata*) 1.2 cm / 0.5 in

Pink to dark red and may have a pale stripe. Claw arms sometimes banded with yellow. Distinctively long claws.



COMMON SQUAT LOBSTER

(*Munida pusilla*) 1.2 cm / 0.5 in

Pink to dark red, often with a broad white stripe. White-banded legs and claw arms. Distinctively short claws.



RED-ORANGE GHOST SHRIMP

(*Corallianassa longiventris*) 10 cm / 4 in

Orange body with red markings at the joints. Large claws of different sizes. Shy, found hiding in holes in the sand.



LOBSTER SHRIMPS

(Family: Axiidae) 15 cm / 6 in

Numerous species that show traits of both shrimps and lobsters. Found in burrows or hiding under coral rubble.



BANDED PORCELAIN CRAB

(*Petrolisthes galathinus* complex) 4 cm / 1.6 in

Red to bluish carapace with distinctive transverse ridges, sometimes with red spots. No white cross between eyes.



CARIBBEAN PORCELAIN CRAB

(*Petrolisthes caribensis*) 3 cm / 1.2 in

Distinctive white cross on frontal region, between eyes. Outer edge of claws bristled. Brownish bands on legs.



GREEN PORCELAIN CRAB

(*Petrolisthes armatus*) 4 cm / 1.6 in

Greenish-brown with thin dark transverse bands. Bristled legs and claws. Often found in lagoons and oyster beds.



SPOTTED PORCELAIN CRAB

(*Porcellana sayana*) 2.5 cm / 1 in

Pale pink to reddish carapace and claws, all covered in bright white and purple spots, each circled in red.



SHORTFINGER HERMIT

(*Pagurus brevidactylus*) 2 cm / 0.8 in

Elongated pale eyestalks tapering to small reddish eyes.
Banded antennae. Bands of short brown stripes on legs.



Hermit crabs are not considered true crabs, which have a uniformly hard exoskeleton. Instead, they make use of abandoned shells to protect a vulnerable abdomen.

The soft abdomen is curled, with sharp appendages called uropods, used for hooking into the spiral of a shell. The last two pairs of legs are only used for holding the shell in place and are covered in microscopic scales for a better grip.

When a hermit crab outgrows its shell and can no longer fit safely inside, it looks for a larger one. They can sometimes be found fighting over a prized shell.

Male hermit crabs choose thicker heavier shells for protection, while females look for lighter shells that have a greater internal volume. This is because females need to carry their eggs about with them and allow the eggs more room to develop.

Hermit crabs need to molt in order to grow and this is a good time to find a larger home. They often molt inside sponges. Look down into barrel sponges to find collections of discarded shells. The old exoskeletons are often seen as well, although a hermit crab may feed on it while its new exoskeleton is hardening.





RIDGECLAW HERMIT

(*Phimochirus randalli*) 7.5 cm / 3 in

Bright orange body, legs and claws. The right claw is much larger. Legs and claw arms have thin white bands.



RED-STRIPED HERMIT

(*Phimochirus holthuisi*) 2.5 cm / 1 in

Legs and claws are orange to cream with thin dark red stripes. The right claw is much larger. Bluish eyes.



BLUE-FACED HERMIT

(*Pseudopaguristes invisissacculus*) 6 mm / 0.2 in

Pale brown body and dark, banded legs and claw arms. Distinctive blue on eyestalks, antennae and mouth-parts.



POLKA-DOTTED HERMIT

(*Phimochirus operculatus*) 2.5 cm / 1 in

Maroon body with a large right claw with white spots. Bright orange legs. Blue eyes on banded eyestalks.



RETICULATED HERMIT

(*Iridopagurus reticulatus*) 6 mm / 0.2 in

Translucent brown body. Bristled claws have reddish lines in a reticulated pattern. Found in sandy areas.



RINGEYE HERMIT

(*Iridopagurus* sp.) 5 mm / 0.2 in


Thin dark band circles the lower part of the eye. Light blue legs and heavily bristled brown-banded claw arms.



RED-BANDED HERMIT

(*Paguristes erythrops*) 10 cm / 4 in

The claws are of equal size with red bands and scattered small white spots. Gold antennae and eyestalks. Blue eyes.

 Hermit crabs are either called left-handed (Family: Diogenidae) or right-handed (Family: Paguridae), depending on which claw is usually (though not always) the largest. All of the species here are considered left-handed, while the species on the previous page are right-handed.



STAREYE HERMIT

(*Dardanus venosus*) 13 cm / 5 in

Red to purple with short brown bristles. Banded legs.
Blue eyes with a distinctive star-shaped pattern.



BAREYE HERMIT

(*Dardanus fucosus*) 13 cm / 5 in

Purple body and claws with red highlights. Blue eyes
with distinctive horizontal black bars and tufts of bristles.

HERMIT CRABS : INVERTEBRATES



GIANT HERMIT

(*Petrochirus diogenes*) 20 cm / 8 in

The largest of the hermit crabs. Rough scaly texture on oversized claws. Long banded antennae. Pale eyestalks.



RED REEF HERMIT

(*Paguristes cadenati*) 2.5 cm / 1 in

The carapace, legs and claws are a uniform bright red. Indentations on claws. Green eyes on yellow eyestalks.



BLUE-EYE HERMIT

(*Paguristes sericeus*) 6.5 cm / 2.5 in

Flattened claws of equal size. Small blue eyes on red eyestalks (compare to gold eyestalks on *P. erythrops*).



ORANGECLAW HERMIT

(*Calcinus tibicen*) 2.5 cm / 1 in

The left claw is larger, with pale yellow tips. Orange antennae and eyestalks. Claws are sometimes pale blue.



WHITE-SPECKLED HERMIT

(*Paguristes puncticeps*) 13 cm / 5 in

Claws of equal size. Carapace, legs and eyestalks are covered in tiny white spots. Short light brown bristles.



TRICOLOR HERMIT

(*Clibanarius tricolor*) 1.5 cm / 0.6 in

Pale blue legs, banded with red and yellow at the joints. Large black claws with white spots. Blue eyestalks.



NECK CRABS

(Family: Inachidae)

Long legs and claw arms. Pointed rostrum above small eyes. Usually heavily encrusted in a variety of organisms.



Neck crabs are usually found well camouflaged on gorgonians such as sea rods (p. 97). Many prefer areas of moderate current, where they can grab plankton and small prey as it drifts by. They may cut off small branches from their hosts, attaching them using tiny hooked spines called setae. They will also attach stinging animals such as hydroids (p. 136) to help keep them safe from predators.

Like many of the decorator crabs, proper identification is usually impossible while diving unless some distinguishing characteristic is visible under all the camouflage.

The organisms that hide the neck crab are alive and growing and they can eventually hinder the crab's movement and ability to feed. Like all crab species, neck crabs need to molt in order to grow. This exposes their setae again and they waste no time in choosing a new costume of decoration from the reef.



Choosing a new outfit.



Ready for a new molt!



SHORTFINGER NECK CRAB

(*Coryrhynchus sidneyi*) 5 cm / 2 in

Short rounded rostrum. Last section (dactyl) of rear legs short, half previous section. Reef areas and gorgonians.



HALIMEDA NECK CRAB

(*Coryrhynchus algicola*) 7.5 cm / 3 in

Short broadly rounded rostrum. Tubercles between eyes. Decorates with algae, commonly *Halimeda*. Reef areas.



LONGFINGER NECK CRAB

(*Coryrhynchus riisei*) 5 cm / 2 in

Hollow hood-shaped rostrum. Hooked dactyls. Last legs 1.5x longer than carapace. Rubble and seagrass areas.



UNICORN NECK CRAB

(*Ericerodes gracilipes*) 7.5 cm / 3 in

Spiny rostrum and a distinctive constriction in the area behind eyes. Translucent with pink and purple highlights.



ORANGUTAN NECK CRAB

(*Podochela macrodera*) 5 cm / 2 in

Short, almost triangular rostrum. Commonly covered in filamentous red algae. Found in reef and rubble areas.



CURVED-NOSE NECK CRAB

(*Anisonotus curvirostris*) 6 cm / 2.4 in

Distinctive upward curve on sharp rostrum. Pale pink body with small orange spots. Often in tube sponges.



Sponge crabs have a unique method of camouflage. The front claws are modified as shears for slicing into sponge tissue, while the back legs hold the sponge firmly in place. Some can cut down entire sponges and fashion a hole that allows them to wear the sponge like a hat. Other crabs will only cut off sections of living sponge, usually from near the rim where most of the growing cells are located. This sponge tissue continues to grow along with the crab, often covering it completely. This can make it difficult to identify the different species while diving. They are most active at night.



REDEYE SPONGE CRAB

(*Dromia erythropus*) 10 cm / 4 in

Dome-shaped bristled carapace with a distinctive dark blotch in the middle. Robust claws are tipped in red.



HAIRY SPONGE CRAB

(*Moreiradromia antillensis*) 6 cm / 2.4 in

Small dense bristles cover entire carapace and walking legs (last pair are longest for holding sponge in place).



BIFID DECORATOR CRAB

(*Macrocoeloma diplacanthum*) 5 cm / 2 in

Two non-parallel horns on rostrum. Postero-lateral spine has two lobes (compare to pointed on *M. trispinosum*).



SPONGY DECORATOR CRAB

(*Macrocoeloma trispinosum*) 5 cm / 2 in

Two adjacent horns on rostrum. Postero-lateral spine is sharply pointed. Usually found encrusted with sponges.



NODIPES DECORATOR CRAB

(*Macrocoeloma nodipes*) 2 cm / 0.8 in

Postero-lateral spine broad, continuous with body. Short horns on rostrum (compare to long on *M. trispinosum*).



FURCATE SPIDER CRAB

(*Stenocionops furcatus*) 14 cm / 5.5 in

Reddish tan with pointed lateral spines (often covered). Purplish claws. Often has Hitchhiking Anemone (p. 119).



SHORTHORN DECORATOR CRAB

(*Chorinus heros*) 5 cm / 2 in

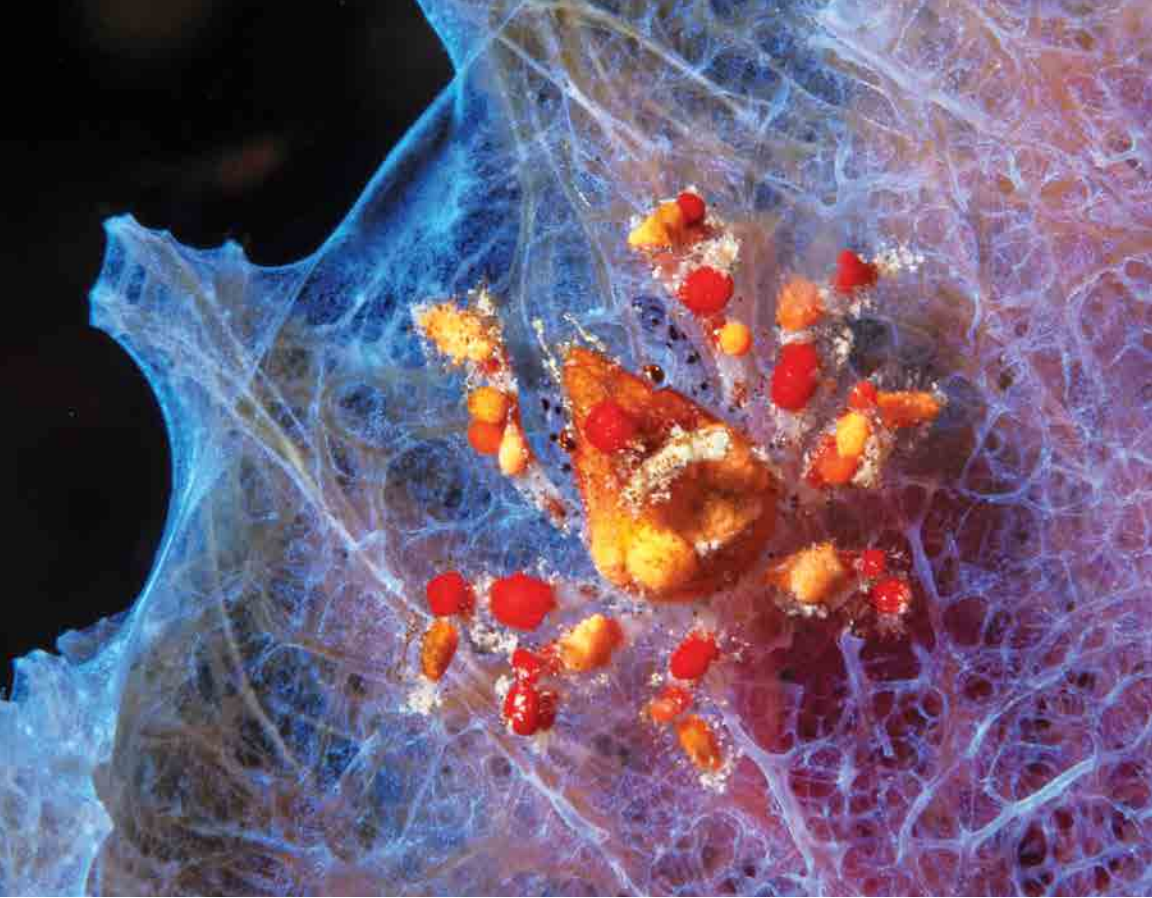
Two long horns on rostrum, connected at base. Oval carapace. Claw arms and the first pair of legs are long.



ROUGHNOSE DECORATOR CRAB

(*Leptopisa setirostris*) 2.5 cm / 1 in

Two distinctively long horns on rostrum, almost touching. Two slightly curved white spines at rear of carapace.



CRYPTIC TEARDROP CRAB

(*Pelia mutica*) 2 cm / 0.8 in

Triangular red carapace, covered in red sponge and often small zoanths. Purplish claw arms with darker spots.



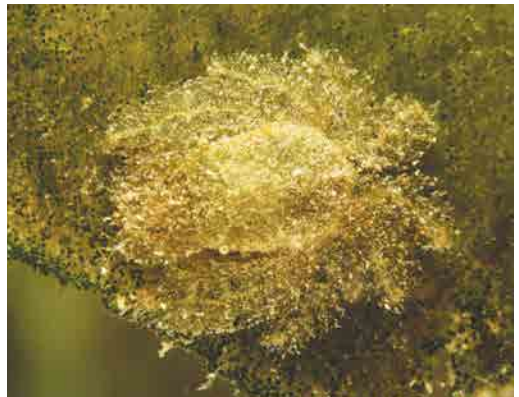
Cryptic Teardrop Crabs are some of the more common decorator crabs on a coral reef and favor small pieces of encrusting red sponge for camouflage. They are most active at night and can be found in the daytime hiding in small groups at the bottom of vase sponges (p. 59).



SCARLET MIME CRAB

(*Thoe puella*) 1.5 cm / 0.6 in

Triangular carapace, similar to *P. mutica* (above), but covered in lumpy projections. Found among coral rubble.



GREEN ALGAE CRAB

(*Thersandrus compressus*) 2.5 cm / 1 in

Flattened green bristled carapace and legs. Often holds strips of algae over head. Found on blade algae (p. 21).



BLADETOOTH ELBOW CRAB

(*Platylambrus granulatus*) 7.5 cm / 3 in

Elongated claw arms, much wider than carapace, with distinctive sharp forward-facing teeth on the outer edge.



LONGSNOOT SPIDER CRAB

(*Epialtus longirostris*) 5 cm / 2 in

Pointed rostrum. Sides of carapace deeply bilobed. Long claw arms. Distinctive triangular white mask on the back.



DARK SHORE CRAB

(*Pachygrapsus gracilis*) 1.5 cm / 0.6 in

Flattened reddish carapace with a distinctively wide front between the eyes. Banded legs. Found in the shallows.



MOTTLED SHORE CRAB

(*Pachygrapsus transversus*) 1.5 cm / 0.6 in

Flattened green carapace with dark brown lines. Yellow spots on claw arms. Pink claws. Found in the shallows.



CLUTCH CRAB

(*Speloeophorus* sp.) 1 cm / 0.4 in

Hexagonal carapace covered with rounded nodules. Stout claw arms. Mimics the coral rubble it hides in.



CORAL GALL CRAB

(*Troglocarcinus corallicola*) 1 cm / 0.4 in


Flattened spiny carapace and white-banded legs. Found living within pits and galls on a variety of coral species.



OCELLATE BOX CRAB

(*Calappa ocellata*) 10 cm / 4 in

Pale blotches with yellow speckles, formed by a network of dark lines on top of carapace. Large claws cover the face.

 The large flattened claws of box crabs can completely cover the soft mouth parts for protection. When threatened, they can also dig themselves backwards into the sand. As they forage, fishes like wrasse and flounders may follow them to snatch up any unsuspecting prey that gets exposed.



FLAME BOX CRAB

(*Calappa flammea*) 10 cm / 4 in

Irregular wavy red lines on carapace form a pattern that dissolves towards the rear. Large claws cover the face.



ROUGH BOX CRAB

(*Calappa galloides*) 6 cm / 2.4 in

Lumpy yellowish to brown carapace, shorter than it is wide. Ridge above claws with distinctively sharp teeth.

BOX CRABS / RUBBLE CRABS : INVERTEBRATES



NODOSE RUBBLE CRAB

(*Paractaea rufopunctata*) 2.5 cm / 1 in

Dome-shaped carapace with nodules in contrasting colors. Short bristles on claw arms. Found in rubble.



HOARY RUBBLE CRAB

(*Banareia palmeri*) 2.5 cm / 1 in

Pale yellow carapace, legs and claws covered in round orange nodules. Fine yellow bristles on legs and claws.



LONGSPINE HAIRY CRAB

(*Pilumnus spinosissimus*) 2.5 cm / 1 in

Distinctively hairy carapace and legs. Deep red claw arms with numerous short spines. Black tips on claws.



BRISTLED RUBBLE CRAB

(*Platyactaea setigera*) 2.5 cm / 1 in

Red to orange carapace with two pale lines towards the rear. Claw arms and legs bristled with short brown hairs.



ROUGH RUBBLE CRAB

(*Pseudomedaeus agassizi*) 3 cm / 1.2 in

Narrow V-shaped notch on front of carapace. White-banded legs. Distinctive ridges on front of claw arms.



DENTICULATE RUBBLE CRAB

(*Williamstimpsonia denticulatus*) 3 cm / 1.2 in

Flattened gray to pinkish carapace with highly variable markings. Numerous blunt spines protruding from sides.



YELLOWLINE ARROW CRAB

(*Stenorhynchus seticornis*) 7 cm / 2.8 in

Long tapering rostrum. Carapace with yellow and black stripes. Long legs with yellow stripes. Small blue claws.



All crabs have a hard exoskeleton that they must repeatedly shed in order to grow. First the crab absorbs seawater into its body, swelling up so that the outer shell cracks along the seams. The soft-bodied animal then slowly wriggles out of the shell, starting with the back legs, then the body and finally the front legs. Even the delicate mouth-parts are pulled out of their protective casings. The outer layer of the body hardens into a new exoskeleton. The extra seawater is then expelled, and the crab now has more room to grow inside its new larger body. Juveniles must molt more often.

While the new exoskeleton is forming the crab is vulnerable, so it must hide in the reef for protection. The Channel Clinging Crab (right) molts almost continuously as it progresses from its larval form, and less as it grows older. After about five years it becomes sexually mature and, with a terminal molt, it stops growing. If limbs are lost only three molts are needed in order to completely regrow new ones. Molting also gets rid of a crab's unwanted growths or harmful bacteria.





BATWING CORAL CRAB

(*Carpilius corallinus*) 15 cm / 6 in

Smooth bright red carapace with white spots. Legs have hints of purple and yellow at the joints. Dark claw tips.



GAUDY CLOWN CRAB

(*Platydiella spectabilis*) 2.5 cm / 1 in

Rounded bumpy orange to red carapace with yellow markings lined in black, also on legs and claw arms.



URN CRABS

(*Pitho* spp.) 2 cm / 0.8 in

Flattened carapace in varying colors, often speckled. The size and shape of lateral spines varies between species.



HEART URCHIN PEA CRAB

(*Dissodactylus primitivus*) 1.2 cm / 0.5 in

Smooth uniformly white carapace. Fringe of short bristles on legs. Commensal with Red Heart Urchins (p. 151).



WRINKLED PEA CRAB

(*Clypeasterophilus rugatus*) 1 cm / 0.4 in

Flattened carapace with wavy ridges. Brown bands on legs. Commensal with Inflated Sea Biscuits (p. 151).



SAND DOLLAR PEA CRAB

(*Dissodactylus mellitae*) 0.6 cm / 0.2 in

Flattened white carapace with reddish-brown mottling. Bristled legs. Commensal with Sand Dollars (p. 150).



ELKHORN CORAL CRAB

(*Domecia acanthophora*) 1.5 cm / 0.6 in

Flattened carapace edged in black, with tiny pale spots.
Small black and white spots on claws. Red-tipped legs.



In the daytime, Elkhorn Coral Crabs are found in holes on *Acropora* corals (p. 72). These are the fastest-growing corals in the Caribbean and will eventually grow to create the perfect home for the crabs, usually surrounded by a white rim of new skeletal growth. They emerge at night to forage.



TIDAL SPRAY CRAB

(*Plagusia depressa*) 7 cm / 2.8 in

Color varies from olive-green to reddish. Red or purple markings on legs and claws. Found on rocky inshores.



NIMBLE SPRAY CRAB

(*Percnon gibbesi*) 4 cm / 1.6 in

Flattened carapace, circled by a distinctive thin green line. Yellow bands and red spots on legs. Red eyes.



BLOTCHED SWIMMING CRAB

(*Achelous spinimanus*) 7.5 cm / 3 in

Bluish-gray to light brown carapace covered with dark brown lines and blotches. Sharp spines on claw arms.



REDBAIR SWIMMING CRAB

(*Achelous ordwayi*) 5 cm / 2 in

Red to yellowish-brown carapace. Long tufts of red hair along the tops of claw arms. Pale bands on the claws.



BLACKPOINT SCULLING CRAB

(*Cronius ruber*) 7.5 cm / 3 in

Brown to brick-red carapace with darker mottling. Red stripes on walking legs. Claws banded with red to black.



OCELLATE SWIMMING CRAB

(*Achelous sebae*) 10 cm / 4 in

Reddish-brown carapace with two distinctive large dark spots to the rear, each circled in white. Darker claw tips.



BLUE CRAB

(*Callinectes sapidus*) 20 cm / 8 in

The largest of the swimming crabs. Olive carapace with blue on all legs and claws. Females have orange claws.



SARGASSUM SWIMMING CRAB

(*Portunus sayi*) 10 cm / 4 in


Brown to gold with white blotches. Yellow edges on arms and claws. Found hiding in floats of sargassum (p. 24).



CHANNEL CLINGING CRAB

(*Maguimithrax spinosissimus*) 18 cm / 7 in

Only the male has very large claws, often longer than width of carapace. Brick-red above, white on abdomen.

 Channel Clinging Crabs, also known as King Crabs, are the largest crabs in the Caribbean. The males have much larger claws than the females and they compete with other males for the right to mate. They do this by approaching each other and stretching out their claws to see who has the largest, often turning about in a circle resembling a dance. This ritualized competition ensures that neither crab is killed in the confrontation. The loser might be the second largest King Crab on the reef and will still be able to find a mate later. The winning male carries the female about under his claws, fending off other suitors until the female is ready to mate. The female has a wide flap under her belly where she keeps thousands of eggs, fanning them continuously to aerate them. As the eggs develop she fans them more rapidly and they are released, hatching as tiny larvae called zoea. They feed in the plankton until they are large enough to settle onto a reef and begin foraging.



Males fighting.



Mating couple.



Female with eggs.

CLINGING CRABS : INVERTEBRATES



RED-RIDGED CLINGING CRAB

(*Mithraculus forceps*) 2.5 cm / 1 in

Carapace with long grooved indentations. Two sharp spines found just inside the claw arms. Smooth claws.



CORAL CLINGING CRAB

(*Mithrax hispidus*) 15 cm / 6 in

Wide red carapace and bristled legs. Numerous conical white spines on claw arms. Blunt spines around eyes.



NODOSE CLINGING CRAB

(*Mithraculus coryphe*) 2.5 cm / 1 in

Deep grooves and knobs on a mottled green to reddish carapace. Three blunt spines to the rear. Banded legs.



GREEN CLINGING CRAB

(*Mithraculus sculptus*) 2 cm / 0.8 in

Knobby green carapace with green legs and claws. Red spot inside joints of claw arms. Claws tipped with white.



RED CLINGING CRAB

(*Teleophrys ruber*) 2 cm / 0.8 in

Flattened red carapace with white markings. Red and white bands on legs. Smooth red claws with white tips.



BANDED CLINGING CRAB

(*Mithraculus cinctimanus*) 2 cm / 0.8 in

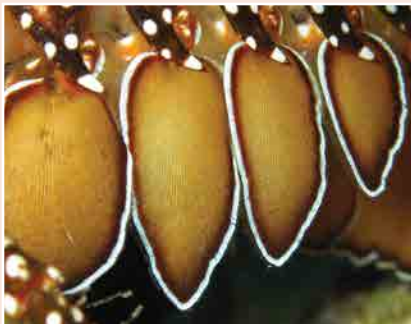
Carapace and legs are hairy. Smooth red-banded claws. Most commonly found under larger anemones (p. 116).




RED BANDED LOBSTER

(*Justitia longimana*) 20 cm / 8 in

Carapace with orange patches outlined in red. Red legs and claw arms banded with white. Prefers deeper reefs.



 Lobsters move about by walking or by using the paddle-shaped swimmerets on their tails. An essential part of a reef ecosystem, they feed on decaying matter, from algae to dead animals and even the feces of other reef inhabitants. Despite this, lobster is a popular and even iconic food throughout the Caribbean. With stocks dwindling, fisheries are having to travel to more and more remote coral reefs to supply the high demand for this delicacy. This was not always the perception; in the 18th century lobster was considered a very low-quality food and was often used to feed slaves and prisoners.

