

Clearnose Skate Egg Casing

Raja eglanteria



The Clearnose Skate is a wide flattish fish with a cartilage skeleton. It is a bottom feeder that eats crabs, worms, bivalves and small fish. It can grow to 100 pounds (photo right).

The Skate's egg case is 3 to 4 inches long, black with four tendrils. They are composed of keratin, the protein in our fingernails which makes it tough enough to deter many predators. The case is formed around the egg just before being deposited it on the sea floor. The case "horns", anchor the egg, extract oxygen from the seawater and excrete waste. They are waterproof since the embryos do not have gills until they are three weeks old. At that time holes open in the tips of the horns to admit seawater.

After 3 to 15 months the case splits open at one end releasing the young skate. The empty egg cases have several names; mermaid's purse, devil's purse and sailor's purse.

Live Animals should never be taken from any FL State Park

Ghost Crab

Ocypode quadrata



Ghost Crabs are not often seen on our beaches as they are nocturnal. However their 1 to 2 inch burrow entrances are visible and numerous, starting at the high tide line to several hundred feet inland. The burrows can be up to 4 feet deep and are dug at a 45 degree angle to allow sea breezes to cool the interior. Their scientific name *Ocypode* means "fast feet" and they can travel up to 10 miles an hour.

These crabs feed on sea turtle eggs and hatchlings, clams, insects, other crabs and scavenge most any dead creature. They are preyed upon by shorebirds and raccoons.

Being terrestrial, they are able to use hairs on the base of their legs to wick moisture from damp sand up to their gills.

Ghost crabs normally mate near the male's burrow. An interesting detail of the mating is that along with sperm the male discharges a fluid that hardens in the female, preventing her from further breeding.

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Lined Seahorse

Hippocampus erectus



The Lined Seahorse can grow to seven inches and has a wide range of colors including brown, orange, yellow or red. It has a series of white dots in a line down its body giving it its name.

Instead of fish scales the seahorse has skin stretched over boney armor. It swims slowly in an upright position, having only a dorsal fin for propulsion.

Their habitat is in 2 to 230 feet of water. It is often found clinging to aquatic vegetation or man-made objects with its prehensile tail. It has no teeth and feeds on very small animals and plants. These are sucked into its mouth, which is at the end of its snout, and swallowed whole.

The Lined Seahorse mates with a single partner. After a courtship performance, the female deposits 250 to 650 eggs into the male's brood pouch. The male seals the pouch and fertilizes the eggs. A Capillary network oxygenates the eggs which hatch in 20 days. Juvenile seahorses emerge as miniature replicas of the adults and swim freely away.

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Moon Jellyfish

Aurelia aurita



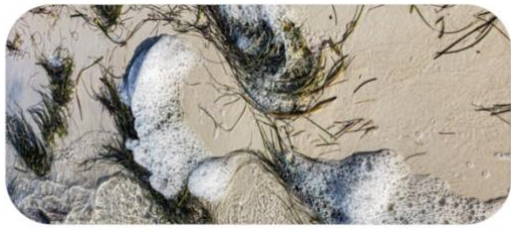
The Moon Jellyfish is a very simple animal. They are 95% water, have a mouth, digestive system and a simple nervous system. The four brown internal rings are reproductive organs. Having no lungs, they absorb oxygen thru their body surface. These jellies are poor swimmers only able to maintain a level position close to the surface by pulsations of its body.

This floating position is optimal for their short tentacles to capture plankton, fish eggs, small mollusks and shrimp. The Moon Jellies tentacles have stinging cells, but are not powerful enough to penetrate thru human skin. But avoid touching this jelly as some people are sensitive to the sting.

Moon Jellyfish can grow to 2 feet in diameter and are a food source for birds and turtles. Trash plastic bags can resemble these jellies and thousands of animals die by mistakenly ingesting this rubbish. As a Moon Jelly dies, its body comes apart and small clear blobs can be found on the beach (right photo).

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Sea Foam



Many people see foam on the beach and conclude that it is a result of some type of pollution. While this is sometimes the case, most sea foam is harmless and occurs naturally.

When large amounts of algae, seaweed and other marine plant life are broken down by wave action, they can degrade to molecules that act as foaming agents. When these molecules are mixed by turbulent waves and wind, they form bubbles held together by surface tension. This is the foam you see blown onto the beach.

There are also some harmful foams. This can result from algae blooms, such as red tide, that produce toxins and from human made sources such as fertilizers. These also produce foaming agents. As these foam bubbles burst they release contaminants that cause eye irritation and respiratory problems. Bird die offs have also been attributed to some foams. These contaminants destroy waterproofing on feathers making the birds susceptible to hypothermia and inhibiting flight.

