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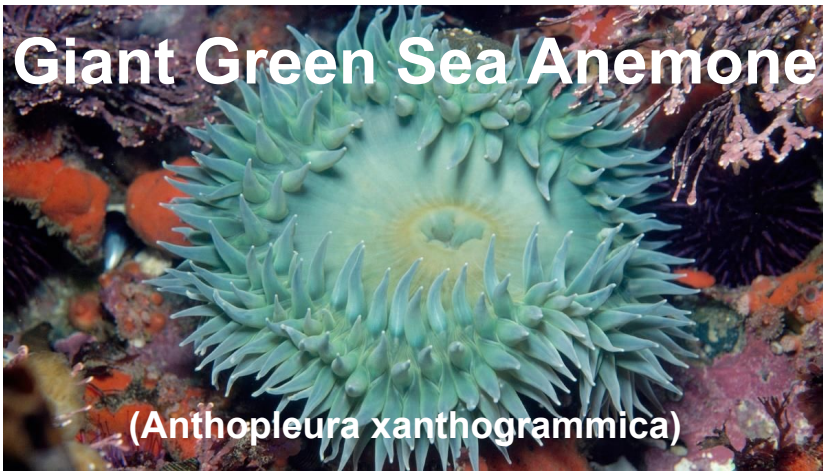


FRESHMAN SLIDES AFTER VISIT TO POINT GRENVILLE.

MOST INFORMATION IS FROM ENCYCLOPEDIAS, SO THEY WERE NOT CITED.

Giant Green Sea Anemone

By Nolan Palmer



Description

The *Anthopleura xanthogrammica* is a species of sea anemone commonly found in tide pools on rocky and sandy beaches in the Pacific ocean. They can be found anywhere between Alaska and Panama. The most distinguishing feature of the giant green sea anemone is the bright green tentacles and flat, unmarked oral disc surface. They reproduce sexually by releasing eggs and sperm into the water, where they combine and form a larva that eventually latches onto a rock and grows up.

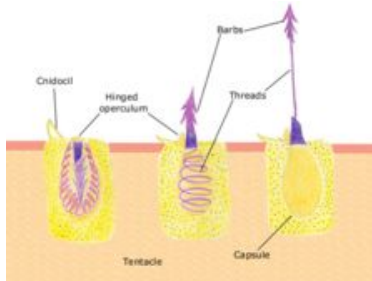
Predator and Prey

Leather sea stars, nudibranchs, sea spiders, and several types of snails all feed on the green sea anemone. The anemone eats mainly muscles, but also small fish, crabs, sea urchins, and occasionally seabirds. Sea anemones have one of the most fascinating hunting techniques in my opinion. Whenever prey brushes up against the anemone's tentacles, tiny cells called cnidocytes fire microscopic harpoons into the prey that deliver a hypnotoxin, which paralyzes the prey so that the anemone can pull it into its mouth and digest it.



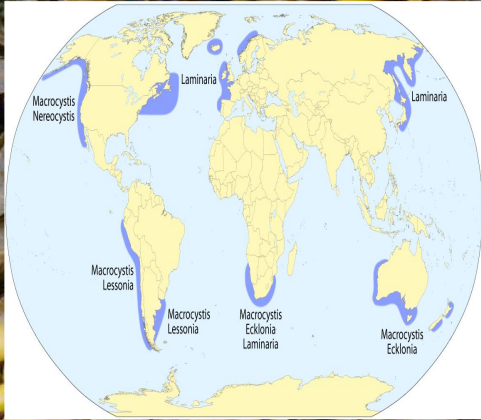
Ruby Beach Tide Pool

Cnidocytes



Fun Facts

- Although the intertidal zone looks tough and rugged, it is very fragile and easily disturbed by pollutants or careless tourists.
- If you poke a sea anemone, it squirts water out of tiny holes.



Rockweed (Algae)

By Jared Erwin and Destiny Blake

Ascophyllum nodosum

Sexual Reproduction: Occurs during the summer. Swollen receptacles that contain gametes which helps reproduce.

Habitat: Found in Low to High intertidal zones. Possibly in Low salinity areas, and low temperature areas.

Rockweed is a brown algae. Growth in the upper and middle intertidal zones. The plants grow to about 30 cm long. They grow and during the summer, filling the intertidal with groups of rockweed. Rockweed produces chemicals called phenols that make it indigestible for many animals.

Predators including periwinkles, limpets, isopods and some humans.

Ecology: Indicates a good water quality; it dies if there is too much pollution. Provides food, shelter, etc. for small crustaceans, mussels, snails, whelks, and others.