Juvenile lobsters are vulnerable on the reef. They are easily overexploited, as they hide in the more accessible shallows. They also tend to shelter in large groups, easier to harvest. In most areas there are size restrictions to make sure that each lobster has been given the chance to reproduce at least once in its life. If left in peace they can live for over 20 years.





CARIBBEAN SPINY LOBSTER

(*Panulirus argus*) 60 cm / 2 ft

Reddish carapace with large white spots on abdomen. Black and white horns above eyes. Long spiny antennae.



SPOTTED SPINY LOBSTER

(*Panulirus guttatus*) 45 cm / 1.5 ft

Dark red to brown. Upper legs and body are covered with small white spots. Brown stripes on the lower legs.



FLAMING REEF LOBSTER

(*Enoplometopus antillensis*) 13 cm / 5 in

Red with thin white lines and a white bulls-eye on side of carapace. Banded legs and large claws of equal size.



COPPER LOBSTER

(*Palinurellus gundlachi*) 20 cm / 8 in

Squat reddish-orange body covered with fine hairs. Found deep in crevices, caves and on deeper reefs.



SCULPTURED SLIPPER LOBSTER

(*Parribacus antarcticus*) 30 cm / 1 ft

Rough tan to yellow body with dark blotches. Tufts of small bristles on flat antennal plates. Small black eyes.



SPANISH SLIPPER LOBSTER

(*Scyllarides aequinoctialis*) 30 cm / 1 ft

Rounded brown to orange body. Brown spots on legs. Smooth antennal plates. Distinctively purple antennae.



CARIBBEAN NEON GOBY

(*Elacatinus lobeli*) 4 cm / 1.6 in

Blue stripe through eye, from snout onto tail. Cleaner species.
W Caribbean. Similar species: *E. oceanops* in Florida/Cuba.



In one of the best examples of symbiosis on a reef, tiny fishes called cleaning gobies will be allowed to jump onto larger fish in order to feed on dead skin and parasites, and even swim into their mouths to clean. They gather in areas called “cleaning stations.” The rules of predation are suspended here, to the benefit of all the fishes involved.

Not all gobies in this genus are cleaners. Some spend their time hiding inside tube and barrel sponges. Different locations in the Caribbean have different species and more than one of each type may be found on any given reef.

The main food source for gobies that live on a cleaning station are tiny parasites called copepods (p. 265) that feed off of the mucus on a fish’s skin. The gobies start at the tail and chase the parasites up and onto the chin, where they can be herded together and easier to catch.

While one fish is being cleaned, others circle nearby waiting for their turn. A fish will sometimes try to jump the line when it has a more pesky parasite, but generally fish tend to cooperate around cleaning stations. Ambush predators like groupers (p. 408) accumulate parasites more easily and have to visit their cleaning stations more often.





SHARKNOSE GOBY

(*Elacatinus evelynae*) 4 cm / 1.6 in

Yellow snout and stripe over eye to behind pectoral. Blue stripe onto tail. Cleaner species. Absent W Caribbean.



LINESNOUT GOBY

(*Elacatinus lori*) 5 cm / 2 in

Thin white bar on black snout. Thin white or blue stripe from top of eye to tail. On sponges. Belize to Honduras.



YELLOWNOSE GOBY

(*Elacatinus randalli*) 5 cm / 2 in

Yellow bar on yellowish snout. Yellow stripe from top of eye to end of tail. Cleaner species. SE Caribbean.



SPOTLIGHT GOBY

(*Elacatinus louisae*) 4 cm / 1.6 in

Rounded yellow spot on snout. Yellow/bluish/white stripe to dark spot at tail base. On sponges. N/W Caribbean.



YELLOWLINE GOBY

(*Elacatinus horsti*) 5 cm / 2 in

Yellow to white stripe from top of eye to tail. Yellowish snout. Sometimes small spot on snout. On sponges.



MESOAMERICAN SPONGE GOBY

(*Elacatinus colini*) 3 cm / 1.2 in

Yellow bar on yellow snout. Yellow stripe fades to white, from top of eye to tail. On sponges. Mexico to Honduras.



RUSTY GOBY

(*Priolepis hipoliti*) 4 cm / 1.6 in

Wide reddish to orange bars on head and body. Red bands on forehead. Red spots on tail and dorsal fin. Often upside down.



Gobies feed on small reef invertebrates and plankton, though some can feed on smaller fish. Incredibly diverse, gobies are the largest family of marine fishes and the most species-rich of all the vertebrates. Worldwide, this family sees the most new marine species being described every year.



DWARF GOBY

(*Lythrypnus elasson*) 2 cm / 0.8 in

Reddish to orange body with no bars. Rounded orange spots below eye. Males have long first dorsal spines.



DIPHASIC GOBY

(*Lythrypnus heterochroma*) 2.5 cm / 1 in

Bright red to orange with prominent barred pattern, bars become stripes to rear. Dark zigzag bars over abdomen.



MAHOGANY GOBY

(*Lythrypnus crocodilus*) 1.5 cm / 0.6 in

Wide dark brown bars. Thin white lines in interspaces. Red dorsal and anal fins. Dark spot at pectoral base.



BLUEGOLD GOBY

(*Lythrypnus spilus*) 2.5 cm / 1 in

Prominent wide orange bars. Blue-gray interspaces with midline thin white lines. Two orange bars below eye.



TUNNEL GOBY

(*Psilotris kaufmani*) 3 cm / 1.2 in

Silvery blue body with golden saddles. Dark bars below eye. Black upper pectorals, usually held out to the sides.



PYGMY GOBY

(*Lythrypnus minimus*) 1.5 cm / 0.6 in

Uniform reddish to orange with faint bars alternating with thin rows of white spots. Internal white band at midbody.



TUSKED GOBY (VARIATION)

(*Risor ruber*)

Translucent to uniform gray body, often pinkish towards head. White segments often show along spinal column.



TUSKED GOBY

(*Risor ruber*) 2.5 cm / 1 in

Brownish-gray with dense dark speckles. Often white bar at midbody. Low jaw on blunt snout. Found on sponges.




ORANGESPOTTED GOBY

(*Nes longus*) 10 cm / 4 in

Pairs of dark blotches down side, often joining to form an H shape. Dark bands on tail. Elongated first dorsal spine.



 An unlikely partnership exists between the Orangespotted Goby and the Sand Snapping Shrimp (p. 261); they are roommates. The goby lives and feeds in open sandy areas where there is little shelter, so the shrimp makes a home for both of them. This sandy burrow is in need of constant upkeep and the shrimp pushes sand and debris out of the hole. It always keeps at least one of its antennae on the goby's body as it does so. The goby outside acts as a sentinel, rapidly fluttering its tail if danger is near. The goby gets a safe place to live as payment for this guard duty.

The pelvic fins of gobies are often fused to form a rounded suction disc, similar to those found on sharksuckers. It is used to anchor them down onto the reef. Some species of goby will spend most of their lives hanging upside down under ledges and overhangs using these modified fins.





GLASS GOBY

(*Coryphopterus hyalinus*) 2.5 cm / 1 in

Translucent orange with white segments along spinal column. Dark scale edges. Pepper spots on lower body.



MASKED GOBY

(*Coryphopterus personatus*) 4 cm / 1.6 in

The most common goby. Similar to Glass Goby but no dark scale edges or spots. White dash on pectoral fin.



PEPPERMINT GOBY

(*Coryphopterus lipernes*) 3 cm / 1.2 in

Translucent yellow body. Blue on top of snout and upper edge of eye. Three blue lines from eye, upper one short.



BARFIN GOBY

(*Coryphopterus alloides*) 4 cm / 1.6 in

Translucent yellow body and orange head. Internal dark bar behind pectoral. Dark blotch near front of dorsal fin.



BARTAIL GOBY

(*Coryphopterus thrix*) 5 cm / 2 in

Pale body with orange to dusky markings. Dark bar at tail base. Black blotches on iris broken into irregular spots.



PALLID GOBY


(*Coryphopterus eidolon*) 6 cm / 2.4 in

Pale body with yellow to orange markings. Band from eye to jaw. Black blotches on iris. Dark bar at tail base.



NINELINE GOBY

(*Ginsburgellus novemlineatus*) 2.5 cm / 1 in
 Black body with nine narrow bright blue bars. Red to pale brown head and red Iris. Found in clear shallow waters.

 Ninline Gobies are one of the most striking fishes in the Caribbean but are rarely seen because of their very specific habitat. They live only under the sharp spines of sea urchins like the Rock-boring Urchin (p. 149) in the tidal zone, often just below the waterline.



CLOWN GOBY

(*Microgobius gulosus*) 8 cm / 3.2 in
 Two rows of irregular brown blotches. White lines under eye. White bar behind pectoral. Florida/Gulf of Mexico.



BANNER GOBY

(*Microgobius microlepis*) 5 cm / 2 in
 Bluish-gray body. Iridescent blue stripes below eye. Builds burrows in silty bottoms. Florida/W Caribbean.



COLON GOBY

(*Coryphopterus dicrus*) 5 cm / 2 in

As in *C. tortugae* but with small brown flecks, spots on top of head, pair of colon-like spots on pectoral base.



PATCH-REEF GOBY

(*Coryphopterus tortugae*) 6 cm / 2.4 in

Pale with brown and white spots. White bridle under eye. Bar (not spots) at tail base. No spot on lower pectoral fin.



SAND-CANYON GOBY

(*Coryphopterus venezuelae*) 8 cm / 3.2 in

As in *C. tortugae* but with darker blotch on lower pectoral base, dark bar at tail base. Prefers clean, deeper water.



BRIDLED GOBY

(*Coryphopterus glaucofraenum*) 8 cm / 3.2 in

As in *C. tortugae* but with dark X markings along flank, two dark spots at tail base. Prefers shallow silty areas.



GOLDSPOT GOBY

(*Gnatholepis thompsoni*) 8 cm / 3.2 in

Blunt snout. Dark bar runs from top of head, through eye and onto cheek. Commonly a gold spot above pectoral.



KUNA GOBY

(*Coryphopterus kuna*) 2.5 cm / 1 in

Translucent with irregular small brown spots. Distinctive straight line of several tiny black spots along upper iris.



ORANGESIDED GOBY

(*Tigrigobius dilepis*) 2.5 cm / 1 in

Translucent with two red patches on abdomen, outlined in black and then white. Similar dashes along spinal column.



The gobies on this page can appear similar and are easily confused by divers. Leopard Gobies are usually found perched on live, healthy coral heads and have distinctive brown spots. Semiscaled Gobies are usually found near holes and crevices in the shallower, surgy areas of the reef.



LEOPARD GOBY

(*Tigrigobius saucrus*) 1.5 cm / 0.6 in

Translucent with rows of oval brown spots. Two large brown patches on abdomen outlined only in white.



SEMISCALED GOBY

(*Tigrigobius pallens*) 2 cm / 0.8 in

Translucent with dark bars, more widely spaced towards rear. Pink head with brown bands. Dark spots below eye.



TIGER GOBY

(*Tigriobius macrodon*) 5 cm / 2 in

Translucent head and body with prominent thin black bars. Found in coral rubble or sponges. From Florida.



REDCHEEK GOBY

(*Tigriobius rubrigenis*) 2.5 cm / 1 in

Pale head with red bands. Over 20 thin bars. Honduras/Belize: *T. multifasciatus* elsewhere, without cheek bands.



FRECKLEFIN GOBY

(*Tigriobius gemmatus*) 2.5 cm / 1 in

Uniform dark brownish body with inconspicuous bars. Dark head with scattered small white spots. Dark fins.



CHECKERBOARD FRILLFIN GOBY

(*Bathygobius lacertus*) 9 cm / 3.5 in

Mottled brown with three dark saddles. Two rows of dark blotches form a checkerboard pattern on lower flank.



ISLAND FRILLFIN GOBY

(*Bathygobius mystacium*) 7 cm / 2.8 in

Mottled brown with three dark saddles. One row of dark blotches on lower flank. Dark blotch on lower tail base.



ANTILLES FRILLFIN GOBY

(*Bathygobius antilliensis*) 7.5 cm / 3 in


Mottled brown with three dark saddles. Row of three blotches on lower flank. Dash-like spots along body.



BLUE DARTFISH

(*Ptereleotris calliura*) 13 cm / 5 in

Similar to Hovering Dartfish (below), but with a long pointed tail in adults and black or dark red margins on dorsal fin.

 Dartfish get their name from the fast, headfirst escape they make into their burrows when threatened. They are often found in mated pairs. The Hovering Dartfish (below) is found throughout the Caribbean and is replaced by the Blue Dartfish (above) in Florida and the Gulf of Mexico.



HOVERING DARTFISH

(*Ptereleotris helenae*) 12 cm / 4.8 in

Bluish-gray to lavender with electric blue stripe on head. Rounded tail, not pointed. No black margin on dorsal fin.



HOVERING DARTFISH (JUVENILE)

(*Ptereleotris helenae*)

Dorsal and anal fins and rounded tail are more yellowish in juveniles, often with a dusky central spot at tail base.



DASH GOBY

(*Ctenogobius saepepallens*) 5 cm / 2 in

Dark bar through eye onto cheek. Row of dark midlateral dashes. Males have a dark patch on the lower gill cover.



SPOTFIN GOBY

(*Oxyurichthys stigmaliophius*) 17 cm / 6.8 in

White with large light brown to orange spots down side. Large black spot at lower-rear edge of first dorsal fin.



HIGHFIN GOBY

(*Gobionellus oceanicus*) 30 cm / 12 in

Light brown body and tapering tail. Elongated dark blotch below dorsal fin, outlined in green. Found in silty areas.



CRESTED GOBY

(*Lophogobius cyprinoides*) 10 cm / 4 in

Males with raised fleshy crest along midline of head. Dark stripes behind eye. Shallow coasts and mangroves.



PUGJAW WORMFISH

(*Cerdale floridana*) 9 cm / 3.5 in

Pale white to tan eel-like body, the upper part peppered with dark dots. Dorsal and anal fins not connected to tail.



LEMON GOBY

(*Vomerogobius flavus*) 3 cm / 1.2 in

Orange-yellow with a thin yellow stripe. Thin blue line on head. Rare, found among deep Masked/Glass Gobies.



SECRETARY BLENNY

(*Acanthemblemaria maria*) 5 cm / 2 in

White spots on head, white band behind eye. Many large spines. Cirrus with short branches. Orange patch over nape.



Tube blennies (Family: Chaenopsidae) live in the holes left behind by worms like the Christmas Tree Worm (p. 166). Usually only the head is seen, often with fleshy filaments above the eye called cirri. The rear body is transparent and tapering for retreating back into safety. They are planktivores, quickly darting out and grabbing food as it drifts by.



Spinyhead Blennies live in tight communities and many individuals can be found living on the same coral head. Holes nearest the top are farther into the water column and get more plankton floating by. These “penthouse” holes are prized by the largest and strongest blenny in the area and competition is fierce. Males also try for the best real estate in order to attract a mate. The female will deposit her eggs into the bottom of the best possible hole. The male will then fertilize these eggs and remain there with only his head poking out, guarding them until they are ready to hatch.



ROUGHHEAD BLENNY (FEMALE)

(*Acanthemblemaria aspera*)

Females are usually yellow with dark spots on gill cover and base of pectoral fin. Eyes are always bright orange.



ROUGHHEAD BLENNY (MALE)

(*Acanthemblemaria aspera*) 4 cm / 1.6 in

White lining on dorsal fin. Small inconspicuous spines. Bushy tree-like cirrus. Distinctive bright orange eyes.



SPINYHEAD BLENNY

(*Acanthemblemaria spinosa*)

Oblique white bar behind eye. Many short spines, often "crewcut." Single stalk cirrus may have short branches.



SPINYHEAD BLENNY (MALE)

(*Acanthemblemaria spinosa*) 3.5 cm / 1.4 in

Males may have a solid white patch on top of head and snout. Eyes always a distinctive yellowish-green color.



PAPILLOSE BLENNY

(*Acanthemblemaria chaplini*) 4.5 cm / 1.8 in

Tan body with white and brown spots. Cirrus branches out in a single plane. Blunt papillae on head and snout.




DWARF SPINYHEAD BLENNY

(*Acanthemblemaria paula*) 2.5 cm / 1 in

The smallest member of this genus. Short spines and bushy cirrus. Dusky orange eyes. Found in shallows.



 Sailfin Blennies live in loose colonies and use their elaborate dorsal fins to communicate with each other. The females have a lower dorsal fin and no fixed hole, whereas the darker males will stay in the same hole, guarding a clutch of eggs. They rapidly flick their dorsal fins up and down in a display to other males, establishing territory. This occurs most often in the morning and late afternoon. The display used for an approaching female is different: a more irregular rhythm while staying closer to the bottom. A successful male suitor can guard the eggs of more than one female.



SAILFIN BLENNY (MALE)

(*Emblemaria pandionis*) 7 cm / 2.8 in

Dark spot and orange rim on tall dorsal fin. Blue spots on head. Divot at upper pupil. Can pale or darken quickly.



SAILFIN BLENNY (FEMALE)

(*Emblemaria pandionis*)

Pale body with rows of lateral spots. White spots on head. Oblique bars on smaller dorsal fin (no dark spot).



RIBBON BLENNY (DISPLAYING MALE)

(*Emblemaria vitta*)

Males can rapidly switch color on their bodies and dorsal fins from black to pale, as part of an aggressive display.



RIBBON BLENNY

(*Emblemaria vitta*) 2 cm / 0.8 in

Pointed snout. Single long tapering cirrus. Arching dorsal fin with an irregular orange blotch at base of first spines.



CARIBBEAN BLENNY

(*Emblemaria caldwelli*) 3 cm / 1.2 in

Reddish to dusky head and body. Pointed snout. Single long banded cirrus. Very long filamentous pelvic fins.



FILAMENT BLENNY

(*Emblemaria hyltoni*) 2.5 cm / 1 in

Translucent body. Distinctively long mobile filamentous dorsal spike. Endemic to the Bay Islands of Honduras.



WRASSE BLENNY (JUVENILE)

(*Hemiemblemaria simula*)

Translucent with black lateral stripe from snout, through eye to tail. Mimics small juveniles of Bluehead Wrasse.




WRASSE BLENNY

(*Hemiemblemaria simula*) 11 cm / 4.4 in

Yellow with broad dark stripe. Black spot near front of dorsal fin. Red eye. Mimics Bluehead Wrasse (p. 390).



 Glass blennies have long tapering bodies that are nearly transparent and they are sometimes difficult to spot as they perch on top of coral heads. The thin spinal column is clearly visible through their bodies and is often highlighted with a row of red and white dashes.

They are notoriously difficult to identify on dives. Compare *E. diaphana* from Florida (top/left) to *E. leptocirrus* from the central Caribbean (bottom/left). It's often just a tiny cirrus or the intricate pattern of spots and lines on top of the head that have to be used to tell one from another (pictured above: *E. pricei*). There are over a dozen separate species, each with a limited geographical range. The three on the following page are from the western or central Caribbean.

Male glass blennies are most often found in small holes on coral heads, with only their black heads poking out. This is where the female deposits her eggs and the male stays in place to guard them. Females and young are transparent, often with a white patch on the long first dorsal spines which they can wave about, making them easily confused with triplefin blennies (p. 309).





WESTERN SMOOTHHEAD GLASS BLENNY
(Emblemariopsis pricei MALE) 3 cm / 1.2 in
 No cirrus over eye. First dorsal fin spines are short with white patch. Western member of Smoothhead complex.



WESTERN SMOOTHHEAD GLASS BLENNY
(Emblemariopsis pricei FEMALE)
 Transparent body with reddish-orange or pink on head. Typically found perched on coral heads, close to males.



BLUEGOLD GLASS BLENNY
(Emblemariopsis ruetzleri MALE) 2 cm / 0.8 in
 Very short cirrus over eye, often hard to see. First dorsal spines long and black with a white rim. Transparent body.



BLUEGOLD GLASS BLENNY
(Emblemariopsis ruetzleri FEMALE)
 Green, blue and gold patterns on head and transparent body. First two dorsal spines are long, white and mobile.



BLACKFIN GLASS BLENNY
(Emblemariopsis leptocirris MALE) 2.5 cm / 1 in
 Short cirrus over eye. Long white rim on front of dorsal fin. Like all males, will darken when defending holes.




BLACKFIN GLASS BLENNY
(Emblemariopsis leptocirris FEMALE)
 Paler head than in males, dark spots on head are more obvious. First two dorsal spines elongated as a spike.



ARROW BLENNY

(*Lucayablennius zingaro*) 6 cm / 2.5 in

Reddish body and yellow tail. Long pointed snout. Yellow stripe from snout to nape. Three black spots at rear dorsal fin.

 The Arrow Blenny is one of the few chaenopsids that isn't usually found in holes. It hovers, often among schools of other small fishes, with its tail permanently cocked for a quick burst of speed if it needs to hunt or escape predators. It will sometimes take rest inside the holes of sponges.



YELLOWFACE PIKEBLENNY (MALE)

(*Chaenopsis limbaughi*) 8 cm / 3.2 in

Long snout. Blue lines on yellow throat when expanded. Black spot on tall dorsal fin, with orange blotch above it.



YELLOWFACE PIKEBLENNY (FEMALE)

(*Chaenopsis limbaughi*)

Tan, becoming yellowish in grass, with midbody stripe and bars. Small black spot on front of dorsal fin. Pink iris.



REDBELLY TRIPLEFIN

(*Enneanectes jordani*) 4 cm / 1.6 in

Bright red rear body and anal fin. Final body bar black and oval. Base of tail with red bar and then white bar.



LOFTY TRIPLEFIN

(*Enneanectes altivelis*) 4 cm / 1.6 in

First dorsal fin tall, often white. Last bar narrow, indented at top and not darker. Prominent orange midbody scales.



ROUGHHEAD TRIPLEFIN

(*Enneanectes boehlkei*) 4 cm / 1.6 in

Often has pale blue spots. First dorsal fin usually short. Last body bar is darkest and wider than pale bar in front.



MATADOR TRIPLEFIN

(*Enneanectes matador*) 2.5 cm / 1 in

Reddish head. Last body bar is black, narrower than the white bar in front of it. Red tail with single thin white bar.



TWO-BAR TRIPLEFIN

(*Enneanectes deloachorum*) 2.5 cm / 1 in

Last two body bars darker. Red to dusky bar at tail base. Breeding males with a bright yellow head. S Caribbean.



BLACKEDGE TRIPLEFIN


(*Enneanectes atrorus*) 3 cm / 1.2 in

Long sloping snout. Tail first dorsal fin is usually white. Five oblique body bars equally dark, last is wider at top.



DWARF SHY BLENNY COMPLEX

(Pictured: *Starksia nanodes*) 2 cm / 0.8 in
 Reddish brown with a series of distinctive white triangular saddles. Very shy, rapidly darting for cover when spotted.

 Related fishes with a very similar appearance, but still separate species with different ranges, are placed into a species complex. Shy blennies are a perfect example, with almost 30 species in seven complexes. The examples shown here are mostly from the western Caribbean.



BLACKCHEEK SHY BLENNY COMPLEX

(Pictured: *Starksia weigti* MALE) 3.5 cm / 1.4 in
 Often a dark patch on gill cover. Indistinct body bars.
 White patch, forehead to upper jaw. White spots on lips.



BLACKCHEEK SHY BLENNY COMPLEX

(Pictured: *Starksia weigti* FEMALE)
 No dark patch on gill cover. Both sexes may have white dorsal patches, not forming rings (compare: *S. hassi*).



RINGED SHY BLENNY COMPLEX

(Pictured: *Starksia hassi* VARIATION)

Males often have dark patch on gill cover. White rings, especially dorsal, may be faint (compare: *S. nanodes*).



RINGED SHY BLENNY COMPLEX

(Pictured: *Starksia hassi*) 4 cm / 1.5 in

Distinctive thin white rings dividing orange to brown bars. A widespread species, often perched in tube sponges.



CHESSBOARD SHY BLENNY COMPLEX

(Pictured: *Starksia langi* FEMALE)

Pale tan or brown with two rows of dark blotches, lower row more oval. Few small dark spots on lower head.



CHESSBOARD SHY BLENNY COMPLEX

(Pictured: *Starksia langi* MALE) 2.5 cm / 1 in

Males often have dark patch on gill cover. Rows of dark blotches along body are ringed with tiny white spots.



CHECKERED SHY BLENNY COMPLEX

(Pictured: *Starksia ocellata* MALE) 6 cm / 2.4 in

Three rows of indistinct blotches. Orange-spotted cheek. Only from Florida (similar *S. occidentalis*: W Caribbean).



SMOOTHEYE SHY BLENNY COMPLEX

(Pictured: *Starksia sangreyae*) 2 cm / 0.8 in


Brown body with thin white bars. Head reddish in males. Distinctive large dark spot near tail. No cirrus over eye.



DIAMOND BLENNY

(*Malacoctenus boehlkei*) 7 cm / 2.8 in

Yellow head with pointed snout. Ocellated blue spot on first dorsal fin. Usually found near Giant Anemones (p. 116).

 Blennies in the genus *Malacoctenus* all have distinctly pointed snouts and are most often found in shallow reef areas. They perch on elongated pelvic fins with their heads up, on the lookout for both predators and prey. They feed mostly on small crustaceans and other invertebrates.



SADDLED BLENNY (MALE)

(*Malacoctenus triangulatus*) 6 cm / 2.4 in

Uniform row of dark triangular saddles along upper body. Males may have red spots or shading along abdomen.



SADDLED BLENNY (VARIATION)

(*Malacoctenus triangulatus*)

Saddled Blennies are highly variable in color, from tan to yellowish to red-spotted. The saddles may be indistinct.