Sea Hare

Aplysia fasciata



This description of the Sea Hare would more correctly be filed with the “Gastropods”, but given its slug like appearance, most people looking to identify this creature look under “Beach Finds”. It is, in fact, a gastropod having an internal shell made of protein. Sea Hares can be distinguished from other Sea Slugs in that they have swimming wings.

The two protuberances on the head are sensory organs that detect chemicals in the water allowing them to find food and detect predators. They are plant eaters and their reddish to greenish color depends on the color of their food. They have a structure of tiny teeth to scrape food particles off a surface and into their mouth.

The camouflage color of the Sea Hare, and its ability to bury itself helps protect it from predators. It also can release toxic ink, like an octopus. The toxin is also in their skin making them an unpleasant meal.

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Sea Pork

Aplidium stellatum



Sea Pork is a colony of hundreds to thousands of animals. They are marine invertebrates called zooids (pron. zo-oid). These animals excrete a cellulose substance which forms a sheath that functions as a gelatinous exoskeleton. Look closely: the zooids appear as reddish little round circles or pores

covering the surface of the globular structure.

The individuals are filter feeders. They have intake and outtake siphons which bring in nutrients and oxygen and expel waste.

Sea Pork reproduce by releasing larvae resembling miniature tadpoles. They gather as a group to create their gelatinous sheath and to attach themselves to a rock or other hard surface. The new colony can grow to more than a foot in size and weigh up to ten pounds.

Sea Pork gets its name from dead colonies that bleach to white on the beach, resembling a slab of pork fat. Sea pork colonies are preyed upon by sharks, rays and skates.

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Spotted Spoon-nose Eel

Echiophis intertinctus



Discovered on Honeymoon Island’s beach wrack line was what looked like a dead snake (left photo). Turns out it was a Spotted Spoon-nose Eel that had been stranded half in its burrow as the tide went out. Pushed to the water, it came alive and within a few minutes wiggled into the sand, burying itself tail first, and disappeared (right photo).

These eels can grow to over four feet long, have a stout cylindrical body and a tail that is over half its body length. The tail tip is hard and pointed allowing the eel to bury itself tail first for protection from predators.

It hunts during the day and catches its victims with strong pointed teeth. Its cream color, spotted with brown dots, provides camouflage in its shallow sand and soft bottom habitat. Burrowing by this and other marine animals is important, as it oxygenates the marine sediments making it more habitable for other organisms.

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Graceful Redweed

Gracilaria tikvahiae



Graceful Redweed is one of 7000 species of red algae. Graceful Redweed is often found on the beach wrack line and can be greenish to bright red. They have 12-inch forked branches that can be flat or round resembling spaghetti.

Graceful Redweed may grow free floating or attached to a hard surface from the water's surface to 30 feet deep. Under high light and nutrient conditions it can become a huge biomass causing habitat destruction. Beaches in Lee County, FL were fouled in 2003-2004.

Graceful Redweed is important for the production of the hydrocolloids carrageenan and agar which provide texture, thickening, gelling or structure to many foods and medicines. A few examples are toothpaste, processed cheese, marmalade, salad dressing, ice cream and non-stick bandages. This plant is also eaten as a vegetable. Have you had some seaweed today?

Graceful Redweed is also a potential energy-producing plant as it is fast growing and can be used to produce methane.

Mangrove Propagules



Three species of propagules are often found within the beach wrack line. Mangroves have a unique method of reproduction. Their propagules sprout and start embryonic development while still on the tree, unlike other flowering plants that disperse dormant

seeds. The developing propagules are released from the tree to be dispersed by water.

Red Mangroves produce an approximately six inches long, ½ inch diameter propagule. It must remain in the water for about 40 days to continue development. They are viable for a full year. Finding a suitable habitat the propagule will "stand" for a period of 15 days before it sprouts roots and leaves.

Black Mangrove propagules are about 1 inch long, must remain in water for 14 days, are viable for 4 months and must stand for 7 days.

White Mangrove propaagules are smaller at about ½ inch, sprout after they fall from the tree, must remain in the water or wet soil for 8 days, are viable for one month and must stand for 5 days.

Parchment Worm

Chaetopterus variopedatus



Parchment worms (left photo in a garden trowel) live buried in the sand. Their location is obvious as it leaves tube shaped mounds on the surface (right photo). The worm lives in a u-shaped parchment-like tube with each end extending above the surface. At one end is a shovel-like

mouth that has fan like structures to pump water containing plankton and other organic material thru the subsurface tube. As the water and nutrients are moved thru the body a mucous film forms a bag-like filter. When the filter reaches a certain size it forms a ball and is moved to the mouth. The remaining material continues to the animals anus end and is expelled on the surface.