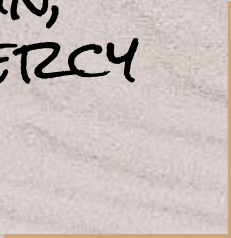
Environmental Issues: Dies if the environment is too polluted.

Adaptations: Chemical protection against many predators, “airbags” to help it stand up, etc.



HERMIT CRABS

BY: KATHRYN,
LAUREN, & METZCY





Hermit crabs cannot live in dry environments. In order to protect themselves in the wet environment, the hermit crabs look for suitable shells. In addition to this, hermit crabs are nocturnal, giving them a distinct advantage over other species. Hermit crabs also molt once a year. They are capable of walking sideways and storing female eggs inside its shell. *Fun Fact:* Hermit crabs play games by hitting each other.

ADAPTIONS

BEHAVIOR

Fun Fact: Hermit crabs can live up to 10-30 years

Fully formed, correctly sized shells are often times hard to come by for hermit crabs, so fighting over shells is completely normal.

PREDATORS & PREY

Hermit crabs have many predators due to their small size. Normal predators include seagulls, fish, squid, and octopi.

Hermit Crabs are omnivorous, meaning they will eat almost anything they can find. Their diet mainly consists of small fish, worms, plankton, and other random floating food particles.

HERMIT CRABS PAGURZOIDEA



BREEDING HABITAT

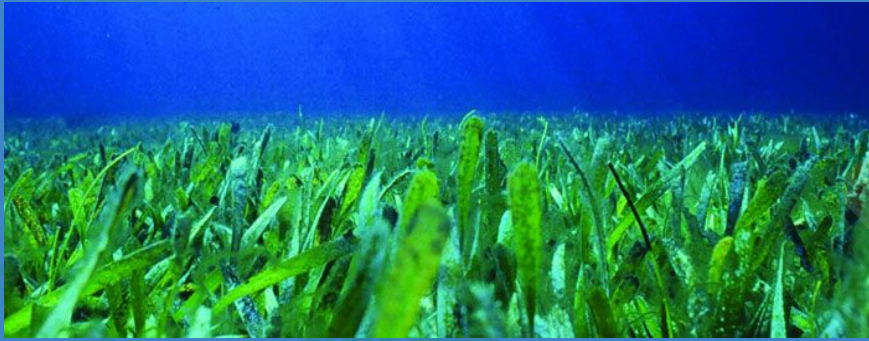
Hermit crabs are found in coastal areas, generally in areas with places to hide and lots of food. They need to live by the coast so they can mate and find shells to live in.



Hermit crabs reproduce by going through copopulation. When this happens, the hermit crabs take off their shells, while the male releases Spermatophores to fertilize the female eggs. The female then has eggs attached to her chest (which is why males look for larger females). The hermit crab larvae hatch in a few weeks. The larvae get sent out into the ocean as Zoea, their gills constantly undergoing metamorphosis. When they finally become fully matured, their gills become smaller. This means that the hermit crab can no longer breathe underwater for long periods of time.

Seagrass

By Kylie Knodel and Diana Rodriguez



Seagrass

Seagrass use two methods of reproduction: asexually or sexually. When the seagrass produce asexually their rhizomes elongate beneath the sediment and new identical shoots are produced. Seagrasses can also produce sexually by the means of flowers.

Habitat: Species such as clams, worms, crabs, and echinoderms, like starfishes, sea cucumbers, and sea urchins, use the seagrass as a refuge from strong currents and to escape larger predators. Seagrass leaves also provide a place for filter-feeding animals, like bryozoans, sponges, and foams to anchor.

The adaptations of seagrass include adapting to salt water and having horizontal roots called rhizomes which can help them stay put when waves brush up against them.

Prey: Most animals don't eat seagrass directly but wait until it dies and decomposes. Once the seagrass has decomposed animals feed on the dead material or on the bacteria which breaks the seagrass down.

Seagrasses are found in shallow coastal waters and like land plants seagrass does photosynthesis to make food. Since photosynthesis requires sunlight seagrass grow near the surface of the water. Seagrass get nutrients from their roots which causes them to anchor to the bottom. People can find seagrasses growing along the coastlines due to the fact that they need sunlight for photosynthesis and get nutrients from their roots.

The main impacts on seagrass include and/or the burial of vegetation and effects of increased turbidity and sedimentation from dredging and sand mining.

The scientific name for turtle grass is *Thalassia testudinum*, the scientific name for manatee grass is *Syringodium filiforme*, and the scientific name for Paddle grass is *Halophila*.