GOLDLINE BLENNY (JUVENILE)
(*Malacoctenus aurolineatus*)

Juveniles often appear reddish and sometimes have gold stripes. Often found near Rock-boring Urchins (p. 149).



GOLDLINE BLENNY

(*Malacoctenus aurolineatus*) 8 cm / 3.2 in

Three prominent dark anterior bars, often fusing to form a smudgy H shape. Lower head usually strongly barred.



ROSY BLENNY (FEMALE)
(*Malacoctenus macropus*)

Color varies, with dark upper body and pale lower body, with indistinct blotches and heavy dark/light speckling.



ROSY BLENNY (MALE)

(*Malacoctenus macropus*) 5 cm / 2 in

Single stalk cirrus over eye and nape. Heavily speckled. May develop dark bars. Often red spots on lower head.



DUSKY BLENNY

(*Malacoctenus gilli*) 8 cm / 3.2 in

Faint bars and heavy dark/light speckling. Distinctive ocellated blue spot on upper rear body, onto dorsal fin.



IMITATOR BLENNY

(*Malacoctenus erdmani*) 4 cm / 1.6 in

Heavily speckled greenish-gray body. Distinctive dark-rimmed, green to bluish square spot on upper rear body.



SPOTCHEEK BLENNY

(*Brockius nigricinctus*) 7 cm / 2.8 in

Black ocellus on gill cover. Dark bars extend onto dorsal fin.
White stripe on snout. Males develop a bright red rear body.



Many fishes have ocellated spots in their markings. Towards the tail these “false eyes” are used to confuse predators, making it more difficult to tell which way a fish is facing. Males may also display ocellated spots on their gill covers to attract any females in the area.



BLACKBELLY BLENNY

(*Stathmonotus hemphillii*)

Highly variable in color: black, orange, red or tan. Some are completely white, with small dark lines under the eye.



BLACKBELLY BLENNY

(*Stathmonotus hemphillii*) 5 cm / 2 in

Long worm-like body with distinctive short white snout and bright red eye. Often white dorsal line and crossbars.



BLACKFIN BLENNY

(*Paraclinus nigripinnis*) 5 cm / 2 in

Tall first dorsal fin. Orange-ringed bluish ocellus on rear dorsal fin. Branched single stalk cirrus over eye and nape.



GOATEE BLENNY

(*Paraclinus barbatus*) 5 cm / 2 in

Reddish-orange. Long fleshy appendage on chin. Three blue ocelli on rear dorsal, outlined in yellow and then red.



BANDED BLENNY

(*Paraclinus fasciatus*) 6 cm / 2.4 in

Short first dorsal fin. Rear dorsal fin: one small ocellus or none. Eye and nape cirri are flattened bifurcated tabs.



BALD BLENNY

(*Paraclinus infrons*) 2.5 cm / 1 in

Tall first dorsal fin. White forehead. Two small ocelli on rear dorsal fin. Single stalk eye cirrus. No nape cirrus.



MARBLED BLENNY (VARIATION)

(*Paraclinus marmoratus*)

Color may vary, reddish brown to dark brown. Number of rear dorsal fin's ocelli may vary. Bars may be indistinct.



MARBLED BLENNY

(*Paraclinus marmoratus*) 8 cm / 3.2 in

Very tall first dorsal fin. Two ocelli on rear dorsal fin, one on rear anal fin. Branched single stalk cirrus over eye.



OYSTER BLENNY

(*Hypleurochilus pseudoaequipinnis*) 8 cm / 3.2 in
 Large head and tapering body, both with small orange spots. Branching cirrus over eye. Found in shallows.



Both of the blennies below may be found hiding in empty barnacle shells, often very close to the waterline. Sometimes tiny patches of eggs that the male is guarding can be seen. The Molly Miller feeds on small invertebrates as a juvenile and then moves onto a diet of algae.



TESSELLATED BLENNY

(*Hypsoblennius invemar*) 6 cm / 2.4 in
 Greenish-brown head and body, covered in blue-outlined bright red to orange spots. Large dark patch behind eye.



MOLLY MILLER

(*Scartella cristata*) 10 cm / 4 in
 Olive-green with dark bars. Pearly spots on upper back and head. Distinctive mohawk of red and white filaments.



PEARL BLENNY

(*Entomacrodus nigricans*) 10 cm / 4 in

Greenish with dark bars. Pearly-white spots on upper body, dark spots on nape. Prominent dark bars on lips.



SEAWEED BLENNY

(*Parablennius marmoratus*) 11 cm / 4.4 in

Highly variable in color: tan, reddish-brown to yellow. Pale blue lines below eye. Branching cirrus over eye.



BARRED BLENNY

(*Hypleurochilus bermudensis*) 12 cm / 4.8 in

Reddish-brown head with orange spots. Dark bars are thinner and paler near abdomen. Found in Florida/Cuba.



ORANGESPOTTED BLENNY

(*Hypleurochilus springeri*) 7 cm / 2.8 in

Orange spots on head and front of body. Rear of body with distinctive black and white bars. Found in shallows.



REDLIP BLENNY (VARIATION)

(*Ophioblennius macclurei*)

Body may be pale gray behind a reddish-brown head. Both variations may exist side by side on the same reef.



REDLIP BLENNY

(*Ophioblennius macclurei*) 13 cm / 5 in

Blunt snout. Red lower lip and pectoral fin. Wide mouth with comb-like teeth. Perches on shallow coral heads.



HAIRY BLENNY

(*Labrisomus nuchipinnis*) 22 cm / 8.6 in

Usually dark brown. May be black, tan or greenish. Ocellus on gill cover is fully rounded with complete thin white ring.



Male blennies often change into brighter contrasting colors when trying to impress a female. If the display is successful he begins bobbing his head up and down and swimming in an undulating motion, leading the female to a safe shelter for her eggs. He will guard them until they hatch.



MOCK BLENNY

(*Labrisomus cricota*) 16 cm / 6.4 in

Prominent dark bars extend to edge of dorsal fin. Ocellus on gill cover is indistinct, with a smudgy orange outline.



MASQUERADER BLENNY

(*Labrisomus conditus*) 22 cm / 8.6 in

Indistinct dark bars not extending over dorsal fin. Ocellus as in *L. cricota* (compare to white ring in *L. nuchipinnis*).



PUFFCHEEK BLENNY

(*Gobioclinus bucciferus*) 9 cm / 3.5 in

Dark bars extend slightly onto dorsal fin. White patch on front of dorsal fin. Orangish lower head with white spots.



QUILLFIN BLENNY

(*Gobioclinus filamentosus*) 12 cm / 4.8 in

Greatly elongated first dorsal fin, extended into filaments in males. Large white-edged black ocellus on gill cover.



DOWNY BLENNY

(*Gobioclinus kalisherae*) 8 cm / 3.2 in

Reddish head, usually with irregular patches of orange. Dark bars extend onto very spotted dorsal and anal fins.



MIMIC BLENNY

(*Gobioclinus guppyi*) 11 cm / 4.4 in

Dark bars extend onto fins. Front of dorsal fin is short. Prominent ocellus on gill cover with orange posterior rim.



PALEHEAD BLENNY

(*Gobioclinus gobicus*) 6 cm / 2.5 in

Blunt snout. Head is often reddish. Bars do not extend onto the dorsal fin membranes. Second bar wide at top.



LONGFIN BLENNY

(*Gobioclinus haitiensis*) 7 cm / 2.8 in

Overall pattern black and white. Front of dorsal fin tall, edged with white band. Often a dark circle on gill cover.



WHITESTAR CARDINALFISH

(*Apogon lachneri*) 7 cm / 2.8 in

Two small spots behind second dorsal fin, first black then smaller white. Darker tips on second dorsal and anal fins.



Cardinalfish hide during the day, sometimes near the safety of anemones. Most active at night, their large eyes help them to pluck food out of the water and their reddish color makes them harder for predators to find in the dark. Male cardinalfish can be seen incubating eggs in their mouths.



BARRED CARDINALFISH

(*Apogon binotatus*) 15 cm / 6 in

Pale bronze body. Dark bar from behind second dorsal fin down to anal fin. A second dark bar at tail base.



BELTED CARDINALFISH

(*Apogon townsendi*) 9 cm / 3.5 in

Pink body with orange abdomen. Three dark bars: behind second dorsal fin, near tail and at tail base.



BROADSADDLE CARDINALFISH

(*Apogon pillionatus*) 7 cm / 2.8 in

Narrow dark bar behind second dorsal fin and wide bar towards tail base, each with a narrow white bar behind it.



PALE CARDINALFISH

(*Apogon planifrons*) 11 cm / 4.4 in

Pale pink head and body with pearly highlights. Thin dark bar behind second dorsal fin and a wider bar at tail base.



TWOSPOT CARDINALFISH

(*Apogon pseudomaculatus*) 11 cm / 4.4 in

Dark spots under second dorsal fin, at base of tail and on edge of gill cover. White lines on top and bottom of eye.



FLAMEFISH

(*Apogon maculatus*) 11 cm / 4.4 in

Dark spot under second dorsal fin. Stripe from snout to edge of gill cover. White lines on top and bottom of eye.



SAWCHEEK CARDINALFISH

(*Apogon quadrisquamatus*) 8 cm / 3.2 in

Reddish-bronze to salmon body with darker speckles. Elongated oval spot at tail base. Fins often pale yellow.



STRIPED CARDINALFISH

(*Apogon robbyi*) 5 cm / 2 in

Translucent to reddish-bronze body with thin dark stripes. Dark spot at tail base, sometimes diffuse. Yellowish fins.



ROUGH LIP CARDINALFISH

(*Apogon robinsi*) 10 cm / 4 in

Dark bar behind second dorsal fin continues to anal fin.
Dark borders on dorsal and anal fins. Wide bar at tail base.



The two species below can easily be confused by divers. Both may be found in the shallows and seagrass beds at night and both have enlarged pelvic fins. While each species may be found inside shells, only the Conchfish hides inside the shell of a living Queen Conch (p. 241).



BLACKFIN CARDINALFISH

(*Astrapogon puncticulatus*) 10 cm / 4 in

Bronze body and dark speckles on fins. Enlarged pelvic fins, often yellowish and with a darker leading edge.



CONCHFISH

(*Astrapogon stellatus*) 8 cm / 3.2 in

Black to bronze with black speckles. Row of black dots down mid-side. Dark lines behind eye. Black pelvic fins.



MIMIC CARDINALFISH

(*Apogon phenax*) 8 cm / 3.2 in

Bar behind dorsal fin narrows to point above abdomen (compare: *A. robinsi*). Often a darker bar at tail base.



BRIDLE CARDINALFISH

(*Apogon aurolineatus*) 7 cm / 2.8 in

Red to salmon body with no distinctive markings. Usually a dark line radiating from eye. Found near anemones.



BIGTOOTH CARDINALFISH

(*Paroncheilus affinis*) 11 cm / 4.4 in

Translucent salmon to bronze with paler abdomen. Indistinct dark stripe from snout, through eye to gill cover.



SPONGE CARDINALFISH

(*Phaeoptyx xenus*) 8 cm / 3.2 in

Silver to bronze body with a yellowish snout. Multiple speckles of different sizes are found on each scale.



FRECKLED CARDINALFISH

(*Phaeoptyx conklini*) 9 cm / 3.5 in

Rows of dark crescent-shaped spots. Oblique dark bar down from eye. Dark bar on entire width of tail base.



DUSKY CARDINALFISH

(*Phaeoptyx pigmentaria*) 8 cm / 3.2 in

Pink with single dark spots on scales. Spots on head are often larger. Dark bar under eye. Bar at tail base.



LONGSPINE SQUIRRELFISH

(*Holocentrus rufus*) 44 cm / 17 in

Bright white triangular blotches behind tips of dorsal spines.
Elongated rear dorsal fin. Long tail base, long upper tail lobe.



Squirrelfish are largely nocturnal and can be found in the daytime taking shelter under ledges and overhangs. Their bright red coloration actually make them less visible at night, when they emerge to feed on crabs and mollusks. They make loud grunting noises to defend their territory.



LONGJAW SQUIRRELFISH

(*Neoniphon marianus*) 22 cm / 9 in

Golden stripes on reddish body. White-tipped spines on first dorsal fin. Distinctively long white anal fin. Red tail.



SQUIRRELFISH

(*Holocentrus adscensionis*) 45 cm / 18 in

Pink with reddish stripes. First dorsal fin yellow.
Second dorsal, pelvic and anal fins white to pale pink.



DUSKY SQUIRRELFISH

(*Neoniphon vexillarium*) 17 cm / 7 in

Brownish-red with wide silvery stripes and thinner dark stripes. White leading edge on pelvic and anal fins.



REEF SQUIRRELFISH

(*Neoniphon coruscum*) 14 cm / 5.5 in

Red body with thin white stripes. Dorsal fin red with white tips. Large black blotch across first three dorsal spines.



CARDINAL SOLDIERFISH

(*Plectrypsops retrospinis*) 15 cm / 6 in

Oval pink to reddish body with large eye near front of head. Pale fins. Distinctively rounded lobes on tail.



BLACKBAR SOLDIERFISH

(*Myripristis jacobus*) 25 cm / 10 in

Distinctive black bar at edge of gill cover to pectoral base. Thin white margins on all fins except the pectoral.



BIGEYE

(*Priacanthus arenatus*) 45 cm / 18 in

Uniformly red to silvery-pink body. May have darker red bar or spots beneath eye. Schools over deeper reefs.



GLASSEYE SNAPPER

(*Heteropriacanthus cruentatus*) 51 cm / 20 in


Deep red to pale pink body, sometimes with silvery bars. Large red eyes. Dark specks on tail and dorsal/anal fins.



PEACOCK FLOUNDER

(*Bothus lunatus*) 45 cm / 18 in

Blue rosettes on body and blue spots on head and fins.
Dark bars on pectoral fin in larger fish. Notched forehead.

 Flounders can change color very rapidly, even while swimming over different types of reef floor. They may start out dark and mottled as they swim over patches of algae and then turn almost white as they move over sand. This camouflage helps keep them invisible to both predators and prey.



LARVAL FLOUNDERS

(Family: Bothidae)

One of the more common larvals seen on night dives, they begin life with an eye on either side of their heads.



JUVENILE SOLES

(Family: Achiridae)

Often solid black, mimicking dead leaves. The same species may show either darker crossbars or spots.



CHANNEL FLOUNDER

(*Syacium micrurum*) 30 cm / 12 in

Eyes are distinctively close together. Two dark spots on lateral line: under laid-down pectoral and at base of tail.



SPOTFIN FLOUNDER

(*Cyclopsetta fimbriata*) 33 cm / 13 in

Pale brown body. Two large dark spots on both dorsal and anal fins. Spot behind pectoral base and on tail.



MACULATED FLOUNDER

(*Bothus maculiferus*) 25 cm / 10 in

Blue to gold rings and spots. Midbody blotch. Convex (not notched) forehead. Males have long pectoral spines.



EYED FLOUNDER

(*Bothus ocellatus*) 16 cm / 6 in

Covered in brown to tan rosettes. Dark midbody blotch. Males with orange spots between widely spaced eyes.



LINED SOLE

(*Achirus lineatus*) 23 cm / 9 in

Tan to gray with tufts of cirri and dark spots in faint lines. Small pectoral fin and fleshy groove at top of gill cover.



NUDE SOLE

(*Gymnachirus nudus*) 20 cm / 8 in

Pale brown with distinctive loose folds of skin. Around fifteen dark narrow vertical crossbars and more on tail.



SPOTTED SCORPIONFISH

(*Scorpaena plumieri*) 45 cm / 18 cm

The largest of the scorpionfishes. Pale tail with three dark bars. Often fleshy cirrus over eye. Color highly variable.



Scorpionfish are masters of camouflage. The fleshy skin can take on both the color and even the texture of their surroundings. Their main defense is a row of sharp dorsal spines that contain a powerful neurotoxin that can cause intense pain, swelling and nausea if a diver is stung.



Scorpionfish use their wide mouths to gulp in their prey with a sudden strike, relying on camouflage to hunt from the reef floor. These successful ambush predators rarely move, and only for short distances, hopping on their fan-shaped pectoral fins. When disturbed, these fins can be used to flash a vivid warning sign.



SPOTTED SCORPIONFISH (JUVENILE)
(*Scorpaena plumieri*)

Dark gray or even black. Pronounced dark bar below second dorsal fin. Smooth skin with few appendages.



GOOSEHEAD SCORPIONFISH
(*Scorpaena bergii*) 10 cm / 4 in

Mottled brown body with dark bar to the rear. Dark blotch in middle of dorsal fin. Deep pit on head, behind the eye.



CORAL SCORPIONFISH

(*Scorpaena albifimbria*) 9 cm / 3.5 in

Pink to bright red on a pale background. Dark saddle above pectoral fin. Tail with red bar and red margin.



MUSHROOM SCORPIONFISH

(*Scorpaena inermis*) 11 cm / 4.4 in

Tiny upside-down mushroom shapes over top of eye. Mottled red to brownish body. Two indistinct bars on tail.



DEEPRREEF SCORPIONFISH

(*Scorpaenodes tredecimspinosus*) 7 cm / 3 in

Reddish-brown body. Black blotch at rear edge of first dorsal fin. White bar on tail base and red bar onto tail.




REEF SCORPIONFISH

(*Scorpaenodes caribbaeus*) 12 cm / 5 in

Dark brown to red body. Yellow spots on large pectoral fins and tail. Small black spot on rear of first dorsal fin.



 Some of the most difficult animals to spot on a dive, frogfish may camouflage themselves to look like sponges. Often just the eye and a wide upturned mouth are recognizable. Unlike most other fishes they have no swim bladder, allowing them to remain motionless and unnoticed on the reef. They are not good swimmers. Instead, their strong pectoral fins are like modified feet for clinging onto the reef and for taking short hops. Their backward-facing gill openings can be used to jet them forward for an extra burst of speed. Unless disturbed, they tend to remain in the same spot; it can take weeks for them to change color and blend in to a new location. Frogfish have a tiny lure that can be dangled in front of them to entice prey. If this lure gets broken it can regrow over time.



Frogfish boast one of the fastest gulps in the animal kingdom. In less than six milliseconds, their mouths can open wider than their heads, creating a powerful suction that pulls in prey which is swallowed whole. They sometimes flex their jaws to be ready for a strike.



OCELLATED FROGFISH

(*Fowlerichthys ocellatus*) 42 cm / 17 in

Three large dark ocellated spots: on lower dorsal fin, on midbody and on tail. Elongated filaments on lure.



SARGASSUMFISH

(*Histrio histrio*) 20 cm / 8 in

Numerous fleshy tabs and small white spots. Found camouflaged in floats of Sargassum Seaweed (p. 24).



STRIATED FROGFISH

(*Antennarius scaber*) 21 cm / 8 in

Thin dark lines and spots on head, body and fins. Color varies (may be black). Lure with worm-like appendages.



DWARF FROGFISH

(*Antennarius pauciradiatus*) 6 cm / 2.4 in

The smallest of the frogfishes. Small brown spots on first dorsal soft ray and at mid-base of dorsal fin. Short lure.



LOGLURE FROGFISH (JUVENILE)

(*Antennarius multiocellatus*)

Color varies, often red or black. Transparent spots on tail and fins, mimicking sponges. Large blunt first dorsal fin.



LOGLURE FROGFISH

(*Antennarius multiocellatus*) 14 cm / 5.5 in


The most common frogfish. Ocellated spot at rear dorsal fin base and anal fin. Three spots on tail. Long lure pole.



FLYING GURNARD

(*Dactylopterus volitans*) 45 cm / 18 in

Blunt snout and tapering body. Large wing-like pectoral fins extend to tail base, with bright blue spots and lines.

 Searobins and gurnards have wide pectoral fins that can spread out like wings. Often brightly colored, these are used as a warning or to surprise potential predators. The first three pectoral fin rays are separated from the rest and are used for stirring up the sand in search of small prey.



FLYING GURNARD (JUVENILE)

(*Dactylopterus volitans*)

Juveniles have smaller, less conspicuous pectoral fins. Two tall dorsal spines, often held erect behind the head.



LEOPARD SEAROBIN

(*Prionotus scitulus*) 25 cm / 10 in

Brown body with three or four wide diagonal darker bars. Body and fins have reddish spots. Florida/Gulf of Mexico.



BLUEWING SEAROBIN (JUVENILE)

(*Prionotus punctatus*)

Juveniles have smaller pectorals and a distinctive dark spot at rear of first dorsal fin. Spot at center of tail base.



BLUEWING SEAROBIN

(*Prionotus punctatus*) 20 cm / 8 in

Brown with darker brown spots. Pectoral fins, with bright blue leading edges, extend back to second dorsal fin.



BANDTAIL SEAROBIN

(*Prionotus ophryas*) 20 cm / 8 in

Coppery-orange body with broad black bars. Dark spots and bands on wide pectorals. Three black bars on tail



SHORTNOSE BATFISH

(*Ogcocephalus nasutus*) 38 cm / 15 in

Dark brown to grayish body. Prominent rostrum (horn) above reddish lips. Pectoral fins may have darker edges.



POLKADOT BATFISH

(*Ogcocephalus cubifrons*) 38 cm / 15 in

Pale brown with yellowish-orange patches behind eye. Dark spots on pale pectorals. Florida/Gulf of Mexico.



ROUGHBACK BATFISH

(*Ogcocephalus parvus*) 10 cm / 4 in

Raised head with short rostrum. Conical spines on back. Small mouth with reddish lips. Color is highly variable.



SAND DIVER

(*Synodus intermedius*) 44 cm / 17 in

Brown bars join diamond-shaped blotches on sides. Final bar is an inverted Y. Dark spot at upper edge of gill cover.



Lizardfish are ambush predators, commonly found half buried in sandy areas. They swallow their prey whole and have rows of sharp teeth to stop it from escaping. The Sand Diver pictured above had eyes too big for its stomach and eventually had to let the flounder go.



SNAKEFISH

(*Trachinocephalus myops*) 40 cm / 16 in

Pale blue and gold stripes down side. Black oval at top of gill cover. Distinctively blunt head and upturned mouth.



INSHORE LIZARDFISH

(*Synodus foetens*) 43 cm / 17 in

Gray to greenish-brown. Dark diamond-shaped blotches with pale centers. Row of pale spots along upper body.



DOUBTFUL LIZARDFISH

(*Saurida suspicio*) 9 cm / 3.5 in

Slender light brown body with dark saddles. Large dark spots along the lateral line. Distinctive tiny oval pupil.



RED LIZARDFISH

(*Synodus synodus*) 33 cm / 13 in

Brown to reddish body with small blue markings. Broken white line down side. Small dark spot just behind snout.



LANCER DRAGONET (FEMALE)

(*Callionymus bairdi*)

Females with less conspicuous dorsal fin, yellow at front and black behind. Yellow to brown bars on lower cheek.



LANCER DRAGONET (MALE)

(*Callionymus bairdi*) 11 cm / 4.4 in

Males have more a pronounced dorsal fin, often reddish to gold with dark lines and spots. Pale blue markings.



SPOTTED DRAGONET

(*Diplogrammus pauciradiatus*) 6 cm / 2.4 in

Heavily mottled and spotted body. Flexible dorsal spines. Skin keel along lower body, with a row of dark spots.



REDSPOTTED HAWKFISH

(*Amblycirrhitus pinos*) 10 cm / 4 in

Tall barred body. Bright red spots on face and dorsal fin. Red tassels on dorsal spine tips. Dark bar at tail base.



YELLOWHEAD JAWFISH

(*Opistognathus aurifrons*) 13 cm / 5 in

Yellow head and pale bluish body. Dark marks on head.
Bar through eye. Rounded tail. Found in sandy burrows.



Each Yellowhead Jawfish constructs an elaborate burrow, lined with larger pieces of rubble to avoid a cave-in. They can be seen tidying house as they spit out unwanted sand and debris and sometimes even raiding another burrow for choice pieces of building material. At night they may take a larger piece of rubble and use it to cover their burrows while they rest. They feed on plankton that drifts over the sand, but at the first sign of danger they slowly swim backwards into their burrow, tail first. They may dart in headfirst if suddenly alarmed.

Males and females live in separate burrows. For mating, they create a third “nuptial” burrow where the female deposits her eggs and the male fertilizes them. They are mouth-brooders: the male protects the eggs in his mouth, often churning them about to keep the eggs supplied with fresh oxygen.

Jawfish are typically more shy than usual when they are brooding, remaining closer to the entrance of their burrows. After about a week, the eggs are ready to hatch and the tiny young are all released at once, usually around sunset.





YELLOW JAWFISH (FEMALE)
(*Opistognathus gilberti*)

Gray to light blue body with diffuse pale yellow lines on dorsal and anal fins. Yellow tail. Blue markings on head.



YELLOW JAWFISH (MALE)

(*Opistognathus gilberti*) 7.5 cm / 3 in

Distinctive black spot on white dorsal fin. Black tail with transparent edges. Found burrowing on deeper reefs.



DUSKY JAWFISH

(*Opistognathus whitehursti*) 5 cm / 2 in

Bars and small pores on jaw. Finger-like nasal cirrus. Adults: no dorsal fin spots, juveniles: one spot near front.



MOUSTACH JAWFISH

(*Opistognathus lonchurus*) 15 cm / 6 in

Yellowish-brown body with blue stripes. Blue on top lip and iris. Distinctive thin blue line from cheek to gill cover.



BANDED JAWFISH

(*Opistognathus macrognathus*) 20 cm / 8 in

Head sparsely covered in small pores. Finger-like nasal cirrus. 2nd spot on dorsal fin far back, not touching base.



MOTTLED JAWFISH

(*Opistognathus maxillosus*) 10 cm / 4 in

Head densely covered in small pores. Dark branched nasal cirrus. 2nd spot on dorsal fin dark, touching base.



BEARDED TOADFISH

(*Sanopus barbatus*) 41 cm / 16 in

Elongated brown body with broad head. Thick branching barbels around chin. Large blue eyes. Belize to Panama.