Two species of filter feeding crustaceans are almost always found in Tube Worms. In addition, another crustacean and two species of shell-less gastropods are sometimes present. They feed on the mucus net or the feces of the worm.

Crab Claws



There are numerous crab species living in the waters off our beaches. As these animals are preyed upon and or die, some of their body parts are washed up onto the shore. The arm on the left side of the photo is from a Spider Crab, with barnacles growing on its surface. There are two species of Spider Crabs in Florida, the Longnose, *Libinia dubia*, and the Portly, *Libinia emarginata*. They co-exist in the same habit and are very similar. These crabs are unusual in that they are slow and move in a forward direction. They are predatory and feed on Sea Stars.

The Claw on the right is from a Florida Stone Crab, *Menippe mercenaria*. These crabs are well known for their claw meat. When harvesting, one claw is removed and the crab is then released to regenerate another. The claws are used for defense and to hunt prey. Adult Stone Crabs live in slanted 12- to 20-inch burrows.

Wool Sponge

Hippospongia lachne



The Wool Sponge is one of twelve types of sponges harvested for commercial use, and along with the yellow and grass sponges, are the most valued. Sponge harvesting in Tarpon Springs, Florida, began in the late 1800s when John Cheney came to town to manage a family business. Touring the State he observed the successful sponge industry in Key West. Learning from Tarpon Springs local fishermen, that they were snagging their turtle hunting nets on sponges, he realized the potential of a local sponge industry.

He formed the Anclote and Rock Island Springs Sponge Company. He then met a Greek Sponge buyer who encouraged experienced Greek Sponge Divers and their families to immigrate to Tarpon Springs. By the mid-1930s there were over 200 boats harvesting sponges. A sponge blight in 1940 decimated the then 3 million dollar Gulf Coast sponge industry.

Today the sponge industry has recovered although not to its historic levels. Tarpon Springs now harvests 70% of the world's natural sponges.

Vase Sponge

Ircinia campana



Vase Sponges, like many sponges, are obviously named after their shape. This sponge can grow to two feet.

Sponges are composed of a colony of single-celled organisms that work together to perform a variety of bodily functions. Instead of a skeleton they're supported by a matrix of silica spicules (short tapered glass rods).

Sponges and airplanes have a lot in common. As the speed of the water current increases, the pressure within the sponge decreases and pulls water through its covering of many tiny pores into an internal system of canals. Larger collar cells have hair-like whips that gently mix the water as it moves slowly through the sponge allowing it to feed efficiently. The collar is sticky and collects the oxygen, plankton, bacteria and other organic nutrients. Carbon dioxide and waste are then expelled. In a single day a sea sponge can process 10,000 times its volume of water through its system.

The large amount of water passing through a sponge makes them self-cleaning. Also sponges have antibacterial enzymes to kill bacteria. These attributes make the sponge ideal for washing and cleaning.

Red Finger Sponge

Haliclona compressa



The Red Finger Sponge can grow to 16 inches. Its color may vary from bright red or orange to black or brown.

Sea sponges are a simple colony of single-cell organisms that work together to perform a variety of bodily functions. Sponges have attributes of both plants and animals and for centuries there has been a debate as to which it is. Like plants they do not have a body cavity, brains, digestive or nervous systems. Like plants they root themselves to a solid spot and do not move. However they are animals. Plants use photosynthesis to produce chemical energy. Sponges use cellular respiration typical of animals. Plants have cell walls

and other cellular distinguishing characteristics. Sponges and other animal cells have a unique cell structure to include a cell membrane. Unlike plants, sponges have a skeleton made up of silica (glass) spicules.

Tube Sponge

Callyspongia vaginalis



Tube sponges can grow to 3 feet tall.

Most sponges are hermaphroditic — able to act as either female or male. They can reproduce both sexually or asexually.

Sexual reproduction happens internally. The male cells release sperm into the surrounding water. These are taken in by the female cells and are carried by special amoeba-like cells to the eggs for fertilization. Tiny larvae develop and are released into the water. They have cilia that propel them to a new location. The larvae then settle to the sea floor to grow.

Asexual reproduction occurs when fragments of a sponge break off and drop to the seafloor or are scattered by water currents. These pieces attach themselves to hard objects and grow into mature sponges, thereby increasing the population.

Sponge harvesters have learned that cutting sponges off with a knife rather than ripping the sponge from its attachment allows the remains of the cut sponge to grow again.