MORAY EELS

Camryn & Kendall & Sierra

MORAY EELS- *muraedinae*

What is a Moray?

Moray Eels, despite what many people might think, are actually a type of fish. The factor that classifies Morays as real eels is the fact that its dorsal fin is fused with its bone and goes all the way down its body. There are over 200 different types of Moray, and they can grow up to 13 feet.

Range and Habitat

Morays can be found in the Western Atlantic Ocean as well as the Northern parts of the Gulf of Mexico, and North Eastern South American coast. This type of eel usually lives in moderate to warm coastal waters, although some can be found in other areas, where they like to hang out in between rocks, buried in sediment, or in coral reefs.

Adaptations to Environment

They have a large range of skins that allows them to hunt prey without being noticed. Eels have a scaleless, long cylindrical body covered in mucus that allows them to swim faster. Eels have a super-developed sense of smell that allows them to locate prey. Eels have 3 rows of razor like teeth which can be used for defense but because of their shape, they have trouble swallowing so they have developed a pair of second jaws, or pharyngeal jaws.

Predator and Prey

Moray Eels mostly eat fish, squid, octopi and crustaceans such as crab, and shrimp. Their biggest threats are sharks, barracudas and humans.



Reproduction

Moray eels have no set mating season but they tend to mate when they have enough food and habitat. Warmer temperatures increase the chance of successful mating. Females hide the eggs in rocks and release an odor for that enables males to come deposit sperm. It can take 30 to 45 days (or less if the water is warm) for the young to emerge.

Behavior

Moray eels can't see very well, but they have a great sense of smell. They rely on this sense of smell to do their hunting. Moray eels usually hunt at night rather than hunting in the day. These eels can be very aggressive but usually flee rather than fight. Moray eels are very shy and will only attack humans out of self defense.

Ecology and Environmental Issues

Moray eels feed at night on fish and invertebrates that live in coral reef labyrinths - that are inaccessible for other predators. Moray eels are a species that are least concerned (not endangered).

However, the *Anguilla Rostrata*, or the American Eel, is endangered.



SEA URCHINS

Anna Arquette

SEA URCHINS - ECHINOIDEA

Diet and Predators

PLANT AND ANIMAL MATTER, INCLUDING KELP, DECAYING MATTER, ALGAE, DEAD FISH, SPONGES, MUSSELS, AND BARNACLES. THE PREDATORS ARE CRABS, SUNFLOWER STARS, SNAILS, SEA OTTERS, SOME BIRDS, FISH, AND PEOPLE.

Reproduction

IT HAPPENS ON THE OUTSIDE OF THE URCHIN. THE FEMALE RELEASES MILLIONS OF JELLY COATED EGGS TAKES A LONG TIME BEFORE THEY BECOME URCHINS 2-5 YEARS. THE TINY SEA URCHIN EGGS BECOME PART OF THE PLANKTON AND THE SEA URCHIN BABIES (LARVAE) DO NOT HATCH FOR SEVERAL MONTHS

Body Structure

THE BOTTOM SIDE OF THE URCHIN IS CALLED THE ORAL SIDE AND THE TOP SIDE IS REFERRED TO AS ABORAL SIDE. THE BOTTOM SIDE HAS ITS MOUTH AND 5 TOOTH LIKE PLATES POUTING INWARDS CALLED ARISTOTLE'S LANTERN. THE TOP SIDE HAS THE ANUS. SPHERICAL SHAPE IS TYPICALLY SMALL, RANGING FROM ABOUT 3 CM TO 10 CM IN DIAMETER, AND THEIR BODIES ARE COVERED WITH A SPINY SHELL.

Random facts

POLLUTION IS KILLING THE SEA URCHINS. THEY SPAWN IN THE SPRINGTIME. SEA URCHINS ALSO HAVE LITTLE CLAW-LIKE STRUCTURE AMONG THEIR SPINES WHICH THE SEA URCHIN USES FOR PROTECTION.

Adaptations to Environment

SEA URCHINS HAVE SEVERAL ADAPTATIONS TO HELP THEM SURVIVE. TO PROTECT THEMSELVES FROM PREDATORS, SEA URCHINS WILL REACT IMMEDIATELY IF SOMETHING SHARP TOUCHES THEIR SHELL AND THEY WILL POINT ALL OF THEIR SPINES TOWARDS THE AREA BEING POKED. THEY ARE ALSO LIGHT-SENSITIVE. THIS IS WHY THEY ARE NOCTURNAL.