Toadfish communicate with each other using deep croaking sounds. They make burrows where males take care of the eggs and also the newly hatched young. Without a planktonic larval stage, separate toadfish species are not widespread, but endemic to certain areas of the Caribbean.



WHITELINED TOADFISH

(*Sanopus greenfieldorum*) 31 cm / 12 in

Black body with solid white lines on head and radiating from eyes. White spots on body. Found only in Belize.



WHITESPOTTED TOADFISH

(*Sanopus astrifer*) 28 cm / 11 in

Black body and pointed barbels, covered with small white spots. Found only in Belize and surrounding atolls.



COZUMEL TOADFISH

(*Sanopus johnsoni*) 30 cm / 12 in

Long thin fleshy barbels around chin, rarely branching. Large whitish nostrils in front of eyes. Yucatan to Belize.



SPLENDID TOADFISH

(*Sanopus splendidus*) 29 cm / 11.5 in

Thin white lines on head. Yellow border on pectoral fins. Yellow ventral, dorsal and anal fins. Endemic to Yucatan.



SOUTHERN STARGAZER

(*Astroscopus ygraecum*) 44 cm / 17 in

Gray body with white spots on head (may form radiating lines). Black stripes on tail (not continuing onto body).



WARTEYED STARGAZER

(*Gillellus uranidea*) 5 cm / 2 in

Tapering white body with four dark or red saddles across back. Tall flexible first dorsal fin. Often buried in sand.



YELLOW GOATFISH

(*Mulloidichthys martinicus*) 40 cm / 16 in

Distinctive yellow stripe from eye to tail base. Deeply forked yellow tail. Two thin fleshy barbels under chin.



SPOTTED GOATFISH

(*Pseudupeneus maculatus*) 30 cm / 12 in


White to pink body with three large reddish-black spots below dorsal fin. Blue lines from mouth to below eye.



ATLANTIC FLASHLIGHT FISH

(*Kryptophanaron alfredi*) 14 cm / 5.5 in

Dark body with large eye and prominent white spots along lateral line. Large oblong glowing light organ under eye.

 The Atlantic Flashlight Fish is closely related to the squirrelfishes (p. 324). Under each eye is an organ filled with light-producing bacteria. They turn this light off by raising a dark membrane and can use a rapid blinking to attract mates. They are most active on dark nights and new moons.



CORAL REEF TONGUEFISH

(*Symphurus arawak*) 6 cm / 2.4 in

Elongated yellowish body with four or five faint body bars. Dorsal and anal fins pale, darkening towards tail.



OCELLATED TONGUEFISH

(*Symphurus ommaspilus*) 6 cm / 2.4 in

White to pale brownish body with scattered dots. Two distinctive black spots near tail base, circled in white.



SURGE CLINGFISH

(*Tomicodon rupestris*) 3.5 cm / 1.5 in

Pale brown body with six hourglass saddles down back. Dark bars under eye. Dark patch on upper pectoral base.



CRYPTIC CLINGFISH

(*Tomicodon cryptus*) 2 cm / 0.8 in

Dark brown bars edged with blue or blue spots. Second and third bars are an inverted Y. Thin dark bars from eye.



STIPPLED CLINGFISH

(*Gobiesox punctulatus*) 6.5 cm / 2.5 in

Pale brown body with small olive spots. Wide flattened head. Found among coral rubble in very shallow water.



PAPILLATE CLINGFISH

(*Acyrtus artius*) 3.5 cm / 1.4 in

Reddish-orange head and front body. Rear body with four reddish-brown bars and spots. May show blue spots.



EMERALD CLINGFISH

(*Acyrtops beryllinus*) 2 cm / 0.8 in

Bright green to brownish body with white spots and lines. Dark lines radiate from eye. Seagrass beds, up to 3m.



RED CLINGFISH

(*Acyrtus rubiginosus*) 3.5 cm / 1.5 in

Reddish-purple body with darker red cross-bars. May be solid red or blue-spotted. Shallow, often under urchins.



RED LIONFISH

(*Pterois volitans*) 49 cm / 19 in

Red bars on head and body. Large pectoral arrays. Long dorsal and anal spines. Fleshy appendages around mouth.



It has been called the worst marine species invasion ever. Although lionfish are now found throughout the area, they are not native to the Caribbean. They were probably introduced from aquariums in Florida and are remarkably successful in their new habitat, with no natural predators. The dorsal, pelvic and anal spines are highly venomous. A female can reproduce after only one year and, under the right conditions, can do so every four days. She can release over two million eggs every year. Juveniles are nearly transparent, with the same venomous spines.



The major threat from lionfish comes not from their spines, but from their voracious appetites. Indiscriminate feeders, with stomachs expanding to 30 times their normal size, they may continue to feed after they are full. Using wide pectoral fins to herd prey, they are capable of taking fish half their own body size. Over 70 local species have been found inside Lionfish, including shrimps, crabs and squid. They also target juvenile fishes, which seriously disrupts the balance of local reef ecosystems. They have even been found to eat cleaner species, wiping out entire cleaning stations.



BLACK BROTULA

(*Stygnobrotula latebricola*) 8 cm / 3.2 in

Dark brown with short snout and overhanging mouth. Black vertical fins fused with tail. May act as a cleaner.



REEF-CAVE BROTULA

(*Grammonus claudei*) 10 cm / 4 in

Tapering brown body. Black vertical fins fused with tail, paler at the base to the front. Found deep inside caves.



PEARLFISH

(*Carapus bermudensis*) 20 cm / 8 in

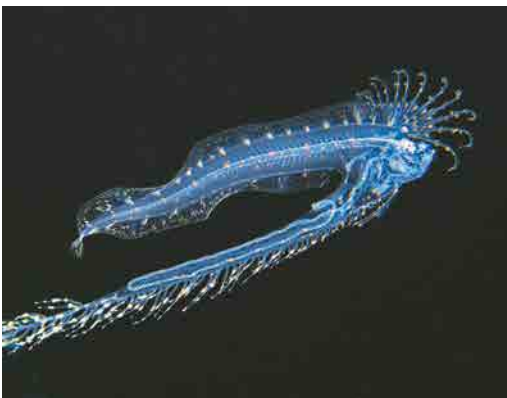
Long thin translucent body, tapering to a point. Lives inside the anal cavity of some sea cucumber species.



DWARF BROTULAS

(Family: Dinematiichthyidae) 22 cm / 9 in

Tail not fused to dorsal and anal fins, unlike in other brotulas. 18 species in 5 genera endemic to Caribbean.



LARVAL CUSK EEL

(*Lampogrammus* sp.)

One of the more bizarre fish in the ocean, its stomach protrudes to mimic a siphonophore's tentacles (p. 114).



CUSK EEL

(Family: Ophidiidae) 10 cm / 4 in

Long tapering body. Rounded head with large eye and thin barbels under chin. This species buries in the sand.



LONGSNOUT SEAHORSE

(*Hippocampus reidi*) 18 cm / 7 in

Highly variable in color, often with contrasting bands.
Tiny black spots when pale or white spots when dark.



Seahorses camouflage themselves in many different colors and rarely move about, making them hard to spot on the reef. They have a prehensile tail which is not used for swimming, but for grabbing onto sponges or the branches of gorgonians. When they do swim, it is only done by fluttering their delicate transparent dorsal fins very rapidly, up to 35 times a second. Smaller pectoral fins found just behind the head are used for steering.

Seahorses have to eat constantly to stay alive because they have no stomachs to hold their food. They have a remarkably accurate strike rate of around 90%, feeding on small zooplankton like shrimps and mysids (p. 266). This strike has been measured at an incredible two milliseconds.

It is the male seahorse that becomes pregnant. The female places her eggs in a brood pouch on the male's belly. After fertilizing the eggs, the males will carry them for up to six weeks. Seahorses can live for up to five years and form mating bonds with the same partners. Unfortunately they are often caught and dried to sell as ornaments for tourists, or for spurious Asian medicines.





LONGSNOUT SEAHORSE (JUVENILE)
(*Hippocampus reidi*)

Often in dark colors and found in shallow seagrass beds, they are released from the brood pouch fully formed.



LINED SEAHORSE

(*Hippocampus erectus*) 17 cm / 6.8 in

Light yellow to black blotched body with thin irregular stripes. Thin white lines radiate from eye, over gill cover.



BANDED PIPEFISH

(*Micrognathus crinitus*) 15 cm / 6 in

Short snout. Pale irregular body bars and sometimes a thin brown central line running the length of the body.



HARLEQUIN PIPEFISH

(*Micrognathus crinitus*) 15 cm / 6 in

Contrasting dark and light brown bars from snout to tail. Commonly found hiding in heads of branching corals.



BANDED PIPEFISH (VARIATION)

(*Micrognathus crinitus*)

Color is not always useful in distinguishing between the pipefish species. Some also have fleshy appendages.



BANDED PIPEFISH (VARIATION)

(*Micrognathus crinitus*)

In shallow water, closer to the sunlight, a light yellow or golden color can offer better camouflage.



PIPEHORSE

(*Amphelikturus dendriticus*) 8 cm / 3.2 in

Distinctive fleshy appendages resemble tufts of algae, in which it hides. Small dorsal fin just above a prehensile tail.



Like their close cousins the seahorses, pipefishes rely on camouflage to hunt and avoid being noticed by predators. With over twenty species in the Caribbean, identification underwater is often impossible without being able to see the details of each tiny fin. Color variations are common.



PIPEHORSE (JUVENILE)

(*Amphelikturus dendriticus*)

Smaller individuals are usually darker, with fewer fleshy appendages and often hide in lagoons and seagrass.



CRESTED PIPEFISH

(*Cosmocampus brachycephalus*) 12 cm / 4.8 in

Short upturned snout. Brown body with darker broken stripes. Transparent tail. Usually found in areas of algae.



SHORTFIN PIPEFISH (VARIATION)
(*Cosmocampus elucens*)

A rare lavender variation of Shortfin Pipefish, often in shallower water. Darker varieties are found up to 300m.



SHORTFIN PIPEFISH

(*Cosmocampus elucens*) 17 cm / 6.8 in
Tan to greenish-brown with pale narrow bars. Elongated snout with ridges on side. Two dark lines behind eye.



DUSKY PIPEFISH

(*Syngnathus floridae*) 26 cm / 10.2 in
Diffuse stripe on distinctively elongated snout. Upper body mottled with irregular spots. Found in shallows.



WHITENOSE PIPEFISH

(*Cosmocampus albirostris*) 20 cm / 8 in
Distinctively white snout. Brown body with regularly spaced white and dark bars. Found on sandy bottoms.



CHAIN PIPEFISH

(*Syngnathus louisianae*) 38 cm / 15 in
Elongated snout with a dark stripe. Bright patch on gill cover. Thin dark bars along body. Florida/Gulf of Mexico.



SARGASSUM PIPEFISH

(*Syngnathus pelagicus*) 21 cm / 8.2 in
Brownish-gold body with thin pale bars and long snout. Found hiding in sargassum (p. 24). Rarely seen on reefs.



SPOTTED DRUM (ADULT)

(*Equetus punctatus*) 25 cm / 10 in

Dark bars: across eye, from nape to pelvic fin and from tip of dorsal fin to tail base. Rear body and tail spotted.



Although very similar, especially the juveniles, the key to telling these species apart is to look at the markings on the head: the Spotted Drum has a single black spot on its snout, the Jackknife Fish has a thin black line down its snout and the Highhat has a black bar between its eyes.



SPOTTED DRUM (JUVENILE)

(*Equetus punctatus*)

Black bar extends onto highly elongated dorsal fin and tail. Leading edge of pelvic fin white. Black spot on snout.



SPOTTED DRUM (INTERMEDIATE)

(*Equetus punctatus*)

As the fish grows the trailing dorsal fin and tail shorten and small white spots begin to appear towards the tail.



HIGHHAT (JUVENILE)
(*Pareques acuminatus*)

Elongated dorsal fin, similar in length to tapering tail.
No vertical bars on head. Black band between eyes.



HIGHHAT (INTERMEDIATE)
(*Pareques acuminatus*)

Black stripes along side. Black dorsal fin edged in white
on both sides. Black band remains between eyes.



HIGHHAT (ADULT)

(*Pareques acuminatus*) 25 cm / 10 in

Body has numerous black and white longitudinal stripes.
The shortened dorsal fin loses its white leading edge.



JACKKNIFE FISH (JUVENILE)

(*Equetus lanceolatus*)

Elongated dorsal and pelvic fins. Often yellowish color.
Pelvic fin usually held downward. Small line down snout.



JACKKNIFE FISH (INTERMEDIATE)

(*Equetus lanceolatus*)

Leading edge of pelvic fin is black (compare to white in
Spotted Drum). Tail remains pointed, with no spots.



JACKKNIFE FISH (ADULT)

(*Equetus lanceolatus*) 30 cm / 12 in


Distinctive black line down snout. Two black bars on
head, through the eye and from the nape onto pelvic fin.



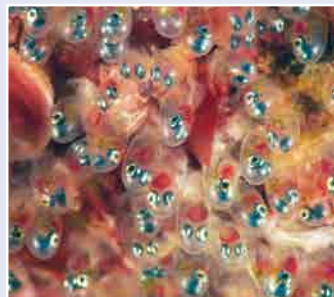
SERGEANT MAJOR

(*Abudefduf saxatilis*) 23 cm / 9 in

Five black body bars tapering towards white abdomen.
Bright yellow patch on upper body. Widely forked tail.

 Most damselfish species are highly territorial, maintaining small gardens of turf algae that they defend aggressively, pecking away at anything that gets too close to their food supply.

Sergeant Majors have a more varied diet, including small crustaceans and fish, and often school on shallow reef-tops or congregate at favorite nesting sites. Like all damselfishes, they care for their eggs after they have been laid. A female can lay thousands of tiny purple eggs in a dense patch and males will usually take on a darker blue coloration while they tend these nests, swimming back and forth chasing off scavengers looking for an easy meal. They swim close to the incubating eggs and wave their fins across them to keep them aerated, also inspecting and picking away the slow-growing or unhealthy eggs in the batch. This ensures that the rest have the best possible chance for survival and the eggs hatch after about one week. Small juveniles quickly develop the distinctive body bars.





SERGEANT MAJOR (MALE)
(*Abudefduf saxatilis*)

While protecting egg patches, males take on a darker bluish color, staying closer to the reef and the eggs.



NIGHT SERGEANT

(*Abudefduf taurus*) 25 cm / 10 in

Brownish body with five dark body bars. Long upper lip. Rounded tail lobes. Found on shallow rocky inshores.



BEAUGREGORY (JUVENILE)
(*Stegastes leucostictus*)

Bright yellow with bluish-black on upper head and body. Black spot at rear of dorsal fin (not continuing onto body).



BEAUGREGORY

(*Stegastes leucostictus*) 12 cm / 5 in

Blue spots on top of head form lines on snout. Thin blue edge on anal fin. Black spot outlined in blue on dorsal fin.



THREESPOT DAMSELFISH (JUVENILE)
(*Stegastes planifrons*)

Yellow to golden with a large black spot at upper body and onto dorsal fin. Smaller black spot at upper tail base.



THREESPOT DAMSELFISH

(*Stegastes planifrons*) 13 cm / 5 in

Brown to tan. Dark spot at base of pectoral fin. Usually a dark spot at upper tail base. Yellow crescent above eye.



YELLOWTAIL DAMSELFISH (JUVENILE)

(Microspathodon chrysurus)

Dark blue with iridescent blue spots over entire body and head. Bright blue borders on fins. Translucent tail.



There can be a lot of variation in the markings and colors of each damselfish species, especially among the juveniles which are often brightly colored with false eyespots. When mating or defending a patch of eggs, male damselfish can display contrasting territorial color patterns as well.



YELLOWTAIL DAMSELFISH

(Microspathodon chrysurus) 21 cm / 8 in

Dark body and fins. Scattered iridescent blue spots on head and upper back. Pale or often bright yellow tail.



YELLOWTAIL DAMSELFISH (VARIATION)

(Microspathodon chrysurus)

Yellowish-brown to tan body. No yellow tail and only occasional blue spots on body. Found in the shallows.



LONGFIN DAMSELFISH (JUVENILE)
(*Stegastes diencaeus*)

Blue-ringed black spot on dorsal fin continues onto body. Dotted lavender lines from snout over gray-brown head.



LONGFIN DAMSELFISH

(*Stegastes diencaeus*) 12 cm / 5 in

Black to dark gray. Both dorsal and anal fins extend well beyond tail base. Bright blue leading edge on anal fin.



DUSKY DAMSELFISH (JUVENILE)
(*Stegastes adustus*)

Blue-ringed spots on dorsal fin and tail base. Orange area extends from snout to upper body and dorsal fin.



DUSKY DAMSELFISH

(*Stegastes adustus*) 10 cm / 4 in

Dorsal and anal fins extend only to the end of the tail base. Thin dark border on lower edge of the anal fin.



BICOLOR DAMSELFISH (VARIATION)
(*Stegastes partitus*)

A common variation of *S. partitus*: white body with darker dorsal and anal fins, tail base and tail. Yellow pectoral fin.



BICOLOR DAMSELFISH

(*Stegastes partitus*) 10 cm / 4 in


Dark patch from snout onto dorsal fin. Pale to white body towards tail. Yellow front abdomen. Patterns vary greatly.



COCOA DAMSELFINH

(*Stegastes xanthurus*) 12 cm / 5 in

Dark body, often with yellow abdomen, anal fin and tail.
Dark scale borders form lines. Often a dark spot at tail base.

 Not all damselfishes are farming herbivores. The chromis on the following page are in the damselfish family but are planktivores, plucking bits of food out of the current. They can often be found further out into the water column and at greater depths than their herbivorous cousins.



COCOA DAMSELFINH (JUVENILE)

(*Stegastes xanthurus*)

Blue-ringed spot on dorsal fin extends onto body. Rows of evenly spaced blue dots on grayish-brown upper body.



DAMSELFINH (COURTING MALE)

Males change color when it is time to mate, taking on bold, often contrasting colors to attract females, making identification difficult (pictured: Longfin Damselfish).



BROWN CHROMIS

(*Chromis multilineata*) 20 cm / 8 in

Yellow on tips on dorsal fin and tail lobes. Small white spot behind dorsal fin. Large dark spot at pectoral base.



BLUE CHROMIS

(*Chromis cyanea*) 15 cm / 6 in

Bright blue to purplish body. Darker upper body from snout to tail base. Deeply forked tail with black borders.



YELLOWTAIL REEFFISH

(*Chromis enchrysurus*) 10 cm / 4 in

Blue V on snout. Tail, rear dorsal, anal and pelvic fins yellow. White abdomen and tail base. Florida/N Mexico.



PURPLE REEFFISH

(*Chromis scottii*) 10 cm / 4 in

Dark blue to bluish-gray body. Bright blue spots on head and blue crescent above eye. Found on deeper reefs.



SUNSHINEFISH (JUVENILE)

(*Chromis insolata*)

Yellow upper body and bright blue or purple abdomen. Bright blue line runs from snout and over top of eye.



SUNSHINEFISH

(*Chromis insolata*) 16 cm / 6.4 in

Grayish-brown with a white abdomen and anal fin. Wide yellow margins on rear edges of dorsal fin and tail.



BLUE TANG

(*Acanthurus coeruleus*) 36 cm / 14 in

Blue body, sometimes with faint thin wavy blue lines.
May lighten or darken. Small yellow spine at tail base.



Surgeonfish are essential to a healthy reef ecosystem. As relentless herbivores they keep algae levels in check, allowing sunlight to reach the corals. There is safety in numbers. Blue Tang are found in large schools and other surgeonfish species often join them for protection, as seen above.



BLUE TANG (JUVENILE)

(*Acanthurus coeruleus*)

Bright yellow circular body with bright blue margins on dorsal and anal fins. Gold iris circled in bright blue.



SURGEONFISH (SETTLING STAGE)

(*Acanthurus* sp.)

Transparent body and a silvery head. The larvae begin to settle on the reef in summer. All species look similar.



DOCTORFISH (VARIATION)

(*Acanthurus chirurgus*)

Sometimes lighter blue with a white bar at tail base.
(Note: *A. tractus* may also display the white bar.)



DOCTORFISH

(*Acanthurus chirurgus*) 34 cm / 13 in

A series of darker curved bars (may be faint) start behind pectoral fin, which is edged in a darker blue.



DOCTORFISH (VARIATION)

(*Acanthurus chirurgus*)

The body bars may be very faint, looking similar to *A. tractus*. The pectoral fin is always dark-edged.



OCEAN SURGEONFISH

(*Acanthurus tractus*) 37 cm / 15 in

Uniformly blue or greenish body with no bars. Blue lines radiate behind eye. Always yellow-orange pectoral fin.



OCEAN SURGEONFISH (JUVENILE)

(*Acanthurus tractus*)

Uniformly blue or greenish body with no dark bars. May also display a white bar at the base of the tail.



OCEAN SURGEONFISH (VARIATION)

(*Acanthurus tractus*)

White bar at tail base may be faint or absent. Unlike similar *A. chirurgus*, pectoral fin is yellow-orange.



BANDED BUTTERFLYFISH

(*Chaetodon striatus*) 20 cm / 8 in

Silvery white with thin black chevron lines. Four black bars: through eye, behind pectoral, above anal and at tail base.



Butterflyfish have a tall narrow body that allows them to get deep into crevices to hide from their predators and to get at more hidden prey like tiny crustaceans and worms. The long snout and jaws have also been adapted to pinch off individual coral polyps, making them one of the few fishes that will feed directly on living corals. They are often seen swimming in mated pairs and may stay with the same partner for life.

Butterflyfish offer a perfect example of how color patterns on a fish can confuse predators. Most have a bold vertical bar passing through the eye, obscuring it so it becomes harder to tell which end is which, or in which direction the fish will try to escape. Some butterflyfish have a false eyespot near the tail, adding to the confusion. At night, when it is more vulnerable to predators, the Spotfin Butterflyfish (on the right) will go one step further, displaying an extra eyespot. If an attack does come, it's far better to get a bite on the tail than on the head.





SPOTFIN BUTTERFLYFISH (JUVENILE)
(*Chaetodon ocellatus*)

Similar to the adult but with a longer yellow pelvic fin. Second black bar from soft dorsal fin towards anal fin.



SPOTFIN BUTTERFLYFISH
(*Chaetodon ocellatus*) 20 cm / 8 in

White body with yellow fins. Single black bar through eye to dorsal fin. Small black spot on rear dorsal fin edge.



FOUREYE BUTTERFLYFISH (JUVENILE)
(*Chaetodon capistratus*)

Two black spots towards tail, each circled in white. Two diffuse dark body bars. Black bar through eye.



FOUREYE BUTTERFLYFISH
(*Chaetodon capistratus*) 15 cm / 6 in

Large black spot near tail base, circled in white. Thin chevron stripes. Yellow-edged black bar through eye.



LONGSNOOT BUTTERFLYFISH
(*Prognathodes aculeatus*) 10 cm / 4 in

Distinctively elongated snout. Orange bar above eye. Dorsal fins are darker, pelvic and anal fins are yellow.



REEF BUTTERFLYFISH
(*Chaetodon sedentarius*) 18 cm / 7 in

Dark yellow body above and almost white below. Wide dark bar at tail base, running onto dorsal and anal fins.



QUEEN ANGELFISH

(*Holacanthus ciliaris*) 45 cm / 1.5 ft

Blue with yellow scale edges. Spot on nape, circled in pale blue. Blue on lips and edge of gill cover. Bright yellow tail.



Angelfish are found in monogamous pairs and they show a great degree of loyalty to their partners, staying together for life. They spend most of the day swimming and foraging as a pair, usually staying within sight of each other. If one angelfish wanders off for a longer period of time, when it returns the pair will swim in close circles around each other, strengthening their bond again. At night they always return to the same den to sleep. They ignore other species of angelfish in their territory, but if a pair of the same species comes too close they attack and chase them off.

Angelfish are some of the larger fishes on the reef and are ignored by most carnivores. Only larger predators such as groupers or sharks will attempt one as prey, but the tall narrow bodies make them difficult to catch and swallow. This shape also allows them to fit into the narrower crevices on the reef for protection.

They are highly territorial fish. They spend some time every day on the same cleaning stations but they chase off juveniles of the same species that try to set up new cleaning stations within their territory.





QUEEN ANGELFISH (JUVENILE)
(*Holacanthus ciliaris*)

Yellow snout, front abdomen and pelvic fin. Dark band across eye. Three curved blue body bars. Yellow tail.



QUEEN ANGELFISH (INTERMEDIATE)
(*Holacanthus ciliaris*)

Yellow body with bright blue edges on dorsal and anal fins. Blue bars on face. All bars fade over time.



BLUE ANGELFISH (JUVENILE)
(*Holacanthus bermudensis*)

Yellow snout, front abdomen and pelvic fin. Middle body bar is straight (compare to all curved bars in *H. ciliaris*).



BLUE ANGELFISH

(*Holacanthus bermudensis*) 45 cm / 1.5 ft
Bluish-gray body with pale scale edges. Yellow edge on pectoral and tail. Long yellow tips on dorsal and anal fins.



ROCK BEAUTY (JUVENILE)
(*Holacanthus tricolor*)


Golden-yellow body with large diffuse black blotch, often containing a bright blue circle. Blue ring around eye.



ROCK BEAUTY

(*Holacanthus tricolor*) 25 cm / 10 in
Black body with yellow head and abdomen. Dorsal and anal fins usually edged with red. Black lips. Yellow tail.



 Up to 70% of an angelfish's diet is sponges. They especially love the fleshy insides of the Leathery Barrel Sponge (p. 65) but their jaws aren't strong enough to break open the tough skin. Hawksbill Turtles (p. 447) also favor this sponge and with their specially adapted beak, opening the sponge is no problem. Divers will often find angelfish of different species following turtles to their meals and picking up the scraps that fall from the turtle's beak. If a large group of angelfish is found gathered over the reef, it could mean there is a turtle feeding somewhere in the area.



Rather than hiding from the larger predators, juvenile angelfish try to make themselves more noticeable, fluttering back and forth just off the bottom of the sea floor, showing off their bright colors. They are trying to attract larger fish that will come in to get themselves cleaned. The juvenile will eat the tiny parasites and dead skin that collect on their hosts.

On the left, a tiny Queen Angelfish is cleaning a squirrelfish and a Gray Angelfish is cleaning a butterflyfish. Even the Rock Beauty starts out life as a cleaner, seen here removing parasites from the side of a large Green Moray.

By making themselves useful to the reef, these vulnerable juveniles get an easy meal and also avoid being preyed upon by the larger fishes.





FRENCH ANGELFISH (JUVENILE)
(*Pomacanthus paru*)

Three yellow body bars. Blue spots on pelvic and anal fins. Rounded tail with yellow margin, forming an oval.



FRENCH ANGELFISH

(*Pomacanthus paru*) 40 cm / 16 in

Dark gray with yellow scale edges. Yellow around eye, at base of pectoral fin and on tips of dorsal and anal fins.



GRAY ANGELFISH (JUVENILE)
(*Pomacanthus arcuatus*)

Three yellow bars. Blue spots on pelvic and anal fins. Squared tail with transparent margin (compare: *P. paru*).



GRAY ANGELFISH

(*Pomacanthus arcuatus*) 60 cm / 2 ft

The largest of the angelfishes. Gray body with pale edges on scales. Yellow inside pectoral fin. Squared tail.



FLAMEBACK ANGELFISH

(*Centropyge aurantonotus*) 5 cm / 2 in

Dark blue body. Yellow to orange head, continuing onto nape and dorsal fin. Blue ring around eye. SE Caribbean.



CHERUBFISH

(*Centropyge argi*) 5 cm / 2 in

Dark blue body. Yellow to orange face. Blue ring around eye. Bright blue margins on fins. Often on deeper reefs.



QUEEN TRIGGERFISH

(*Balistes vetula*) 50 cm / 20 in

Greenish-purple with yellow lower head and chest. Two bright blue lines on cheek. Black lines radiate from eye.



Triggerfish get their name from the pointed dorsal spine that can be raised and locked into position to deter larger fish from attacking. This spine can also help to lodge them into the reef while they are sleeping or hiding from predators. They feed on small crustaceans, worms and snails.



QUEEN TRIGGERFISH (JUVENILE)

(*Balistes vetula*)

Yellowish-gray body with thin dark diagonal stripes and small spots. Usually found close to shelter on the reef.



QUEEN TRIGGERFISH (INTERMEDIATE)

(*Balistes vetula*)

Dark lines on body fade and the tips of dorsal fin and tail become elongated. Can darken to hide from predators.



OCEAN TRIGGERFISH

(*Canthidermis sufflamen*) 65 cm / 26 in

Uniformly gray body. Black spot at pectoral base. Small black eyes. Short spike under abdomen, before anal fin.



SARGASSUM TRIGGERFISH

(*Xanthichthys ringens*) 25 cm / 10 in

Purple body with rows of small black spots. Three dark lines on cheek. White patch above eye. Tail edged in red.



BLACK DURGON (VARIATION)

(*Melichthys niger*)

Paler white breeding, often displaying bright green, orange and blue markings, especially on the face.



BLACK DURGON

(*Melichthys niger*) 50 cm / 20 in

Dark blue to black with pale blue-white lines along base of dorsal and anal fins. Blue lines radiate above eye.



GRAY TRIGGERFISH (JUVENILE)

(*Balistes capricus*)

Dark gray body with bright blue spots and lines. Rarely on reefs, often found taking shelter under floating debris.



GRAY TRIGGERFISH

(*Balistes capricus*) 63 cm / 25 in

Pale gray to olive-brown body with small blue spots (also on fins and tail). Darker brown blotches on upper body.



SCRAWLED FILEFISH

(*Aluterus scriptus*) 110 cm / 43 cm

Yellowish to tan body covered with bright blue lines and black spots. Long first dorsal spine. Distinctively long tail.



Filefish have small mouths with only a few short teeth in front, but they do have very strong jaws. They are able to feed on marine life that is poisonous to most other fishes, such as hydroids, sponges and tunicates. Some can even bite into and digest the stinging fire corals (p. 73).



UNICORN FILEFISH

(*Aluterus monoceros*) 76 cm / 30 in

Small mouth on elongated snout, distinctively concave below and convex above. Pale dorsal and anal fins.



ORANGE FILEFISH

(*Aluterus schoepfii*) 60 cm / 24 in

Gray body with many small orange spots. Eye well below steep concave head profile. Distinctively upturned mouth.



WHITESPOTTED FILEFISH (VARIATION)
 (*Cantherhines macrocerus*)

White spots are not always present. Pale midbody bar extends towards abdomen. Often found in mated pairs.



WHITESPOTTED FILEFISH

(*Cantherhines macrocerus*) 40 cm / 16 in
 Orange body, often with white spots. Pairs of hooked orange spines at tail base, larger in males. Black tail.



ORANGESPOTTED FILEFISH

(*Cantherhines pullus*) 20 cm / 8 in

Dark brown with pale stripes and small orange spots on body. Orange lines on head. Shy, found close to the reef.



PYGMY FILEFISH

(*Stephanolepis setifer*) 20 cm / 8 in
 Pale tan body with dark longitudinal lines of broken spots and dashes. Often found hiding in sargassum (p. 24).



FRINGED FILEFISH

(*Monacanthus ciliatus*) 13 cm / 5 in

Large dewlap on abdomen. Pronounced hump behind dorsal spine. Color varies, usually a white patch on side.



SLENDER FILEFISH

(*Monacanthus tuckeri*) 9 cm / 3.5 in
 Sharply elongated snout. White reticulated body pattern. Can change colors quickly to match surrounding corals.



WEB BURRFISH

(*Chilomycterus antillarum*) 30 cm / 1 ft

Yellowish body with honeycomb pattern of dark lines. Large dark patches on back and sides. Fleshy spines held erect.



When threatened, pufferfish can gulp in large amounts of seawater to inflate their bodies, making them difficult to swallow. This will usually put off an attack but some pufferfishes also have sharp spines. They may have high levels of a deadly poison called tetrodotoxin (see p. 174).



BRIDLED BURRFISH

(*Chilomycterus antennatus*) 30 cm / 1 ft

Elongated dark patch above pectoral fin and another at base of dorsal fin. Spots on body and tail (not on fins).



SPOTFIN BURRFISH

(*Chilomycterus reticulatus*) 75 cm / 2.5 ft

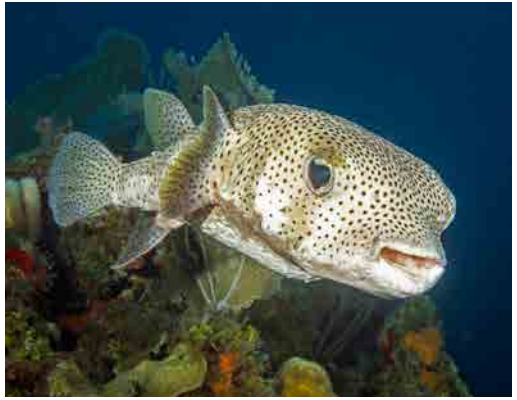
Large black spots on body and all fins. Wide dark bars on head and body. Fewer spines than the Porcupinefish.



BALLOONFISH

(*Diodon holocanthus*) 60 cm / 2 ft

Olive to brown with small black spots. Brown bar through eye. Dark patches above pectoral and at dorsal base.



PORCUPINEFISH

(*Diodon hystrix*) 90 cm / 3 ft

Light gray with a paler abdomen. Small black spots on body and fins. No dark bars (compare: *C. reticulatus*).



MARBLED PUFFER

(*Sphoeroides dorsalis*) 18 cm / 7 cm

Gray to light tan body with diffuse dark blotches behind pectoral fin. Two distinctive skin flaps on upper back.



BANDTAIL PUFFER

(*Sphoeroides spengleri*) 15 cm / 6 in

Grayish-brown body. Distinctive row of black spots from chin to tail base. Pale abdomen. Two black bars on tail.



CHECKERED PUFFER

(*Sphoeroides testudineus*) 30 cm / 1 ft

Pale cream body with dark patches and spots. White abdomen. Bright orange eyes. Shallow sandy areas.



SHARPNOSE PUFFER

(*Canthigaster rostrata*) 12 cm / 5 in

Dark upper body, paler below. Blue lines on snout and radiating from eye. Black borders on a yellowish tail.



SMOOTH TRUNKFISH

(*Lactophrys triqueter*) 30 cm / 1 ft

Dark body with small pale spots. Dark patches at base of dorsal and pectoral fins. Pale honeycomb pattern on side.



Trunkfish have a hard skeleton of bony plates. They have a varied diet and are adapted to make the most of the food available on a reef. Their hard jaws can break open the raw limestone of the reef to get at invertebrates, or they can blow away layers of sand to get at hidden prey.



A newly settled or juvenile trunkfish is colloquially known as “the pea” because of its small size. They are very difficult to spot, not only because they are so tiny but also because of the habitats in which they choose to hide. In mid to late summer, look closely into small crevices and within the folds of lettuce corals (p. 74) to find these elusive fish. They have tails, but they are translucent, undeveloped and curled flat around the back of the body. They use tiny fan-shaped pectoral fins to move themselves about.





SMOOTH TRUNKFISH (VARIATION)
(*Lactophrys triqueter*)

When courting, Smooth Trunkfish gather in small groups, showing a more vibrant yellowish to golden color.



SMOOTH TRUNKFISH (JUVENILE)
(*Lactophrys triqueter*)

From about the size of a pea. Dark body with pale yellow or white spots. The tail is tucked in against the body.



SPOTTED TRUNKFISH (JUVENILE)
(*Lactophrys bicaudalis*)

From about the size of a pea. Yellowish body with black or brown spots. The tail is tucked in against the body.



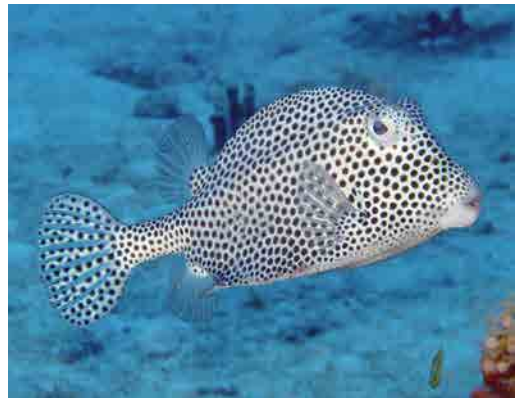
SPOTTED TRUNKFISH (INTERMEDIATE)
(*Lactophrys bicaudalis*)

Yellow or white body with dense black spots. Often dark bands running between eyes and across upper back.



SPOTTED TRUNKFISH (VARIATION)
(*Lactophrys bicaudalis*)

A rare pattern where spots join to form irregular lines. Dark spot at base of dorsal fin. Ventral spine present.



SPOTTED TRUNKFISH

(*Lactophrys bicaudalis*) 48 cm / 19 in
White to yellowish body and tail, covered in dense black spots. White area around mouth. Sharp ventral spine.



BUFFALO TRUNKFISH

(*Lactophrys trigonus*) 55 cm / 22 in

Tan to greenish-gray body, sometimes with light blue spots.
Distinctive rounded hump on back. Elongated tail base.



Juvenile cowfishes can be very colorful. When they are very small, the horns that give them their characteristic look have yet to develop. They can easily be confused with the juvenile Buffalo Trunkfish (below) that comes in many different colors including orange, yellow, gray or even black.



BUFFALO TRUNKFISH (JUVENILE)

(*Lactophrys trigonus*)

Tiny bright orange body, almost spherical. Scattered small white spots. Also found in light gray to solid black.



BUFFALO TRUNKFISH (VARIATION)

(*Lactophrys trigonus*)

Juveniles and young adults may hide in lagoons, taking on a golden or greenish color to blend in with seagrass.



HONEYCOMB COWFISH (VARIATION)
(*Acanthostracion polygonius*)

Bright blue or brown blotches as camouflage in the shallows. The skin can pale or darken to help blend in.



HONEYCOMB COWFISH
(*Acanthostracion polygonius*) 50 cm / 20 in
Greenish-blue with honeycomb pattern. Sharp spines in front of eye and facing backwards at lower-rear body.



HONEYCOMB COWFISH (JUVENILE)
(*Acanthostracion polygonius*)

Deep orange to yellow with small black spots. Horns not present in smallest individuals and develop as they grow.



SCRAWLED COWFISH
(*Acanthostracion quadricornis*) 55 cm / 22 in
Blue lines and spots over a yellowish body. Continuous blue line runs over abdomen, from snout to tail base.



SCRAWLED COWFISH (VARIATION)
(*Acanthostracion quadricornis*)

At night or while resting, the skin darkens and the blue lines become brighter, breaking up their general outline.



SCRAWLED COWFISH (JUVENILE)
(*Acanthostracion quadricornis*)

Orange to yellow body with blue to black spots, often elongated. Long sharp spines over eyes and near tail.



SMALLMOUTH GRUNT

(*Haemulon chrysargyreum*) 23 cm / 9 in

Silvery-gray with broad yellow stripes across head, continuing to tail base. All fins and tail are bright yellow.



Grunts are some of the most common fish found on a Caribbean reef and tend to stick together in large schools in the shallows during the day. Many retreat to the lagoons at night to continue foraging. They feed mostly on smaller fish, worms, shrimps and other crustaceans hiding close to the reef.

Male grunts will sometimes compete with one another for territory and the right to mate, by swimming rapidly together and seeing who has the largest set of jaws. This ritualized fighting behavior decides which is the dominant fish without actually wounding another member of the school.

Grunts school for protection, both as juveniles and as adults. The long bright stripes along their bodies distract predators: shifting lines in a school of grunt makes it difficult for the eyes of a predator, like a Barracuda, to lock on to one specific individual when attacking.





FRENCH GRUNT (JUVENILE)
(*Haemulon flavolineatum*)

Most juvenile grunts have dark stripes and tail base spot. Only the French Grunt has diagonal body stripes as well.



FRENCH GRUNT

(*Haemulon flavolineatum*) 30 cm / 1 ft

Silvery body with thin yellow stripes (straight above and diagonal below the lateral line). All fins are yellow.



TOMTATE

(*Haemulon aurolineatum*) 25 cm / 10 in

Silvery with bronze-yellow stripe from snout to tail base, another along upper side. Large black spot at tail base.



BLUESTRIPED GRUNT

(*Haemulon sciurus*) 45 cm / 1.5 ft

Bright blue stripes on a yellowish body. Black tail and rear dorsal fin. Pectoral, pelvic and anal fins are yellow.



CAESAR GRUNT

(*Haemulon carbonarium*) 40 cm / 16 in

Coppery stripes down a pale silvery body. Dark pelvic, rear dorsal and anal fins. Black tail. Bright blue eyes.



WHITE GRUNT

(*Haemulon plumieri*) 53 cm / 21 in

Yellow head with thin blue stripes. Oblique lines on body formed by blue and yellow spots on scales. Pale fins.



PORKFISH

(*Anisotremus virginicus*) 35 cm / 14 in

Two wide black bars on head, one through eye and another behind gill cover to below pectoral fin. All fins are yellow.



A healthy coral reef is actually a very noisy place, and a big part of the sounds of the reef comes from the grunt species. They can make a loud grunting noise by rubbing together a set of specialized teeth in the back of their throats when feeding or in reaction to nearby predators.



BLACK MARGATE

(*Anisotremus surinamensis*) 76 cm / 30 in

Large diffuse black patch behind pectoral fin. All fins are black. Found in or near the entrances to caves.



WHITE MARGATE

(*Haemulon album*) 79 cm / 31 in

Uniformly silver body with no distinctive markings. Long sloping forehead. Small white iris. Often in sandy areas.



SAILORS CHOICE

(*Haemulon parra*) 41 cm / 16 in

Silvery-gray. Dark spots on scales form thin diagonal stripes. Tail and fins are dark, except for a pale pectoral.



SPANISH GRUNT

(*Haemulon macrostomum*) 45 cm / 18 in

Thin black stripes on upper body. Wide stripe from eye. Nape and upper back yellow. Yellow saddle at tail base.



STRIPED GRUNT

(*Haemulon striatum*) 28 cm / 11 in

Five dark yellow to bronze stripes along upper body. Pale abdomen. Blunt snout. Schools on deeper reefs.



COTTONWICK

(*Haemulon melanurum*) 35 cm / 14 in

Wide black stripe runs from dorsal onto black tail, which is edged in white. Faint yellow body stripes. Pale fins.



BONNETMOUTH

(*Emmelichthys atlanticus*) 15 cm / 6 in

Metallic yellow-green upper body with dark stripes. Orange snout. Two dorsal fins are widely separated.




BOGA

(*Haemulon vittatum*) 23 cm / 9 in

Metallic bluish-green upper body with dark stripes. Yellow snout. Two dorsal fins are connected near base.



 Parrotfish are some of the most colorful and iconic fishes in the Caribbean. Their name comes from a set of fused front teeth, used for scraping algae from the reef. They go through radical changes as they grow. Most parrotfish are female, in a drab initial color stage, and they live in tight social groups called harems. Each harem is controlled by a single dominant male. This is the terminal stage, when a parrotfish becomes the most vibrantly colored and active. If the male dies, the strongest female can turn into a male and take over the harem. Males can sometimes even mimic females to hide and mate in neighboring harems.

Parrotfish are the largest and some of the most important herbivores in a reef ecosystem, keeping levels of algae in check. As they feed on the marine plants covering the reef, some coral gets scraped off and eaten too. Up to 75% of a parrotfish's gut contents is inorganic material. After the plant nutrients are digested out of this mixture, the rest is expelled as a fine sand. A single adult parrotfish can pass up to 450 kg of sand a year. Many of the white sandy beaches so popular in the Caribbean are actually made up of material that has already passed through a parrotfish.





PRINCESS PARROTFISH (INITIAL)
(*Scarus taeniopterus*)

Brown upper body and pale towards abdomen. Three pale stripes. Yellowish fins. Dark brown borders on tail.



PRINCESS PARROTFISH (TERMINAL)
(*Scarus taeniopterus*) 30 cm / 1 ft

Blue with pink scale edges. Short yellow stripe behind pectoral. Pink stripes on tail borders (compare: *S. iseri*).



PRINCESS PARROTFISH (JUVENILE)
(*Scarus taeniopterus*)

Pale body with three dark stripes from snout to tail base. Diffuse dark borders on tail (compare: *S. iseri* juvenile).



STRIPED PARROTFISH (TERMINAL)
(*Scarus iseri*) 27 cm / 11 in

Dark upper body and pale abdomen. Stripe through eye becomes yellow/red behind pectoral. Pinkish-blue tail.



STRIPED PARROTFISH (JUVENILE)
(*Scarus iseri*)

Pale body with three dark stripes from snout to tail base. Reddish eyes. Clear tail (compare: *S. taeniopterus*).



STRIPED PARROTFISH (INITIAL)
(*Scarus iseri*)

Dark upper body with white stripes. Yellow patch on snout. Dotted line above abdomen. Clear tail, no borders.



RAINBOW PARROTFISH (TERMINAL)

(*Scarus guacamaia*) 1.2 m / 4 ft

The largest of the parrotfishes. Orange-bronze head and green body. Large scales. Orange tail with pointed lobes.



The Rainbow Parrotfish can grow to be over 20 kg and live for up to 16 years. Their massive jaws can easily be heard by divers as they make contact with the reef while feeding. They depend on mangroves as nurseries and their numbers are steadily decreasing as these habitats are cut down.



MIDNIGHT PARROTFISH (TERMINAL)

(*Scarus coelestinus*) 77 cm / 2.5 ft

Dark blue body and fins. Paler blue facial markings. Large beak often covered in algae. Pointed lobes on tail.



RAINBOW PARROTFISH (INITIAL)

(*Scarus guacamaia*)

Pale pinkish head. Body with large green scales edged in pink to orange. Straight edge on pink to orange tail.



BLUE PARROTFISH (INITIAL)
(*Scarus coeruleus*)

Pale blue body with a faint area of yellow just above eye to upper body. Dorsal fin edged in brighter blue.



BLUE PARROTFISH (TERMINAL)
(*Scarus coeruleus*) 1.2 m / 4 ft

Uniformly light blue body with gray area on cheek. All fins are blue. Distinctively blunt head. Small pale blue eyes.



BLUE PARROTFISH (JUVENILE)
(*Scarus coeruleus*)

Large yellow patch from snout, over nape and upper body onto front of dorsal fin. Pale abdomen. Yellow iris.



REDBAND PARROTFISH (TERMINAL)
(*Sparisoma aurofrenatum*) 28 cm / 11 in

Greenish body, reddish towards abdomen. Red stripe from mouth to beneath eye. Dark spot above gill cover.



REDBAND PARROTFISH (JUVENILE)
(*Sparisoma aurofrenatum*)

Striped brown body with pale abdomen. Distinctive large black blotch at top corner of gill cover. Eyes reddish.



REDBAND PARROTFISH (INITIAL)
(*Sparisoma aurofrenatum*)

Solid greenish-blue body. All fins are pink to red, except a clear pectoral. Often a white spot at upper tail base.



Parrotfish are only active in the daytime. Some species, such as the Queen Parrotfish above, not only find a safe crevice in the reef at night, but also secrete a thin membrane of mucus around their bodies, like a sleeping bag. This membrane is thought to mask their scent from predators that are more active at night, such as Spotted Morays and Nurse Sharks. It also keeps the fish free from parasites (p. 265) that could attach themselves more easily to a sleeping victim. In the morning they wriggle out of these thin protective coverings and continue grazing.



Most parrotfish simply change color to blend in with the reef and rely solely on this camouflage to get safely through the night. They have specialized color cells called chromatophores, with pigments that can be pressed up against their skin to change their color, sometimes dramatically. A mottled pattern will help to break up their outline. They can blend in with the bright colors of corals, sponges or even the white of the sand, hiding in plain sight.





QUEEN PARROTFISH (INITIAL)
(*Scarus vetula*)

Brownish-gray upper body with diffuse white stripe from pectoral to lower tail base. No markings on a gray face.



QUEEN PARROTFISH (TERMINAL)
(*Scarus vetula*) 50 cm / 20 in

Distinctive bright blue to green markings around mouth and eye. Two pink stripes, top and bottom on a blue tail.



GREENBLOTCH PARROTFISH (INITIAL)
(*Sparisoma atomarium*)

Uniformly red body and tail. Pearly spots above pale abdomen. Red dorsal fin, yellow pelvic and anal fins.



GREENBLOTCH PARROTFISH (TERMINAL)
(*Sparisoma atomarium*) 15 cm / 6 in

Greenish-brown upper body. Short blue bar at upper corner of gill cover. Dark spot at pectoral base. Red eye.



REDTAIL PARROTFISH (INITIAL)
(*Sparisoma chrysopterym*)

Mottled reddish-gray body. Dark spot at pectoral base. Yellowish tail with pale base and faintly barred borders.



REDTAIL PARROTFISH (TERMINAL)
(*Sparisoma chrysopterym*) 45 cm / 1.5 ft

Bluish-green body, pale abdomen. Dark spot at base of pectoral, large blue blotch behind it. Red crescent on tail.



STOPLIGHT PARROTFISH (TERMINAL)

(*Sparisoma viride*) 64 cm / 25 in

Green body with pink stripes on cheek. Pink edge on gill cover, yellow spot at top corner. Yellow markings on tail.



The Stoplight Parrotfish offers a perfect example of how dramatically parrotfishes can change as they grow from juveniles to an initial phase and finally to a more colorful terminal phase. Without knowing their complex life cycle, each phase could easily be mistaken for a separate species.



STOPLIGHT PARROTFISH (INITIAL)

(*Sparisoma viride*)

Pale head and dark upper body. Some scales pale in center. Solid red abdomen. Fins and tail edge are red.



STOPLIGHT PARROTFISH (JUVENILE)

(*Sparisoma viride*)

Brown body with three rows of white spots. Pink towards abdomen. Dark spot at gill cover. White bar at tail base.



YELLOWTAIL PARROTFISH (INITIAL)
(*Sparisoma rubripinne*)

Pinkish-gray body with dark edges on scales. Yellow towards tail base, yellow tail. Red pelvic and anal fins.



YELLOWTAIL PARROTFISH (TERMINAL)
(*Sparisoma rubripinne*) 48 cm / 19 in

Uniformly greenish body. Dorsal, anal and pelvic fins tinged with red. Black spot at base of pectoral. Red eye.



BUCKTOOTH PARROTFISH (INITIAL)
(*Sparisoma radians*)

Greenish-brown upper body and creamy white below. Often green blotch behind gill cover, onto pectoral base.



BUCKTOOTH PARROTFISH (TERMINAL)
(*Sparisoma radians*) 20 cm / 8 in

Greenish-brown upper body and pale abdomen. Blue and red stripes from jaw to eye. Black pectoral fin base.



BLUELIP PARROTFISH (INITIAL)
(*Cryptotomus roseus*)

Tan to reddish body with two white stripes, above and below eye to tail base. Pale mottling on darker areas.



BLUELIP PARROTFISH (TERMINAL)
(*Cryptotomus roseus*) 13 cm / 5 in

Thin pink stripes from eye to snout. Pink spots behind gill cover continue into a wide pink stripe to tail base.



Hogfish are the largest members of the wrasse family and have strong jaws that are adapted to feed on a wide variety of foods. Sharp teeth near the front are used to hold prey like small fish and crabs. Two large bony plates at the back of the jaws are used for crushing shells. They sift through sand, digging to find clams and scallops which are then crushed up and swallowed. Sand and pieces of shell are pumped out through the gills. Some species of hogfish begin life as cleaners, working at cleaning stations in tandem with cleaning gobies (p. 290) to help remove a fish's larger parasites.