Habitat

SEA URCHINS CAN BE FOUND ALL OVER THE WORLD IN ALL OCEANS, WARM OR COLD WATER. THEY ARE FOUND IN TIDEPOLS. ROCK POOLS AND MUD, ON WAVE-EXPOSED ROCKS, ON CORAL REEFS IN KELP FORESTS AND IN SEAGRASS BEDS. THEY LIKE TO LODGE THEMSELVES HALF WAY INTO OBJECTS FOR PROTECTION AGAINST WAVES.



Tide Pools

Paicyn Dragoo and Natalie Hurd

Tide Pools



Where: Tidepools are commonly found in intertidal zones and rocky coastlines.

What: Tidepools consist of large rocks, pools of seawater, some plant life, etc. They vary in size, and can range from being small and shallow to wide and deep. Most of the time the water is warm due to exposure to the sun as well.

Human Impact: Humans tend to harvest animals from tidepools, which can cause a decrease in some populations.

Housing: They house many sea creatures such as: small fish, star fish, hermit crabs, mussels, barnacles, anemones, eels, small crabs, urchins, etc. Animals in tidepools have to be able to adapt/survive in wet or dry conditions.

Predators and Prey: In tidepools there are many different predator/prey situations. For example, crabs are predators for worms, clams, snails, mussels, sea urchins, e

Protecting Tidepools: Be respectful to the animals and the environment. Always watch where you step, and be cautious of your surroundings.



TUBE WORMS (RIFTIA PACHYPTILA)

By Marissa Wagner, Zoe Templeton, and Xavier Cole

TUBE WORM LIFE

Habitat: Tube worms usually live in colonies near the mid tide level, in rocky shores. They find places in cracks and rocky areas with controlling currents. They also live at the bottom of the ocean in long tubes (made from chitin), like their name. The tubeworms filter sea water in these areas.

Range: The tubeworms are found throughout the Pacific Ocean, especially in the East.



Diet: The bacteria the tubeworms have in their body spew out vents into worm food. The food process is chemosynthesis.

Adaptations for environment: Tubeworms have a red plume that is capable of exchanging oxygen and carbon dioxide. They have no digestive system, instead they have bacteria living inside of them to provide nutrients. By using this bacteria worms do not use the sun as a form of energy. The plume is able to retract from the body when the worm feels danger at any time. Their tough outer shell is made of chitin, which is made of crustacean shell and can protect the worms in extreme heat.

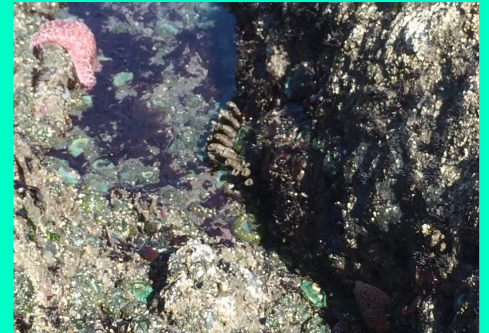
Reproduction: Tube worms reproduce by delivering their eggs into the water. When the eggs go into the ocean, they are fertilized and hatch. The baby tubeworms (larvae) stick themselves to rocks and slowly get bigger. During their growth, they have a mouth and gut that bacteria enters through. When they are older, their mouth and gut disappear and the bacteria remains inside of them.

Environmental and Ecology Issues: Tubeworms are sometimes threatened by hydrothermal vents (cracks in the ocean floor that produce hot water), and eruptions of underwater volcanoes. If vent fluids were to stop flowing, it would change the surrounding waters which could end up killing tubeworms.



Behavior: Tubeworms might not seem like much, but they are able to withstand lots of underwater pressure and big temperature changes. They can survive in water that's only a few degrees above freezing, and water that is warm.

Predators: Predators of baby tubeworms are filter-feeding fishes. Some of their own kind can even be a threat. Predators of adult tubeworms are crabs (who bite off their heads), and fish.



Sea Stars (Purple)

Conner, Alex, Ben





Behavior

A nerve ring encircles the mouth and connects with five radial nerves, which extend the length of the arms, below the radial canals of the water vascular system. It relays impulses between the radial nerves, so that one arm can lead while the others follow. They move with tube feet.