HOGFISH (TERMINAL)

(*Lachnolaimus maximus*) 90 cm / 3 ft

Dark forehead and stripe on upper body. Three long thin dorsal spines. Yellow pectoral fins. Black bar on tail.



HOGFISH (INTERMEDIATE)

(*Lachnolaimus maximus*)

Black spot behind rear of dorsal fin. Often mottled with reddish-brown. Can darken or lighten while swimming.



SPOTFIN HOGFISH (JUVENILE)

(*Bodianus pulchellus*)

Uniformly yellow body with two dark brown lines running back from eye. Black spot on leading edge of dorsal fin.



SPOTFIN HOGFISH (INTERMEDIATE)

(*Bodianus pulchellus*)

Reddish to dark purple head and front body. Yellow towards tail and fin tips. Two dark stripes from red eye.



SPANISH HOGFISH (JUVENILE)

(*Bodianus rufus*)

Blue or purple upper body. Yellow abdomen, fins and tail. Acts as a cleaner species, removing larger parasites.



SPOTFIN HOGFISH (TERMINAL)

(*Bodianus pulchellus*) 29 cm / 11 in

Red body with diffuse white stripe from mouth onto side. Large yellow patch from end of dorsal fin onto upper tail.



SPANISH HOGFISH (INTERMEDIATE)

(*Bodianus rufus*)

Reddish-purple upper body to rear of dorsal fin. Yellow abdomen, sides and tail. A forager, no longer cleaning.



SPANISH HOGFISH (TERMINAL)

(*Bodianus rufus*) 50 cm / 20 in

Upper body bluish-gray to purple. Snout, lower body and tail base yellow. Yellow tips on dorsal and anal fins.



GREEN RAZORFISH (TERMINAL)

(*Xyrichtys splendens*) 15 cm / 6 in

Thin pink to orange bars on face. Rounded tail with a pale red edge. Commonly one or two dark midbody spots.



Razorfish belong to the wrasse family and feed on small crustaceans and other invertebrates. Both their bodies and their behavior are adapted to life in open sandy areas, where there is no place for most fish to hide. Razorfish get their name from their sharp foreheads. When they are startled, they use these foreheads to dart headfirst, straight down into the sand, where they can remain for up to half an hour. They keep small patches of sand loosened and ready to dart into, slowly moving closer to them when danger approaches.

All razorfish are born female (the initial phase). If they reach the terminal phase they become males and begin to dominate the rest of the group, which is called a “harem.”

Juvenile razorfish settle onto sandy areas from a planktonic larval stage and remain close to the bottom. They hide near tufts of algae, which their bodies mimic in both shape and color. They add to this deception by using an irregular style of swimming that mimics a small piece of algae just drifting across the sand.





GREEN RAZORFISH (VARIATION)
(*Xyrichtys splendens*)

Green Razorfish are highly variable in color, especially as juveniles. From red to green or even a solid yellow.



GREEN RAZORFISH (INITIAL)
(*Xyrichtys splendens*)

Pink to reddish with dark edges on scales. Pale blue bars on lower head. Often a blue spot on dorsal fin. Red iris.



ROSY RAZORFISH (INITIAL)
(*Xyrichtys martinicensis*)

Pearly-white head. Gray to pink body with no markings. Large white patch on abdomen, containing thin red bars.



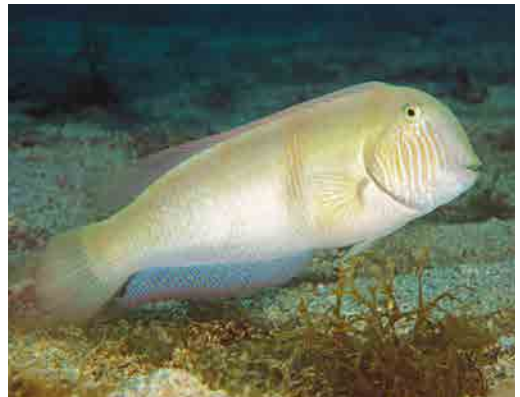
ROSY RAZORFISH (TERMINAL)
(*Xyrichtys martinicensis*) 15 cm / 6 in

Yellow cheek and gill cover with thin blue bars. Vertical blue lines on scales. Darkened pectoral base. Red iris.



PEARLY RAZORFISH (INITIAL)
(*Xyrichtys novacula*)

Pale gray to pinkish body with pearly highlights on the scales, especially along abdomen. Steep forehead.



PEARLY RAZORFISH (TERMINAL)
(*Xyrichtys novacula*) 25 cm / 10 in

The largest of the razorfishes. Blue lines under a small eye. Blunt forehead. Often a single diffuse body bar.




BLUEHEAD WRASSE (TERMINAL)

(*Thalassoma bifasciatum*) 15 cm / 6 in

Dark blue head and a bright green body, separated by a white bar edged in black. Reddish borders on tail.



 Bluehead Wrasse are one of the most abundant fishes in the Caribbean. They may act as cleaners, eating parasites off other fish, as well as taking plankton out of the water. In their initial yellow phase they can either be male or female, depending on the needs of the general population of a given reef. Bluehead Wrasse are often seen mating for hours, in what is known as a “spawning rise.” Females are followed and surrounded by dozens of males, all eager to fertilize her eggs. When the female is ready, she puts on a quick burst of speed and races towards the surface, releasing her eggs. The strongest and fastest males keep up with her and release their sperm. In this way the eggs get fertilized by the strongest males and they can be more widely distributed in the current. Large males, in the colorful terminal phase, guard these spawning sites. Sergeant Majors often hover above this activity to feed on the eggs.



BLUEHEAD WRASSE (JUVENILE)
(*Thalassoma bifasciatum*)

Dark upper body with yellow stripe. White abdomen. Large black spot at front of dorsal fin. Other fins clear.



BLUEHEAD WRASSE (INITIAL)
(*Thalassoma bifasciatum*)

The yellow phase, with broken midbody stripe. Two purple spots behind eye, one in front. Acts as a cleaner.



RAINBOW WRASSE (JUVENILE)
(*Halichoeres pictus*)

Yellow to orange upper body and white abdomen. Brown line (darker near snout) runs through eye to tail base.



RAINBOW WRASSE (TERMINAL)
(*Halichoeres pictus*) 13 cm / 5 in

Blue stripes on snout and above eye. Reddish dorsal fin. Dark blotch at tail base, orange stripe onto center of tail.



CLOWN WRASSE (JUVENILE)
(*Halichoeres maculipinna*)

Striped upper body and white abdomen. Thin white or yellow body stripes meet to form a V on the forehead.



CLOWN WRASSE (TERMINAL)
(*Halichoeres maculipinna*) 15 cm / 6 in

Large dark midbody blotch. Yellow face with red lines on cheek and around eye. Colors and patterns may vary.



YELLOWHEAD WRASSE (TERMINAL)

(*Halichoeres garnoti*) 30 cm / 12 in

Bright yellow head and front body. Black bar joins onto black dorsal stripe. Thin black lines radiate behind eye.



Creole Wrasse are often found in large schools in areas with a stronger current, feeding on plankton as it drifts over the reef. Other wrasses are more solitary foragers but can often be seen following other fishes, scavenging off the debris that is churned up. Wrasse are all carnivores but are closely related to the herbivorous parrotfishes.

Most wrasse are females, but may grow to reach a colorful terminal male stage where they take over the responsibility of guarding a harem. These males fight over the rights to females in a territory by opening their jaws towards each other in an aggressive display. When the dominant male dies the largest female in the harem can change both its color and its sex, known as the “supermale” stage. This process takes as little as one week. In other species, such as the Blackear Wrasse, males gather in congregations known as “leks” where they display their most vivid colors, trying to impress the females.





YELLOWHEAD WRASSE (JUVENILE)

(*Halichoeres garnoti*)

Yellow body. Brilliant blue stripe, outlined in black, runs from behind eye to tail base. All fins are translucent.



YELLOWHEAD WRASSE (INITIAL)

(*Halichoeres garnoti*)

Blue stripe fades and upper body becomes bluish-brown from nape onto dorsal fin. Pale yellow to white abdomen.



BLACKEAR WRASSE (JUVENILE)

(*Halichoeres poeyi*)

Blocky markings with stripes over head, or rarely a solid yellow-green. Bright yellow eye. Found in seagrass beds.



BLACKEAR WRASSE (TERMINAL)

(*Halichoeres poeyi*) 20 cm / 8 in

Greenish body. Orange and black spot behind eye. Pink stripes on snout/gill cover. Dark spot behind dorsal fin.



CREOLE WRASSE (INITIAL)

(*Clepticus parrae*)

Uniformly purple to lavender body. Darker patch on snout. Hints of red on abdomen in larger individuals.



CREOLE WRASSE (TERMINAL)

(*Clepticus parrae*) 30 cm / 12 in

Dark purple head and upper body. Rear abdomen, tail base and anal fin yellowish-orange. Light purple tail.



PUDDINGWIFE (TERMINAL)

(*Halichoeres radiatus*) 51 cm / 20 in

Orange-brown body, often with wide diffuse white bar behind pectoral. Blue lines from eye. Blue edges on fins.



Despite its strange common name, the Puddingwife is one of the more aggressive wrasses found on a Caribbean reef. The males will actively round up their females for protection when larger fish are in the area, watching over them until the threat moves away again.



PUDDINGWIFE (JUVENILE)

(*Halichoeres radiatus*)

Yellow-orange with gray bars and stripe from eye to tail base. Large dark ocellus on dorsal extends onto body.



PUDDINGWIFE (INITIAL)

(*Halichoeres radiatus*)

Orange-brown body, often white blotches on upper back from nape to tail base. Blue lines from eye and on cheek.



YELLOWCHEEK WRASSE (INITIAL)
(Halichoeres cyanocephalus)

Pale blue. Yellow upper-body stripe from snout to tail base. White abdomen. Broad yellow margins on tail.



YELLOWCHEEK WRASSE (TERMINAL)
(Halichoeres cyanocephalus) 30 cm / 1 ft

Yellow head and dorsal stripe onto tail. White abdomen. Blue stripe on snout. Two wavy lines back from eye.



YELLOWCHEEK WRASSE (JUVENILE)
(Halichoeres cyanocephalus)

Two ocellated blue spots, one at rear base of dorsal fin, one at tail base. Yellow patch from snout tip onto dorsal.



SLIPPERY DICK (TERMINAL)
(Halichoeres bivittatus) 22 cm / 9 in

Colors vary from pale to greenish. Two spots, black and pink, at upper corner of gill cover. Dark stripe to tail base.



SLIPPERY DICK (JUVENILE)
(Halichoeres bivittatus)

Tan upper body and pale abdomen. Dark brown stripe from eye to tail base. Ocellated blue spot on dorsal fin.



SLIPPERY DICK (INITIAL)
(Halichoeres bivittatus)


Colors variable. Often white with line of dark spots from eye to tail base. Sometimes fainter line above abdomen.



FAIRY BASSLET

(*Gramma loreto*) 8 cm / 3.2 in

Head and front of body purple, golden-yellow towards tail.
Dark spot on front of dorsal fin. Dark stripe through eye.

 Fairy Basslets are planktivores, plucking their food out of the water column. Usually found in areas of moderate current, such as along walls, they always orientate their abdomens to the reef and are commonly seen hanging upside down under ledges, waiting for their food to drift by.



BLACKCAP BASSLET

(*Gramma melacara*) 11 cm / 4.4 in

Purple body with dark patch from snout to dorsal. Often thin gold lines on head. Usually deeper than *G. loreto*.



YELLOWCHEEK BASSLET

(*Gramma linki*) 8 cm / 3.2 in

Bluish-gray body with rows of yellow spots. Wavy yellow lines across cheek and onto gill cover. Bright yellow iris.



THREELINE BASSLET

(*Lipogramma trilineata*) 4 cm / 1.5 in

Yellow body with three short blue lines, from snout and behind eye. Found on deeper reefs, often under ledges.



CAVE BASSLET

(*Liopropoma mowbrayi*) 9 cm / 3.5 in

Uniformly red body. Black bar on tail, edged in white. Black spot on tip of rear dorsal fin. Yellow patch on snout.



CANDY BASSLET

(*Liopropoma carmabi*) 5 cm / 2 in

Orange with purple stripes. Black ocellus on rear dorsal fin. Ocellated spots on tail not joined (compare: *L. rubre*).



PEPPERMINT BASSLET

(*Liopropoma rubre*) 6 cm / 2.4 in

Striped body. Dark spots on both rear dorsal and anal fins. Spots on tail are joined. All spots edged in white.



BANTAM BASS

(*Parasphyraenops incisus*) 7 cm / 2.8 in

Pale brown body with three brown stripes. Black spot on first dorsal fin, bordered in white. Schools over drop-offs.



SCHOOL BASS

(*Schultzea beta*) 15 cm / 6 in

Pale, with brown stripes and small white spots. Yellowish tail. Often found among Masked/Glass Gobies (p. 295).



LANTERN BASS

(*Serranus baldwini*) 7.5 cm / 3 in

Head and upper front of body mottled brown. Dark and orange bars on pale abdomen. Dark spots on tail base.



Small basses are related to their larger cousins, the groupers, but they have a more varied diet. Some are planktivores but most feed on small crustaceans, worms and other invertebrates that are found closer to the reef floor. These types are most common over areas of sand or rubble.



TOBACCOFISH

(*Serranus tabacarius*) 22 cm / 9 in

White body with broad orange stripe from chin to tail base. Dark saddles on upper body. Dark stripes on tail.



TWINSPOBASS

(*Serranus flaviventris*) 8 cm / 3.2 in

Pale brown with dark brown spots and bars. Two dark ocelli at tail base. Large dark blotch on front of dorsal fin.



HARLEQUIN BASS (JUVENILE)

(*Serranus tigrinus*)

Pale tan with faint body bars. Dark stripe on snout. Row of irregular white blotches from behind eye to a clear tail.



HARLEQUIN BASS

(*Serranus tigrinus*) 12 cm / 5 in

Irregular dark body bars over a white upper body and yellow lower body. Pointed snout. Dark spots on tail.



BELTED SANDFISH

(*Serranus subligarius*) 10 cm / 4 in

Reddish-brown. Black bars onto dorsal fin. Dark stripe through eye. Dark spots on tail. Florida/Gulf of Mexico.



ORANGEBACK BASS

(*Serranus annularis*) 9 cm / 3.5 in

Upper head and body dark orange. Two orange squares just behind eye, circled in black. Orange bar on snout.



SNOW BASS

(*Serranus chionaraia*) 6.5 cm / 2.5 in

Brown head and upper body. Large white patch on front of abdomen. Blue stripes on face. Spots on tail borders.



CHALK BASS

(*Serranus tortugarum*) 8 cm / 3.2 in

Bluish-gray to pinkish-brown with darker bars across upper body. Pale blotches on side. Translucent fins.



GREATER SOAPFISH

(*Rypticus saponaceus*) 35 cm / 14 in

Grayish-brown body with white blotches and a pointed snout. Rounded fins and tail. Often found lying on its side.



Soapfish get their name from a unique defense mechanism, a frothy poison that is released from their skin when they are threatened, putting off predators. The Greater Soapfish is commonly found lazing on its side under ledges and overhangs on walls and deeper reefs.



SPOTTED SOAPFISH

(*Rypticus subbifrenatus*) 18 cm / 7 in

Brown with dark spots behind eye and only few spots on body. Fins match body color. Found in shallow rubble.



SLOPE SOAPFISH

(*Rypticus carpenteri*) 10 cm / 4 in

Yellowish-brown with black spots. Spots on yellow-edged tail, dorsal and anal fins. Shy, often hides under ledges.



SAND PERCH

(*Diplectrum formosum*) 30 cm / 1 ft

Orange-brown with pale blue stripes. Darker bars while resting. Blue markings on snout (compare: *D. bivittatum*).



DWARF SAND PERCH

(*Diplectrum bivittatum*) 25 cm / 10 in

Pale, with dark stripes on upper body. Dark bar from snout, through eye to tail base. Blue markings on cheek.



REEF BASS

(*Pseudogramma gregoryi*) 7.5 cm / 3 in

Reddish-brown body with large dark patch on gill cover. Dark tail, rear dorsal and anal fin. Shy, hides in crevices.



BLACK SEABASS

(*Centropristis striata*) 66 cm / 2 ft

Gray to bluish-black. White spots on scales form stripes. Thin blue lines on cheek in juveniles. Found in Florida.



MUTTON HAMLET

(*Alphestes afer*) 33 cm / 13 in

Mottled reddish-brown body, sometimes with faint bands. Dark brown and pale spots. Red eye set close to snout.



CREOLEFISH

(*Paranthias furcifer*) 40 cm / 16 in


Color varies from red to purple. Yellowish abdomen. Red spot at pectoral base. Usually on outer edges of reefs.



SHY HAMLET

(*Hypoplectrus guttavarius*) 15 cm / 6 in

Dark brown body with yellow head and fins. Black spot on snout, outlined in blue. Blue spots around eye and cheek.

 Hamlets are carnivores, closely related to groupers. They have the same large mouths for gulping in prey and swallowing it whole. Their bodies are taller and their snouts are narrower than groupers, helping them to hunt for small prey that hides in the coral. One exception is the Indigo Hamlet, on the right, with his favorite prey being the Blue Chromis (p. 355). Their similar color allows them to get closer to this prey and have a greater chance of making a successful strike. This hunting tactic is called aggressive mimicry. Indigo Hamlets are an interesting case; they may have evolved to adaptively resemble their prey, or it may simply be a case of a learning a successful hunting behavior.



Butter Hamlets have learned to follow the similar-looking Four-eye Butterflyfish that feeds on worms and zoanthids. By foraging with this non-threatening fish they are able to get closer to unsuspecting prey, called facultative mimicry.



GOLDEN HAMLET

(*Hypoplectrus gummigutta*) 13 cm / 5 in
 Head, body and fins golden-yellow. Black spot on snout, outlined in blue. Blue spots/lines around eye and cheek.



INDIGO HAMLET

(*Hypoplectrus indigo*) 16 cm / 6.5 in
 Pale blue body with dark blue bars. Blue bar under eye and across gill cover. Pale dorsal and anal fins and tail.



MASKED HAMLET

(*Hypoplectrus providencianus*) 13 cm / 5 in
 Dark bar below eye. Dark spot or saddle at tail base. Blue pelvic and dark pectoral fins. Dark borders on tail.



BUTTER HAMLET

(*Hypoplectrus unicolor*) 13 cm / 5 in
 Uniformly pale yellow body. Large black spot or saddle at tail base. Black spot on snout (sometimes absent).



TAN HAMLET

(*Hypoplectrus randallorum*) 13 cm / 5 in
 Brown body with yellowish abdomen. Black spots on snout, pectoral base and usually at tail base. Yellow iris.



YELLOWBELLY HAMLET

(*Hypoplectrus aberrans*) 13 cm / 5 in
 Upper head, back and front dorsal fin bluish-brown. Rest of body and fins yellow. Blue lines and spots on head.



Hamlets have a bizarre love life; there are no separate males or females. They mate every evening at sunset, usually with the same partner on the same patch of reef. They spawn repeatedly as it grows darker, swapping sexual roles in a rare behavior known as egg trading. First the acting female shows its willingness by flaring its fins and shaking its head. The acting male opens his jaws wide as he embraces his partner, rising up into the water column to spawn. Minutes later they swap these sexual roles and spawn again.



Hamlets are able to interbreed with other species of hamlet if their preferred partner is not available, giving rise to hybrid individuals that can be difficult to identify. Adding to the confusion, there can be a great deal of variation within each hamlet species, as seen in the three examples of the common Barred Hamlet below. The bright yellow mating couple above are also Barred Hamlets.





BLACK HAMLET

(*Hypoplectrus nigricans*) 15 cm / 6 in

Black, gray or dark brown body and fins. May display tinges of blue. Pectoral fins are usually solid black.



BARRED HAMLET

(*Hypoplectrus puella*) 17 cm / 7 in

Dark bar under eye and from nape to pectoral. Wide dark bar below front of dorsal fin. Small blue spots on snout.



BLUE HAMLET

(*Hypoplectrus gemma*) 13 cm / 5 in

Bright blue head, body and front of dorsal and anal fins. Clear tail with black borders. Found in Florida and Cuba.



BLUELIP HAMLET

(*Hypoplectrus affinis*) 13 cm / 5 in

Reddish-brown body, paler near abdomen. Pale blue on mouth and front of anal fin. Blue pelvic fins. Orange iris.



HAMLET (SMALL JUVENILE)

All juvenile hamlets appear similar, with a pair of black and white spots at the tail base. They are commonly found taking shelter in shallow reef areas and lagoons.



HAMLET (LARGE JUVENILE)

As they grow, the spots at the tail base begin to fade, the coloration of each individual becomes more apparent and soon the hamlet is ready to find a mate.




GRAYSBY

(*Cephalopholis cruentata*) 33 cm / 13 in

Red spots on body and all fins. Four black or white spots below dorsal fin. Juveniles have white stripe on snout.



 Graysbys, like all the groupers, are ambush predators. About 75% of their diet is fish, with the Brown Chromis (p. 355) being their favorite choice of prey. Juveniles tend to swim closer to the shelter of the reef and their main diet is shrimps.

They are born as females and reach sexual maturity after around two years. After five years they may become male and take over a small harem, usually just three females. They are highly territorial and the competition for both food and females can be fierce.

Coneys are able to change color to blend in with the surrounding reef as they wait to ambush their prey. The small blue spots help to break up their outlines. Wide oversized mouths open rapidly, sucking prey into their jaws, where small pointed teeth hold it in place. Prey is not bitten or chewed, but swallowed whole.





CONEY (BICOLOR VARIATION)

(*Cephalopholis fulva*) 40 cm / 16 in

Two black spots on lower lip. Two black spots on upper tail base, behind dorsal fin. Can quickly change to red.



CONEY (RED VARIATION)

(*Cephalopholis fulva*)

Most common color variation in deeper water. Tiny bright blue and black spots speckle a reddish-brown body.



CONEY (JUVENILE)

(*Cephalopholis fulva*)

Light brown with dark upper body. White spots above tail base and often below dorsal fin. Black spots on lower lip.



CONEY (GOLDEN VARIATION)

(*Cephalopholis fulva*)

A rare color variation, usually found on shallower reefs. Uniformly bright yellow body with few bright blue spots.



ROCK HIND

(*Epinephelus adscensionis*) 62 cm / 25 in

Reddish-brown spots on body and fins. Three dark saddles below dorsal fin and another above tail base.



RED HIND

(*Epinephelus guttatus*) 76 cm / 30 in

Large red spots over a lighter body. Dorsal, pelvic and anal fins and tail all have black margins edged in white.



GOLIATH GROUPE

(*Epinephelus itajara*) 2.5 m / 8.2 ft

The largest of the groupers. Gray to greenish body with pale blotches. Small dark spots cover head and pectoral.



As large predators, groupers are crucial to a healthy reef ecosystem. According to the IUCN's Endangered Species List, Goliath Groupers are listed as vulnerable, with their numbers decreasing. Severe overfishing of the Nassau Grouper now has them listed as a critically endangered species.



NASSAU GROUPE

(*Epinephelus striatus*) 1 m / 3.2 ft

Five dark brown to red body bars. Distinctive large black saddle on upper tail base. Gold-tipped dorsal spines.



NASSAU GROUPE (VARIATION)

(*Epinephelus striatus*)

May take on a dramatic two-tone pattern during the mating season (similar to Yellowmouth Grouper, p. 411).



TIGER GROUPE (JUVENILE)

(Mycteroperca tigris)

Bright yellow body with an irregular dark brown stripe running from lower lip, through eye to near tail base.



TIGER GROUPE

(Mycteroperca tigris) 1 m / 3.2 ft

Head and body covered with orange-brown spots. Thin oblique white bars. Pale lines or spots on abdomen.



TIGER GROUPE (VARIATION)

(Mycteroperca tigris)

During mating season or when distressed, the head pales and the bars darken in a show of aggression.



YELLOWFIN GROUPE

(Mycteroperca venenosa) 1 m / 3.2 ft

Pale lines outline irregular dark blotches on upper body, wavy lines on flank. Broad yellow margin on pectoral fin.



YELLOWFIN GROUPE (VARIATION)

(Mycteroperca venenosa)

Upper body and abdomen may become dark orange to reddish onto tail. Dorsal fin has patches of red and gold.



YELLOWFIN GROUPE (VARIATION)

(Mycteroperca venenosa)

Less common red color variation of Yellowfin Grouper, usually found in deeper waters or when threatened.



Groupers are the largest members of the bass family and can live for up to 30 years. As top-level predators, their role in the reef ecosystem is to keep other fish species in check. However, as shark populations are in decline in the Caribbean, more groupers are taking valuable herbivores off the reef, as seen above. As ambush predators they must lie in wait for their meals and this makes them vulnerable to parasites. Groupers can spend up to eight hours a day at cleaning stations. They are solitary hunters, only coming together once a year to compete for the right to reproduce.



Most groupers start out as females and, only much later in life, they may turn into males. With the high mortality rate on a reef, this means there will always be more fertile females available for spawning, and only the strongest males will reproduce. Every year in early spring, groupers will travel great distances to congregate at traditional spawning sites. As the sun goes down, females dart up into the water column and release their eggs. Frantic males race to catch up in an attempt to fertilize these eggs. These rare spawning aggregation sites need to be protected; they are highly vulnerable to unscrupulous overfishing.



SCAMP

(*Mycteroperca phenax*) 107 cm / 3.5 ft

Light brown body with rectangular brown spots (paw prints) arranged in stripes. Dusky tail with pale margin.



RED GROUPER

(*Epinephelus morio*) 125 cm / 4 ft

Reddish-brown body with scattered white spots. White blotches behind eye and sometimes on snout. Dark tail.



YELLOWMOUTH GROUPER (JUVENILE)

(*Mycteroperca interstitialis*)

Sharply defined dark brown upper body and white lower body. White stripe from chin to bright yellow dorsal fin.



YELLOWMOUTH GROUPER

(*Mycteroperca interstitialis*) 84 cm / 2.8 ft

Brownish-gray with small brown spots on upper head and body. Yellow on mouth. White margin on pectoral fin.



YELLOWMOUTH GROUPER (VARIATION)

(*Mycteroperca interstitialis*)

May take on a more dramatic two-tone pattern during the mating season (similar to Nassau Grouper, p. 408).



BLACK GROUPER

(*Mycteroperca bonaci*) 1.5 m / 5 ft

Grayish-brown to black body with darker rectangular patches. Thin pale margins on pectoral fin and tail.



Schoolmasters are one of the most common snappers in the Caribbean and are often found mixed in with other schools in the shallows. They may display faint body bars and can be confused with the solitary Dog Snapper, but Schoolmasters lack the distinctive white bar below the eye. The similar Mutton Snapper always has a dark spot below the dorsal fin. Juvenile Schoolmasters are usually found in lagoons or hiding under docks. Large adults can be seen sheltering under deeper ledges and overhangs and they have distinctively long canine teeth for holding on to their prey.



SCHOOLMASTER

(*Lutjanus apodus*) 67 cm / 2.2 ft

Olive to yellowish body, pale near abdomen. May display body bars. Yellow fins and tail. Prominent canine teeth.



SCHOOLMASTER (JUVENILE)

(*Lutjanus apodus*)

Distinctive lines on snout, brown through eye and blue below it. Smaller juveniles often display dark body bars.



YELLOWTAIL SNAPPER (JUVENILE)
(*Ocyurus chrysurus*)

Juveniles appear similar to adults, but with a deeper yellow body stripe. Found in lagoons and seagrass beds.



YELLOWTAIL SNAPPER
(*Ocyurus chrysurus*) 86 cm / 2.8 ft

Bright yellow line from snout, through eye to a widely forked yellow tail. Large pale yellow spots on upper body.



LANE SNAPPER (JUVENILE)
(*Lutjanus synagris*)

Yellow stripes may be faint or absent. Dark midbody spot, often bordered in white. Yellow pelvic and anal fins.



LANE SNAPPER
(*Lutjanus synagris*) 71 cm / 2.4 ft

Silvery body with several yellow stripes. Often a single dark spot under soft dorsal fin (may lighten or disappear).



BLACKFIN SNAPPER (JUVENILE)
(*Lutjanus buccanella*)

Pale gray to light brown body. Yellow patch on upper tail base and a yellow tail. Black spot at base of pectoral fin.



BLACKFIN SNAPPER
(*Lutjanus buccanella*) 75 cm / 2.5 ft


Red body. Yellow patch on upper tail base. Black spot at base of pectoral fin. Yellow iris. Found on deeper reefs.



DOG SNAPPER

(*Lutjanus jocu*) 1.3 m / 4.2 ft

Olive to bronze with a distinctive white triangle under eye.
Often blue spots on gill cover. May show faint body bars.

 The Mutton Snapper (below) is a favorite of fishermen and considered a threatened species in many areas of the Caribbean. Top predators that can live for up to 40 years, they feed on fish in the water column as well as on smaller invertebrates like crabs and mollusks on the reef floor.



MUTTON SNAPPER

(*Lutjanus analis*) 94 cm / 3 ft

Distinctive small black spot on upper flank. Faint blue line under eye. Reddish tail and pectoral fin. Red iris.



MUTTON SNAPPER (VARIATION)

(*Lutjanus analis*)

Near the bottom they take on a darker barred pattern that acts as camouflage while foraging for prey.



BLACK SNAPPER

(*Apsilus dentatus*) 65 cm / 2 ft

Solid dark blue body and fins. High, curving lateral line. Found on deeper reefs and headlands with current.



MAHOGANY SNAPPER

(*Lutjanus mahogoni*) 48 cm / 1.6 ft

Silvery olive to pale pinkish body with sloping forehead. Thin dark or bright red margins on tail and dorsal fin.



MAHOGANY SNAPPER (JUVENILE)

(*Lutjanus mahogoni*)

Pale body with a single dark midbody spot. Stripe from snout to top of gill cover. Pelvic and anal fins are pale.



MAHOGANY SNAPPER (VARIATION)

(*Lutjanus mahogoni*)

In deeper water or while resting, body becomes uniformly reddish, with darker red edges on tail and dorsal fin.



GRAY SNAPPER

(*Lutjanus griseus*) 66 cm / 2.2 ft

Uniformly gray to olive body with a sloping forehead. May display darker bar through eye. Rounded anal fin.



CUBERA SNAPPER

(*Lutjanus cyanopterus*) 1.6 m / 5.2 ft


The largest of the snappers. Heavy body with large head and thickened lips. May display contrasting body bars.



CREVALLE JACK

(*Caranx hippos*) 1.2 m / 4 ft

Large blunt head. Silvery body with yellowish anal fin and tail. High lateral line. Black spot on upper gill cover.

 Jacks are fast silvery fishes, large carnivores that can reach 35 kg in the case of the Crevalle Jack (above). As juveniles, jacks will often form tight schools for protection, or they may darken their bodies and stay very close to larger fishes in a tactic called “shadow hunting.”



PERMIT

(*Trachinotus falcatus*) 1.5 m / 5 ft

Tall silvery body, often with yellow blotch on abdomen and dusky oval patch behind dark pectoral. Dark anal fin.



PALOMETA

(*Trachinotus goodei*) 50 cm / 1.6 ft

Distinctively elongated black dorsal and anal fins. Four thin body bars. Often found schooling in the shallows.



YELLOW JACK

(*Carangoides bartholomaei*) 1 m / 3.2 ft

Silvery body with a yellowish tint. All fins and tail are pale yellow. Often yellow marks around mouth and eye.



BAR JACK

(*Caranx ruber*) 69 cm / 2.2 ft

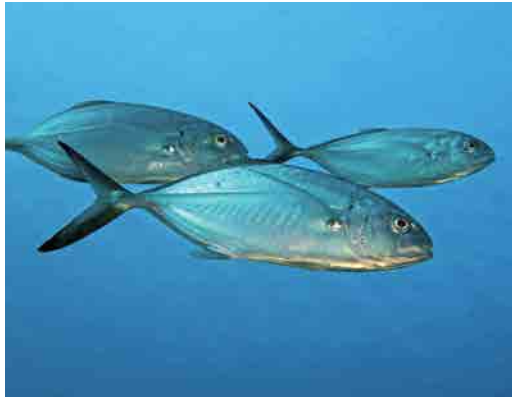
Silvery with bluish upper body. Dark blue to black stripe from snout, over upper body and onto lower tail lobe.



BLACK JACK

(*Caranx lugubris*) 1 m / 3.2 ft

Silvery to olive body with steep forehead. Spot on upper gill cover. Dark scutes to tail base. Found on deep reefs.



BLUE RUNNER

(*Caranx crysos*) 76 cm / 2.5 ft

Silvery-blue with olive upper body. Small dark spot on upper gill cover. Tail lobes with distinctively black tips.



COTTONMOUTH JACK

(*Uraspis secunda*) 50 cm / 1.6 ft

Rounded silvery to dusky body, sometimes with faint bars. Low triangular dorsal fin and tail, often darker gray.



RAINBOW RUNNER

(*Elagatis bipinnulata*) 1.8 m / 6 ft

Silvery to olive upper body and yellow tail. Two blue stripes, with yellow in between, from eye to tail base.



HORSE-EYE JACK

(*Caranx latus*) 1 m / 3.2 ft

Silvery body with large eyes and yellow tail. Line of dark scutes to tail base. Usually a dark patch on lower pectoral.



Some species of jack continue schooling even after they have grown to maturity, such as the Horse-eye Jack. These can be found in schools of hundreds of individuals. They prefer to hunt in areas of stronger current, surrounding schools of planktivores such as the Creole Wrasse (p. 393).



LOOKDOWN

(*Selene vomer*) 48 cm / 1.6 ft

Narrow silvery body with bluish tinge. Very steep head profile. Long dorsal and anal fins. Prefers shallow areas.



AFRICAN POMPANO

(*Alectis ciliaris*) 1.5 m / 5 ft

Long filaments from behind dorsal and anal fins (shorter with age). Small diffuse dark spot on upper gill cover.



ALMACO JACK

(*Seriola rivoliana*) 1.6 m / 5.2 ft

Silvery body with prominent dark fins. Oblique dark bar from snout, through eye to dorsal fin. Mostly pelagic.



GREATER AMBERJACK

(*Seriola dumerili*) 1.9 m / 6.2 ft

The largest of the jacks. Oblique dark bar from snout, through eye to dorsal fin base. Pale dorsal and anal fins.



ROUND SCAD

(*Decapterus punctatus*) 36 cm / 1.2 ft

Elongated silvery body. A line of small black dots along curved part of lateral line. Large scutes near dusky tail.



REDTAIL SCAD

(*Decapterus tabl*) 51 cm / 1.6 ft

Slender silvery body with a bluish stripe. Red dorsal and pectoral fins and tail. Pelagic, may school on deep reefs.



MACKEREL SCAD

(*Decapterus macarellus*) 44 cm / 1.4 ft

Bluish-green upper body. Often a yellow midbody stripe. No spots on lateral line. Dark spot on upper gill cover.



BIGEYE SCAD

(*Selar crumenophthalmus*) 30 cm / 1 ft

Silvery-blue body. Large eyes (larger than snout length). Mostly pelagic, but may form dense inshore schools.



GREAT BARRACUDA

(*Sphyraena barracuda*) 2 m / 6.5 ft

Silvery-gray upper body with oblique bars. Pointed snout and protruding lower jaw. Dorsal and anal fins close to tail.



One of the most common and successful piscivores on the reef, barracudas have been around for over 50 million years. They can weigh up to 40 kg and live for up to 15 years. They can darken their bodies while at rest or at cleaning stations.

Barracudas are near the top of the food chain, so a dangerous toxin called ciguatera can accumulate in their flesh. Fisherman in the Caribbean have developed a trick for detecting ciguatera: leaving some of the meat near a colony of ants. If the ants feed on the meat, they know it will also be safe for humans.

Barracudas use short bursts of speed (almost 60 km/h) to catch their prey. Their large eyes are best suited for hunting in the low-light conditions around dusk and dawn. They prefer to hunt in areas of current, where their streamlined bodies give them a distinct advantage. Rows of razor-sharp teeth can slice, while longer teeth are used to keep prey from escaping.





GREAT BARRACUDA (JUVENILE)

(*Sphyaena barracuda*)

Juvenile Barracudas are often found close to the surface in shallow areas of seagrass. Eyes are relatively large.



SENNET

(*Sphyaena borealis*) 50 cm / 1.6 ft

Elongated silvery body with faint yellow body stripes. Two dorsal fins are widely separated. Usually schooling.



DOLPHINFISH (MAHI-MAHI)

(*Coryphaena hippurus*) 2.3 m / 7.5 ft

Metallic bluish-green with golden abdomen. Males have distinctively pronounced forehead. Found in open ocean.



LITTLE TUNNY

(*Euthynnus alletteratus*) 1.2 m / 4 ft

Rounded silvery body with narrow tail base. Oblique black stripes on upper back. Dark spots behind pectoral.



KING MACKEREL

(*Scomberomorus cavalla*) 1.8 m / 6 ft

Silvery with iridescent blue sheen. Distinctive lateral line drops sharply down below dorsal fin. Deeply forked tail.



CERO

(*Scomberomorus regalis*) 89 cm / 3 ft


Silvery to greenish-blue body. Rows of spots above and below a broken orange midbody stripe. Dark dorsal fin.



TRUMPETFISH

(*Aulostomus maculatus*) 1 m / 3.2 ft

Elongated body with pale stripes and scattered spots. Eyes set far back from elongated snout. Color is highly variable.

 Trumpetfish are highly adaptable hunters, with the ability to change color depending on their surroundings. The background color can be bright yellow in the sunlit shallows, or a dark reddish-brown in deeper waters. They can even turn their heads blue to hunt from inside a school of Blue Tangs. The skin also contains chromatophores that can darken the spots along the body for extra camouflage or for their mating displays. Trumpetfish are closely related to seahorses, with the male incubating eggs in a brood pouch on his belly.



Trumpetfish often swim vertically, hiding among sea rods and rope sponges to blend in, with their mouths facing their prey below them on the reef. With their long thin bodies, Trumpetfish offer a very small profile as they approach, then use the powerful suction of their jaws to swallow a fish whole. Trumpetfish may also engage in “shadow hunting,” darkening their bodies and swimming alongside a non-threatening fish species, to get as close as possible to their prey before striking.



TRUMPETFISH (JUVENILE)

(*Aulostomus maculatus*)

Juvenile Trumpetfish can often be found hiding in long octocorals, with their colors matching their surroundings.



BLUESPOTTED CORNETFISH

(*Fistularia tabacaria*) 2 m / 6.4 ft

Elongated body with rows of pale blue spots. Tail with long trailing filament. Often found in shallow seagrass.



HOUNDFISH (JUVENILE)

(*Tylosurus crocodilus*)

Bulbous lobe under lower jaw and distinctive red patch on upper tail. May form small schools under sargassum.



HOUNDFISH

(*Tylosurus crocodilus*) 1.2 m / 4 ft

Bluish-green upper body, silvery below. Dark lateral keel at tail base. Lower tail lobe is longer than upper lobe.



REDFIN NEEDLEFISH

(*Strongylura notata*) 45 cm / 1.5 ft

Distinctive reddish to orange highlights on dorsal and anal fins and lobes of tail. Long dark bar on gill cover.



BALLYHOO HALFBEAK

(*Hemiramphus brasiliensis*) 41 cm / 16 in

Bluish upper body. Elongated lower jaw with a bright orange or red tip. Upper lobe of tail is orange or yellow.



SILVERSIDES

(Atherinidae, Clupeidae, Engraulidae)

Collections of small silvery schooling fishes with forked tails. Often mixed together in the shallows and near caves.



Silverside schools consist of herrings, anchovies and several different species that are impossible to tell apart on a dive. The most common around coral reefs is the Dwarf Round Herring (*Jenkinsia lamprotaenia*).

They can be found in their millions, usually inside or close to the entrances of caves and canyons in shallow waters. In some places, especially in northern regions, they can be seasonal, congregating in mid to late summer to spawn. By appearing on the reef at the same time, their natural predators are overwhelmed. Most silversides have a lifespan of less than a year.

Silversides are constantly trying to stay as close to each other as possible, moving in unison to confuse and disorientate the surrounding predators, such as groupers, jacks and barracudas. If an individual silverside gets separated from the rest of the school, it is more easily targeted and is quickly eaten. There is safety in numbers.





LITTLE-EYE HERRING

(*Jenkinsia majua*) 7 cm / 2.8 in

Elongated semi-transparent body with a single silver stripe. Found in shallow waters, singly or small schools.



ATLANTIC THREAD HERRING

(*Opisthonema oglinum*) 48 cm / 19 in

Silvery blue with thin dark stripes. Spot above gill cover. Black tips on tail. Thin trailing filament behind dorsal fin.



REEF CROAKER

(*Odontoscion dentex*) 30 cm / 1 ft

Gray to coppery body with dark spot at pectoral base. Large reddish eye. Closely related to the drums (p. 348).



REDEAR HERRING

(*Harengula humeralis*) 27 cm / 11 in

Iridescent bluish-green with faint dark stripes and four orange stripes. Distinctive orange spot above gill cover.



SHORTFIN SWEEPER

(*Pempheris poeyi*) 15 cm / 6 in

Silver to gray hatchet-shaped body with no distinctive markings. Found schooling inside caves and caverns.



GLASSY SWEEPER

(*Pempheris schomburgkii*) 15 cm / 6 in

Silver to reddish hatchet-shaped body. Dark stripe at base of anal fin. Found schooling in caves and caverns.



TARPON

(*Megalops atlanticus*) 2.6 m / 8.5 ft

Silvery body with distinctively large scales and a large upturned mouth. Dark grayish fins. Mostly nocturnal.



Tarpon are large fast carnivores that can live over 50 years and can strike at over 50 km/hr. In the daytime they are usually found in canyons and channels into the lagoon. In some parts of the Caribbean they have become habituated to divers at night and use the lights to hunt.



BONEFISH

(*Albula vulpes*) 77 cm / 2.5 ft

Long silvery to greenish body with a single tall dorsal fin. Dark oval spot on pointed snout. Found in shallow areas.



COMMON SNOOK

(*Centropomus undecimalis*) 1.4 m / 4.5 ft

Long sloping forehead and a distinctively darkened lateral line. Found in shallow lagoons and mangroves.



MOTTLED MOJARRA

(*Ulaema lefroyi*) 23 cm / 9 in

Slender silvery body (may show faint bars). Concave below lower jaw. Large eye with dark spot above iris.



YELLOWFIN MOJARRA

(*Gerres cinereus*) 40 cm / 16 in

The largest of the mojarras. Silvery body with diffuse broken dark bars. Distinctive yellow pelvic and anal fins.



SILVER JENNY

(*Eucinostomus gula*) 23 cm / 9 in

Silvery body with a bluish tint above. Oblique dusky bars along upper back. Dusky outer edge on first dorsal fin.



FLAGFIN MOJARRA

(*Eucinostomus melanopterus*) 19 cm / 7.5 in

Silvery body, slightly darker above. Distinctive black tips on front spines of first dorsal fin, with white area below.



SAND TILEFISH (JUVENILE)

(*Malacanthus plumieri*)

Yellow stripe from eye, broadening towards tail. Large black spot on tail base. Hovers close to a small burrow.



SAND TILEFISH

(*Malacanthus plumieri*) 60 cm / 2 ft

Elongated pale bluish-white body. Hovers near a large burrow of rubble, into which it darts when approached.



SAUCEREYE PORGY

(*Calamus calamus*) 56 cm / 22 in

Bluish cheek with small yellow spots. Curved blue line under eye. Blue spots on pectoral base and top of gill cover.



Porgies have developed large mouths and strong jaws for feeding on mollusks such as clams and other hard-shelled invertebrates. They are often found hovering over the sandy areas where this kind of prey tries to take shelter, sometimes in pairs or in small loose schools.



JOLTHEAD PORGY

(*Calamus bajonado*) 68 cm / 27 in

Silvery with bluish scales and brassy cheeks. Blue line under eye. Distinctive orange blotch at corner of mouth.



KNOBBED PORGY

(*Calamus nodosus*) 54 cm / 21 in

Yellow spots on snout. Dark spot on upper pectoral base. Distinctively humped forehead. Florida/Gulf of Mexico.



SHEEPSHEAD PORGY

(*Calamus penna*) 46 cm / 18 in

Silver with a bluish to lavender sheen. Dark spot on upper pectoral base. No blue or yellow markings on face.



SHEEPSHEAD

(*Archosargus probatocephalus*) 90 cm / 3 ft

Silvery-gray body with five to seven distinct dark bars. Found on rocky shores in coastal areas (not islands).



SPOTTAIL PINFISH

(*Diplodus holbrookii*) 46 cm / 1.5 ft

Silvery body (with faint thin bars in smaller adults). Black spot at tail base. Blue pelvic fins. Florida/Gulf of Mexico.



SILVER PORGY

(*Diplodus argenteus*) 30 cm / 1 ft

Silvery body with large black spot at upper tail base, which may form a saddle. White spine on pelvic fin.



PINFISH PORGY

(*Lagodon rhomboides*) 40 cm / 16 in

Bluish-silver with blue and yellow stripes. Dark spot on top of lateral line. Yellow anal fin with bright blue edge.



SEA BREAM

(*Archosargus rhomboidalis*) 33 cm / 13 in

Rounded bluish-silver body with yellow stripes. Dark spot below lateral line (compare: spot on *L. rhomboides*).



ATLANTIC SPADEFISH

(*Chaetodipterus faber*) 1 m / 3.2 ft

Rounded silvery body with dark bars. Dark edges on long dorsal and anal fins. Often found in small dense schools.



Atlantic Spadefish are usually found in tight schools of a dozen or more, although schools of up to 500 have been recorded. They feed on plankton or small invertebrates from the reef. Juveniles are found in very shallow water, often swimming at an angle to mimic dead mangrove leaves.



ATLANTIC SPADEFISH (JUVENILE)

(*Chaetodipterus faber*)

Tall silvery, brown or orange body with darker bars. Translucent tail. Elongated first dorsal and pelvic fins.



LEATHERJACK

(*Oligoplites saurus*) 35 cm / 14 in

Elongated silvery body with a low concave forehead. Clear to dark yellow tail. Most often in sandy shallows.



TOPSAIL CHUB

(*Kyphosus cinerascens*) 45 cm / 1.5 ft

Grayish-brown to blackish body. Scale rows form dark lines. Large triangular anal fin. Tall rounded dorsal fin.



BRASSY CHUB

(*Kyphosus vaigiensis*) 48 cm / 1.6 ft

Silvery-blue with thin brassy to gold body stripes. Rear edge of anal fin aligned with top leading edge of tail.



BERMUDA CHUB (JUVENILE)

(*Kyphosus sectatrix*)

Silvery to bronze, often with numerous white blotches. May be found drifting under debris or sargassum floats.



BERMUDA CHUB

(*Kyphosus sectatrix*) 75 cm / 2.5 ft

Silvery oval body. Anal fin and tail not aligned. Similar species: Darkfin Chub (*K. bigibbus*) has darker fins.



ATLANTIC TRIPLETAIL (JUVENILE)

(*Lobotes surinamensis*)

Pale brown body with dark blotches and lines. Brown bar through eye. Mimics floating sargassum or dead leaves.



ATLANTIC TRIPLETAIL

(*Lobotes surinamensis*) 1 m / 3.2 ft

Greenish-brown body with rear dorsal and anal fins enlarged to size of tail. Pelagic or in sheltered bays.



MIRRORWING FLYINGFISH

(*Hirundichthys speculiger*) 30 cm / 1 ft

Iridescent dark blue body above and silvery below. Dark pectoral fin with broad clear margin and short clear bar.



When startled, flyingfish propel themselves out of the water at speeds of close to 60 km/hr and can glide through the air for up to 200 meters. While swimming, the pectoral fins are folded alongside the body. They remain near the surface and can be attracted to lights at night.



BANDWING FLYINGFISH

(*Cheilopogon exsiliens*) 30 cm / 1 ft

Gray dorsal fin with large black spot. Dark lower lobe on tail. Bluish-black pectoral fin with a pale diagonal bar.



WESTERN BLUNTNOSE FLYINGFISH

(*Prognichthys occidentalis*) 23 cm / 9 in

Dark upper body and short snout. Gray dorsal and anal fins. Pectoral fin brownish with pale tip and lower edge.



SHARKSUCKER (SMALL JUVENILE)

(*Echeneis* sp.)

Pale blue body with a large head. Lighter blue stripes run down towards tail. May attach onto smaller fishes.



SHARKSUCKER

(*Echeneis naucrates*) 1 m / 3.2 ft

Large fish without a host are gray. Small fish with white-edged black stripe and narrow white borders on tail.



WHITEFIN SHARKSUCKER (JUVENILE)

(*Echeneis neucratoides*)

Black midbody stripe with pale borders. White borders on tail are wide (compare to narrow on *E. naucrates*).



WHITEFIN SHARKSUCKER

(*Echeneis neucratoides*) 75 cm / 2.5 ft

The most common shark sucker on Green Sea Turtles. May be seen aggressively feeding on the turtle's waste.



Sharksuckers are often mistakenly called remoras. The Common Remora (*Remora remora*) is a pelagic fish, uniformly dark gray with a blunt head and no stripes. It only attaches itself onto large fishes like Manta Rays and Whale Sharks (below left) and is not seen on coral reefs.

Sharksuckers are an annoyance, so fish will often try to pass them off onto others. They can also do themselves a great deal of harm trying to scrape them off, opening up their skin to infections. With shark populations in decline, sharksuckers have taken to attaching onto Green Sea Turtles (above).





GREEN MORAY

(*Gymnothorax funebris*) 1.9 m / 6.2 ft

The largest of the morays. Uniformly dark green body with no distinctive markings. Often under ledges in the daytime.



Green Morays are the largest eels in the Caribbean and can live for up to 30 years. They are actually brown, but their skin has a protective layer of toxic mucus that gives them their distinctive color. As well as the sharp teeth lining both jaws, they have longer teeth on the roofs of their mouths that point backwards to keep their prey from escaping. Down in their throats they have a second set of pharyngeal jaws that helps to pull in prey.

They are constantly opening and closing their jaws, giving them a menacing appearance, but this is only to bring fresh seawater down to an internal gill chamber.

Most eels are nocturnal hunters, with a highly developed sense of smell and elongated nostrils to help them sniff out their prey at night. Their long bodies allow them to enter cracks and crevices in the reef to hunt. They have no pectoral fins or bony gill covers that would get in the way. Some eel species are even able to swim under the sand. When trying to pull prey out of a hole, they can wrap their bodies around the reef for extra pull. A single long dorsal fin allows them to swim rapidly in a wave-like motion.





CHAIN MORAY

(*Echidna catenata*) 75 cm / 2.5 ft

Dark body with bright yellow markings of irregular spots and bars, forming a chain-like pattern. Found in shallows.



SPOTTED MORAY

(*Gymnothorax moringa*) 1.8 m / 6 ft

Irregular black spots over a pale background. Patterns vary greatly. Dorsal fin often edged in black. White iris.



PURPLEMOUTH MORAY

(*Gymnothorax vicinus*) 1.2 m / 4 ft

Colors variable from brown to purplish. Dorsal fin black with thin white margin. Yellow iris. Dark inside mouth.