Where they are Found:

Purple stars are most common in the Pacific Northwest

Diet

Pisaster ochraceus feeds on mussels, chitons, and limpets, which they slowly pry open and devour. Snails, barnacles, echinoids, even decapod crustacea are also eaten. *Pisaster ochraceus* everts its stomach over the prey if it is too large to be swallowed whole, and digests the prey before swallowing it. Seals and some larger animals hunt Purple Starfish

Development

Pisaster ochraceus develop through larval stages. Using ciliated arms to sweep food into its mouth and glides through the water columns. The five-armed adult is formed because it undergoes metamorphosis. The male gametes develop, but later only females ones are produced. During a transitional period, both eggs and sperm are produced. Breeding season is in the spring

Cnidaria

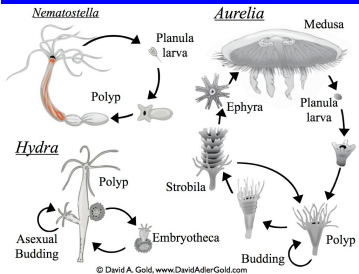
By: Bryerlee, Hope and Trevor

Jellyfish, Sea Anemone and Coral -Cnidaria

Ecology and environmental issues: With the pollution in the air that is being taken it to the ocean and killing them. Then there is the plastic in the ocean that is killing them also



Reproduction: Cnidaria reproduce sexually that includes a very complicated life cycle.



Behavior: Most of them have tentacles to catch their prey. There are also the ones that move and the ones that don't like jellies they move freely, then there is the Sea Anemone and the corals that stay where they are.

Adaptations: They have adapted to have things to protect them like having the ability to sting its predators. They also adapted to have be made of mostly water



Habitat: Cnidarians live in all depths of their aquatic environment. They can be found in waters from the chilling waters of the Arctic to the warm waters in the tropics and everywhere in between.

Predator/Prey: Cnidaria have many predators like other species of jellies. Others would be sea slugs, starfish, butterflyfish and parrotfish then there are sea turtles that eat the jellies. Sea Anemone, they eat plankton and small fish. Coral eats other small algae. Lastly jellies eat plankton and smaller fish

Arthropods (Crustaceans)

Nicole Jordan and CJ Anderson

Crustaceans are part of a larger group of animals called Arthropods, which also include insects and arachnids. Crustaceans live in many environments, from tide pools to deep ocean. Members of the crustacean family include crabs, lobsters, shrimp, crayfish, krill, and barnacles.



They have 3 main parts: Head, thorax, and abdomen. Although they do have legs 6-14 pairs of jointed legs.



Crustaceans are mainly scavengers, but some crabs and lobsters are active predators. Some, such as barnacles, are filter feeders.



Σ©ℋiⓃΩΔΣ®Π§
(echinoderms)

By, Trace Erwin & Parris Nicholson

Echinoderms are located all over the world. at almost all depths, latitudes, and environments in the ocean. Echinoderms are a marine invertebrate of the phylum. Echinoderms are many different type of creatures some include Starfish, Sea urchins, sea cucumbers, Crinoid and many others.

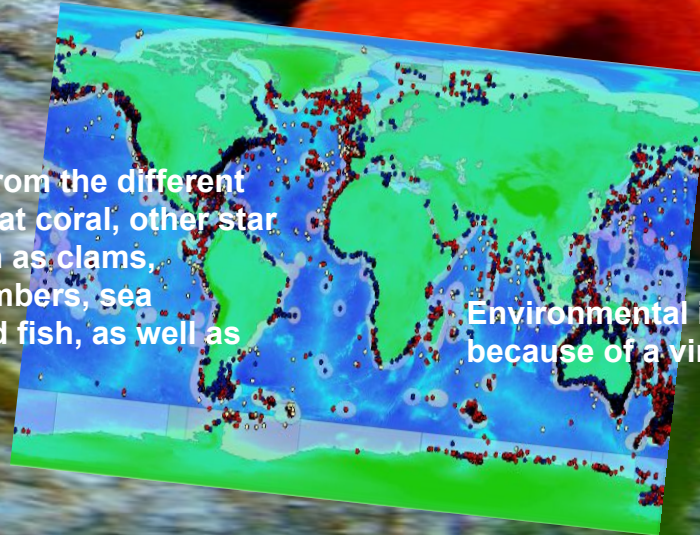
Starfish are called (Asteroidea)

Habitat: there are over 2,000 species of sea star living in all the world's oceans, from tropical habitats to the cold seafloor. They can grow over a foot long and some can have up to 40 arms.

Diet: star fish's diet can range from the different types of star fishes. Some will eat coral, other star fishes. Some eat bivalves, such as clams, mussels and oysters, sea cucumbers, sea urchins, shrimp, tubeworms and fish, as well as algae and sea grasses.

Adaptations: Many wear striking colors that camouflage them or scare off potential attackers.

Reproduction: Asexual reproduction in a star fish takes place by fission or through autotomy of arms. In fission, the central disc breaks into two pieces and each portion then regenerates the missing parts.



Environmental issues: Lots of sea stars are dying because of a virus

AHS SAYS:
THANK YOU!!!
BYE!