GOLDENTAIL MORAY

(*Gymnothorax miliaris*) 70 cm / 2.2 ft

Dark brown head and body covered in small yellow spots that become denser towards a yellow tail. Golden iris.



CHESTNUT MORAY

(*Enchelycore carychroa*) 34 cm / 13 in

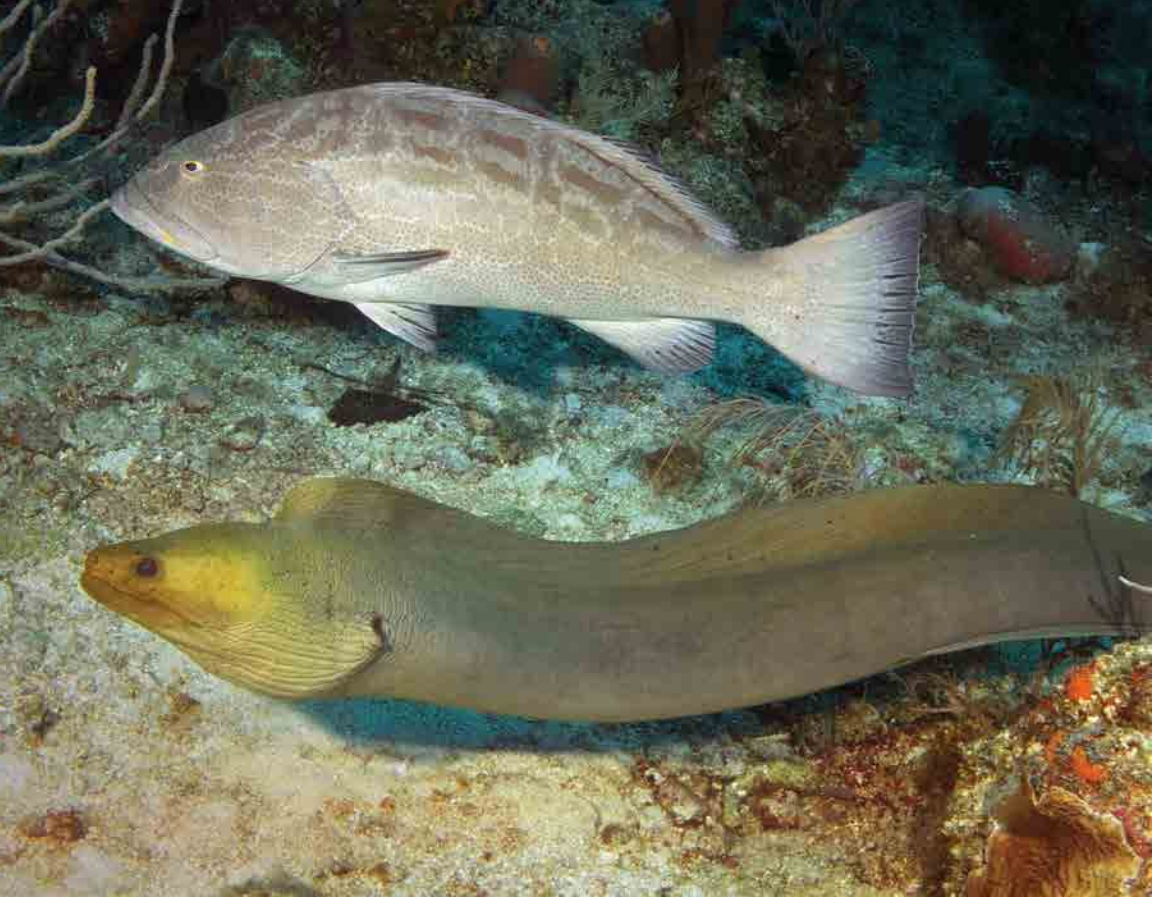
Reddish-brown body. Rows of white spots on upper and lower jaws. Only tips of jaws are touching. Yellow iris.




VIPER MORAY

(*Enchelycore nigricans*) 1 m / 3.2 ft

Uniformly greenish-brown body. May have darker band across nape. Only tips of jaws are touching. Pale iris.



 Hunting on the reef is not always about competition over the same prey. Green Morays will often team up with larger groupers for a hunt. Black and Nassau Groupers are the most common hunting partners. The grouper chases a fish into a hole, where the moray has the advantage. Moving on to another coral head, the moray will go in and chase fish out towards the waiting grouper.

These top predators are both highly territorial but have learned that by cooperating in this team-hunting strategy, they can coexist on the same reef and even prosper together.



Green Moray team-hunting with a grouper.



Prey is cornered.



SHARPTAIL EEL

(*Myrichthys breviceps*) 1 m / 3.2 ft

Large white spots on brown to greenish body. Small yellow spots on head, circled in white. Protruding nostrils.



GOLDSPOTTED EEL

(*Myrichthys ocellatus*) 1.1 m / 3.6 ft

Tan body with bright yellow spots inside diffuse black blotches, smaller towards snout. Protruding nostrils.



SOOTY EEL

(*Bascanichthys bascanium*) 80 cm / 2.6 ft

Dark head with bulbous snout that extends out in front of the mouth. Golden iris. Found buried in shallow sand.



BLACKSPOTTED SNAKE EEL

(*Quassiremus ascensionis*) 70 cm / 2.2 ft

Pale brown body with reddish spots with black centers. Small black spots on face and head. Protruding nostrils.



BANDTOOTH CONGER

(*Ariosoma balearicum*) 34 cm / 13 in

Brown body with a silvery sheen near abdomen. Bright orange crescent above iris. Small reddish pectoral fins.



MANYTOOTH CONGER

(*Conger triporiceps*) 1 m / 3.2 ft

Light blue to pale purple body. Dark borders on blue dorsal and anal fins. Small dark pectorals. Nocturnal.



SPOON-NOSE EELS

(*Echiophis* spp.) 1.8 m / 6 ft

Stout bodies and short snouts. Prominent fangs. Found buried in sandy areas, often with only the head showing.



Many eels have evolved to live in areas of sand or silt, creating burrows from which they can ambush smaller fishes, while still hiding from larger predators. Garden eels are planktivores, with most of their long bodies hidden in the sand, only coming out partially to grab passing food.



SHORTTAIL SNAKE EEL

(*Callechelys guineensis*) 107 cm / 3.5 ft

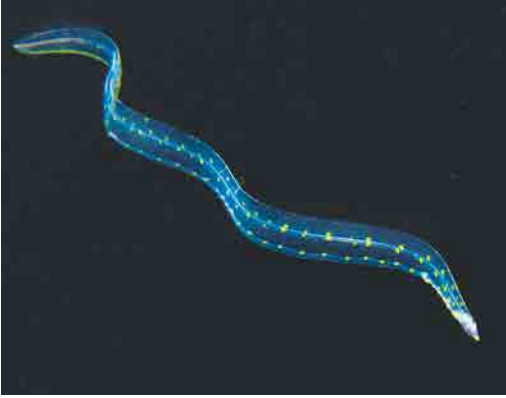
Pale body with sharply pointed snout. Brown spots on top of head. Brassy iris. Dorsal fin starts close to head.



BROWN GARDEN EEL

(*Heteroconger longissimus*) 50 cm / 1.6 ft

Dark head with pale spots and white abdomen. Found in burrows, forming large colonies on deeper sand patches.



LARVAL EELS
(Leptocephali)

One of the more common larval fishes found drifting over reefs at night. Transparent body with an opaque head.



JUVENILE MORAYS
(*Gymnothorax* spp.)

After a planktonic stage, newly settled morays are black with white under the jaw. Identifications are tentative.



FALSE MORAY
(*Kaupichthys hyoproroides*) 15 cm / 6 in

Brownish-gray body with translucent fins. Pale head with nostrils above upper lip. Tiny translucent pectoral fins.



SEAGRASS EEL
(*Chilorhinus suensonii*) 21 cm / 8.2 in

Purplish-brown Body. Broad flattened head, white under jaw. Pale ring around gill opening. Found in seagrass.



SPECKLED WORM EEL
(*Myrophis punctatus*) 35 cm / 1.2 ft

Uniformly pale tan, speckled with small brown spots on upper head and body. Found in shallows and seagrass.



KEY WORM EEL
(*Ahlia egmontis*) 47 cm / 1.5 ft


Bright orange to brownish body, paler below. Upper jaw extends beyond lower jaw. Found in shallow sand/rubble.



SPOTTED EAGLE RAY

(*Aetobatus narinari*) 2.4 m / 8 ft

Dark gray to black above with white spots and circles.
White below. Flattened upturned snout. Small eyes.

 Eagle Rays look very different from below than from above. This helps them to move about without being noticed by their main predators, the sharks. The white belly makes them hard to spot from below when looking up towards the light. The spots on their backs help to break up their outlines when seen from above.



Eagle Rays and stingrays have mouths under their bodies for digging into the sand, where they find food such as urchins, clams and other invertebrates, although they can also eat small fish. They sense prey by using electroreceptors similar to those found in sharks. They have skeletons made of cartilage, except for two bony plates in their mouths used for crushing food. Stingrays have sharp barbs on their tails that can inject a powerful neurotoxin. They often bury into sand to ambush their prey, with only their eyes and gill openings showing.



FLORIDA TORPEDO

(*Torpedo andersoni*) 30 cm / 1 ft

Pale circular body with brown blotches, straight at front of head. Short snout. Rounded dorsal fins set close to tail.



SOUTHERN STINGRAY

(*Hypanus americanus*) 1.5 m / 5 ft

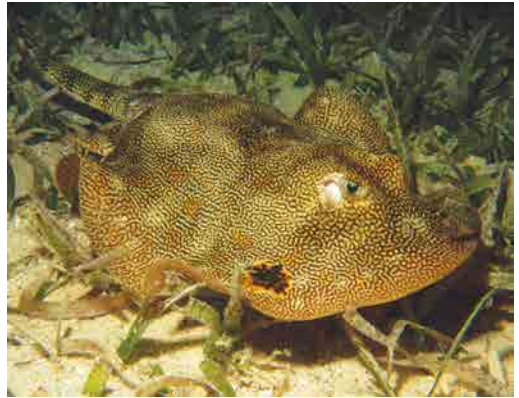
Gray to olive-brown body with protruding eyes. Snout and tips of fins are pointed. Often found buried in sand.



CARIBBEAN WHIPTAIL STINGRAY

(*Styracura schmardae*) 1.8 m / 6 ft

Circular gray body with large gill openings behind eyes. Snout and tips of fins are rounded. Inshore shallows.



YELLOW STINGRAY

(*Urobatis jamaicensis*) 70 cm / 2.2 ft

Variable yellow to brown body with dark blotches and small yellow spots. Snout and tips of fins are rounded.



CARIBBEAN MANTA

(*Mobula aff. birostris*) 5 m / 16 ft

Large mouth in front of body. Pelagic, rarely over reefs. Similar Giant Manta: dark blotches behind gills (7 m).



CHILEAN DEVIL RAY

(*Mobula tarapacana*) 3.5 m / 12 ft

Olive-brown on top. White below, becoming gray at rear edges. Mouth on underside (compare: *M. aff. birostris*).




SCALLOPED HAMMERHEAD

(*Sphyrna lewini*) 3.4 m / 11 ft

Deep notches on very curved snout. Tall rounded dorsal fin.

Straight rear edge on pelvic fin (compare: *S. mokarran*).

 The iconic head shape of hammerheads has evolved to allow them to hunt for prey hiding in the sand. The wide head has a broad line of electroreceptors that can detect the faintest of signals from buried prey like stingrays. The shape also allows them to pivot quickly to catch escaping prey.



CARIBBEAN REEF SHARK

(*Carcharhinus perezii*) 3 m / 10 ft

Dorsal fin starts well behind pectoral fin. Darker areas under tips of pectoral and pelvic fins. White abdomen.



GREAT HAMMERHEAD

(*Sphyrna mokarran*) 6.1 m / 20 ft

Slightly notched snout, only slightly curved. Tall pointed dorsal fin. Small eye. Curved rear edge on pelvic fin.



NURSE SHARK (JUVENILE)
(*Ginglymostoma cirratum*)

Juveniles are found in shallow water, often hiding under ledges. May have faint dark saddles or small dark spots.



NURSE SHARK

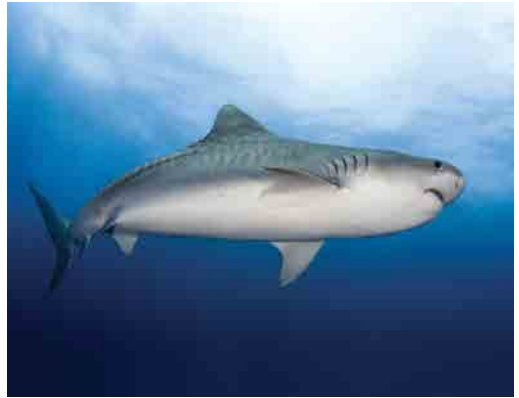
(*Ginglymostoma cirratum*) 4.3 m / 14 ft
Gray with black and white speckles. Dorsal fins set close to long tail. Fleshy barbels over top lip. Small white eye.



LEMON SHARK

(*Negaprion brevirostris*) 3.7 m / 12 ft

Yellowish to brown or gray with pale abdomen. Blunt rounded snout. Second dorsal fin almost as large as first.



TIGER SHARK

(*Galeocerdo cuvier*) 5.5 m / 18 ft

Heavy body with short wide snout. Series of dark body bars and markings. Upper lobe of tail is the largest.



CARIBBEAN SHARPNOSE SHARK

(*Rhizoprionodon porosus*) 1.1 m / 3.6 ft

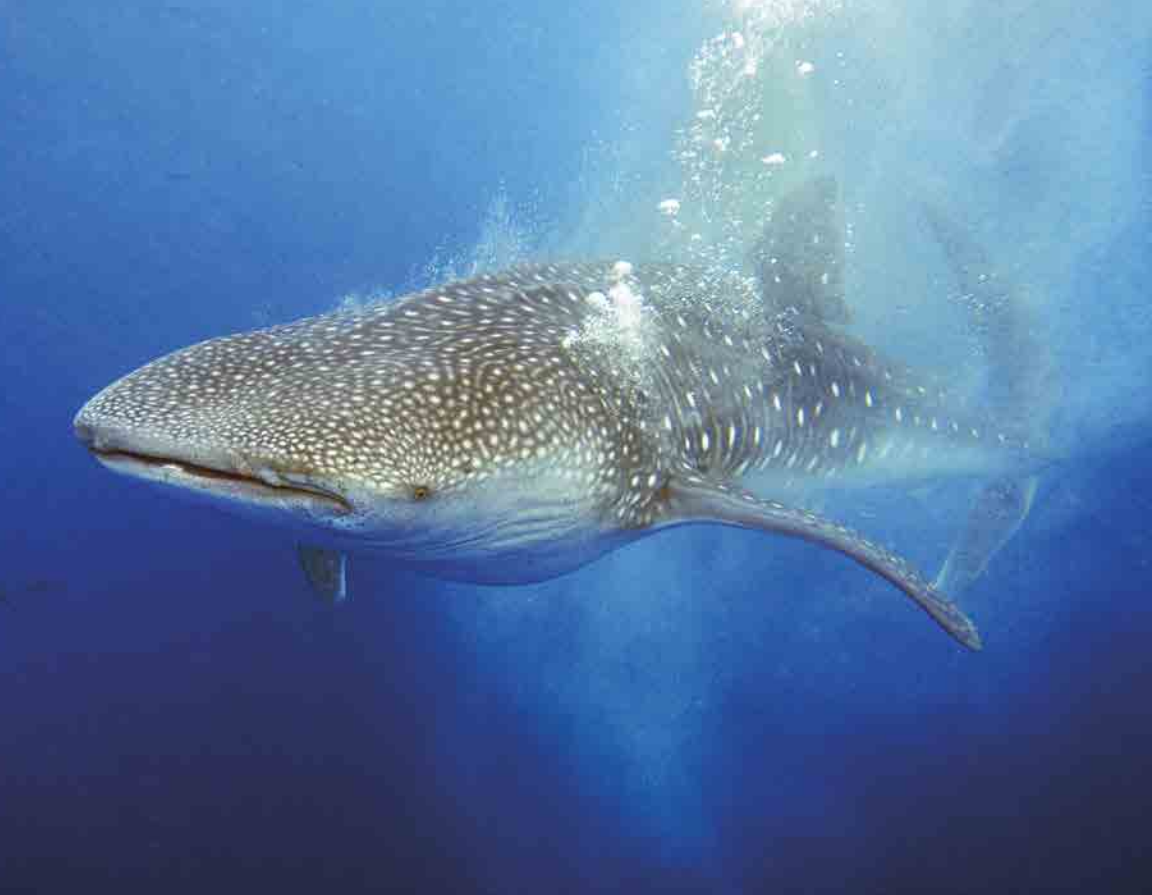
Dusky gray. Dorsal fin starts above pectoral edge. 2nd dorsal fin above middle of anal fin. Found in shallows.



BULL SHARK

(*Carcharhinus leucas*) 3.4 m / 11 ft


Tall heavy body. Dorsal fin begins above the middle of pectoral fin. Small eye. Upper lobe of tail is the largest.



WHALE SHARK

(*Rhincodon typus*) 18 m / 59 ft

Dark gray to black body covered in white spots and thin white lines. Three distinct ridges running along sides.

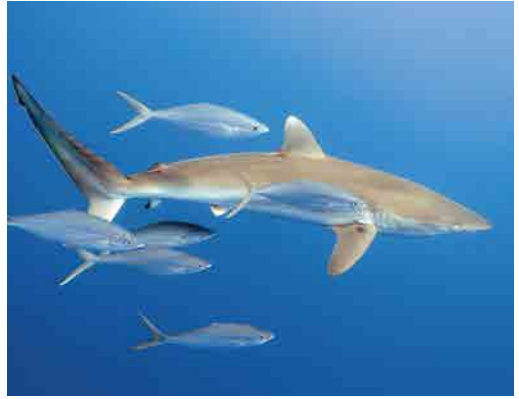
 Whale Sharks are the largest fish in the ocean, can weigh up to 20 tons and can possibly live to be over 100 years old. They feed on some of the smallest animals in the ocean, by gulping in huge amounts of seawater and filtering out the nutrient-rich plankton. They follow this plankton in migratory paths that can lead them to the traditional spawning sites of fishes such as snappers, where they will feast on the eggs. The pattern of spots on each Whale Shark is unique. Individuals have been recorded traveling for thousands of kilometers to reach their favorite feeding grounds.

Finding a Whale Shark in the vastness of the ocean is not just a matter of luck, one has to follow the signs of an interesting food chain. Seabirds like frigates and terns are sometimes seen diving down into the water to catch small fish, or small tuna called Bonito can be seen jumping and splashing in a “tuna boil.” These are signs that there is concentration of plankton near the surface that may attract a Whale Shark. They swim through the dense plankton with mouths wide open. When plankton is less dense they may conserve energy in an upright feeding position called “bottling,” pictured on the right.



**OCEANIC WHITETIP SHARK***(Carcharhinus longimanus)* 3.6 m / 12 ft

Rounded dorsal fin with a diffuse white tip. Pectoral fins are very long and also rounded with white tips. Pelagic.

**SILKY SHARK***(Carcharhinus falciformis)* 3.3 m / 11 ft

Slender body. Rounded dorsal fin starts well behind the pectoral fin. Second dorsal fin has a long trailing edge.

**SHORTFIN MAKO***(Isurus oxyrinchus)* 4 m / 13 ft

Bluish body. Slender conical snout. Dorsal fin starts just behind the pectoral. Both tail lobes are the same size.

**BLACKTIP SHARK***(Carcharhinus limbatus)* 2.6 m / 8.5 ft

Dark markings on all fins except for the white anal fin. Distinctive white streak on side and a white abdomen.



Sharks populations are in serious decline throughout the Caribbean and worldwide. Over 100 million sharks are killed each year and this can have a devastating impact on marine ecosystems as a whole. They are known as “keystone species,” keeping fish populations healthy by weeding out the old and the sick. Without sharks at the top of the food chain, other fish species become too populous and the delicate balance of the reef is upset. Unlike other fishes that may release millions of eggs every year, most sharks incubate their eggs internally and give live birth to just a few shark pups. Of these, only a few will survive their first year in the ocean. It takes sharks a long time to reach sexual maturity, as long as 20 years, and so they cannot easily replenish their numbers.

Sharks have been apex predators for over 400 million years, but modern fishing practices have taken a dramatic toll in just decades. Longline fishing puts many kilometers of fishing line and thousands of hooks in the water at a time and sharks inevitably get caught as bycatch. They are also caught up in gill nets and seine nets. Trawlers that drag large nets over the sea floor also indiscriminately catch many shark species. Sharks are even targeted directly. In the lucrative “finning” trade, just the fins of sharks are harvested and the animals are thrown back into the ocean to die. A bowl of shark-fin soup can fetch exorbitant prices, and as long as demand continues so will the slaughter. Ironically, removing sharks from the food chain actually harms many commercial fisheries in the long run.



Hawksbill Turtles (on the left) get their name from their sharp beaks, used to break open sponges. They prefer the tough Leathery Barrel Sponge (p. 65). Green Sea Turtles (pictured above) feed on seagrass in the lagoon as well as on jellies beyond the reef. Loggerhead Turtles have strong jaws that allow them to feed on shellfish and crustaceans.

Sea turtles are similar to their land-based cousins but are unable to retract their heads into their shells. They spend their entire lives in the water, females only coming onto land once every two to four years to lay their eggs, always returning to the same spot where they were hatched.

Sea turtles are under threat worldwide. The Hawksbill Turtle is now considered a critically endangered species. Other than the occasional shark, the only predator of sea turtles is man. They are hunted for their meat and their nests are raided for their eggs. Boat traffic near coral reefs can kill turtles as well, like this unlucky individual on the right. Sea turtles only start reproducing very late in life (35 years in the case of the Loggerhead) and fewer are being given a chance to reach this age. Pollution is also taking a toll; turtles get caught in discarded fishing nets and line or they may try to eat floating debris, such as plastic bags, that can look like jellies.





HAWKSBILL TURTLE (ADULT MALE)
(*Eretmochelys imbricata*)

Only adult males will have a large tail that extends well beyond the shell. Claws on flippers are long and curved.



HAWKSBILL TURTLE

(*Eretmochelys imbricata*) 90 cm / 3 ft

Long pointed beak. Overlapping plates form a serrated edge to the shell. Two pairs of plates between the eyes.



LOGGERHEAD TURTLE
(*Caretta caretta*) 1 m / 3.2 ft

Distinctively short thick neck and a bulbous head. The tall rounded shell is often encrusted with barnacles.



GREEN SEA TURTLE

(*Chelonia mydas*) 1.2 m / 4 ft

Distinctively smooth rounded shell. One pair of plates between the eyes (compare: Hawksbill's two pairs).



Sharksuckers often attach to Green Sea Turtles, getting a free ride and feeding off the turtle's waste. Turtles will try to shake them off or pass them on to other turtles or even divers. The same sharksuckers can remain with a turtle for years, even forming mating pairs.

While feeding or moving about on the reef, sea turtles need to swim to the surface and breathe every half hour or so. While resting or sleeping, sea turtles can hold their breath for up to six hours.




Sea turtles are sometimes seen cleaning their shells, rubbing away algae and parasites from their backs. Sponges can be particularly good for this and they return to the same favorite spots, sometimes wearing a shell-shaped curve into the base of Giant Barrel Sponges.



SPINNER DOLPHIN

(*Stenella longirostris*) 2.1 m / 7 ft

Elongated gray body with a long pointed rostrum. Dark streak near eye. Fast playful swimmers, often jumping.

 Dolphins are very social animals, normally traveling in pods of a few dozen individuals, but some pods can reach into the hundreds. These are usually led by the older females. Dolphins hunt cooperatively, communicating with high-pitched whistles. They have a layer of blubber under their skin, allowing them to keep a body temperature about the same as that of humans. Most dolphins can dive very deep for their food and hold their breath for up to fifteen minutes. Dolphins sleep for about eight hours a day but they still need to surface to breathe, so they slow down and let first one half of their brains sleep and then the other.



The West Indian Manatee (*Trichechus manatus*) can be found throughout the Caribbean, from the Bahamas to Venezuela, though sightings on coral reefs are rare. They prefer coastal habitats where fresh water and seagrass are more available. They do not have the thick layer of body fat that other mammals have, so rarely venture from the warm shallows. Currently on the Endangered Species List, their habitats are being encroached upon and they can easily get caught up in fishing nets or be hit by increased boat traffic.



ROUGH-TOOTHED DOLPHIN

(*Steno bredanensis*) 2.6 m / 8.5 ft

Long narrow head with a sloping forehead and long rostrum. White patch above eye continues onto back.



BOTTLENOSE DOLPHIN

(*Tursiops truncatus*) 3.6 m / 12 ft

Robust light to dark gray body with a paler abdomen. Short rostrum. Coastal individuals are usually smaller.



SHORT-FINNED PILOT WHALE

(*Globicephala macrorhynchus*) 6.1 m / 20 ft

Bulbous head with no obvious rostrum. Dorsal fin has a distinctively long base. Body thickens towards tail base.



PANTROPICAL SPOTTED DOLPHIN

(*Stenella attenuata*) 2.3 m / 7.5 ft

Pointed rostrum has a distinctively white tip. Dark patch around eye. Larger or coastal individuals develop spots.



ORCA (KILLER WHALE)

(*Orcinus orca*) 9 m / 26 ft

Black with distinctive white patches: near eyes, under chin and on abdomen towards tail. Rarely seen, pelagic.



FALSE KILLER WHALE

(*Pseudorca crassidens*) 6 m / 20 ft

Dark gray with a long tapering forehead. Sickle-shaped dorsal fin and long narrow flippers with pointed tips.

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“For most of history, man has had to fight nature to survive;
in this century he is beginning to realize that, in order to survive,
he must protect it.”

Jacques-Yves Cousteau





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