

Oceans Animal Facts

COMMON/SCIENTIFIC NAME: Green Sea Urchin
(*Strongylocentrotus droebachiensis*)

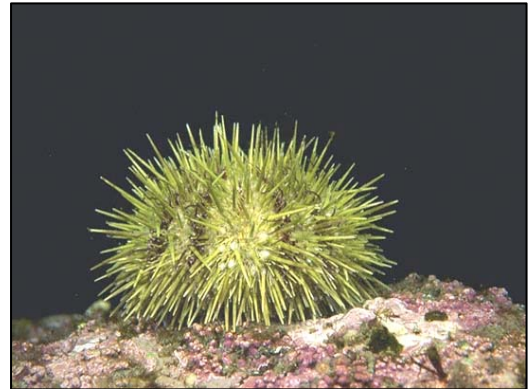
TERMS: *Male*- Male *Female*-Female *Young*-Larvae and Juvenile

DISTRIBUTION: Green Sea Urchins can be found in the Pacific Ocean from Arctic regions to Puget Sound and in the Atlantic Ocean from the Arctic to New Jersey.

HABITAT: Green Sea Urchins are found on rocky shores and in kelp beds; from low-tide line to water 3795 feet deep.

DIET: *Wild* – Green Sea Urchins feed on kelp, green algae, seaweed and scrape diatoms and coralline algae off rocks. They will also feed on dead fish and decaying matter.

Zoo – Scavengers, algae



PHYSICAL DESCRIPTION: Sea urchins are spiny sea creatures of the class Echinoidea. The name sea urchin means sea hedgehog, hedgehog being the Greek meaning of the word urchin. Their shell, which is also called a 'test', is made of skeleton-like plates that are fused together. The test is globular in shape, and covered with spines. Sea urchins are echinoderms (phylum *Echinodermata*), which also includes, but is not limited to, sea stars, sand dollars, sea cucumbers, and brittle stars. Like other echinoderms they have five-fold or pentamerous radial symmetry and move by means of hundreds of tiny, transparent, adhesive "tube feet." The pentamerous symmetry is not obvious at a casual glance, but is easily seen in the dried shell of the urchin. At first glance a sea urchin often appears to be an inanimate object, or one which is incapable of moving. Sometimes the most visible sign of life is the spines, which are attached at their bases to ball-and-socket joints and can be pointed in any direction. In most urchins, a light touch elicits a prompt and visible reaction from the spines, which converge toward the point that has been touched. The spines serve to protect the urchin from predators. A sea urchin has no visible eyes, legs or means of propulsion, but it can move freely over surfaces by means of its adhesive tube feet, working in conjunction with its spines. On the oral (underside) surface of the sea urchin is a centrally located jaw. It is surrounded by five horny wedges or teeth. Sea urchins eat using these five sharp wedges that come together like a beak and that are moved by muscles. The whole muscle and beak structure is called Aristotle's lantern. Aristotle's lantern is one of the most complex feeding structures of any animal in the world. This beak-like device allows the urchin to scrape algae off the hard reef coral and rocks. Even as the sharp wedges wear down from harsh use, they continue growing. The urchin can pull or push Aristotle's lantern into and out of its body.

Coloration: The Green Sea Urchin has a brownish-green test (shell) with spines that are light green, gray-green, or, more rarely, brownish- or reddish-green. The tube feet are brownish in color.

Size: The Green Sea Urchin grows to 3.25 inches in diameter and 1.5 inches in height having a low, flat profile with crowded short spines and an oval test.

REPRODUCTION/GESTATION: Sexes are separate (dioecious) in the Green Sea Urchin and fertilization is external. Sea urchins reproduce by spawning or releasing eggs and sperm into the ocean at the same time. Females can produce thousands to millions of jelly covered eggs at each spawn. Urchins go through five growth stages. During the first month, the larvae freely float around looking like tiny jelly beans. They can barely be seen by the eye and feed on tiny plants and animals floating in the ocean. The

baby urchin then metamorphoses or changes shape starting to develop into a miniature adult. For the next few months, this juvenile slowly grows, finds a hidden home under reef rock and rubble, and begins feeding on algae. After they become large enough, these urchins emerge and begin to travel in search of food. Reproduction occurs on an annual cycle with spawning occurring in the spring, generally between February and May, but sometimes as late as June.

LONGEVITY: Insufficient data.

ECOLOGY & CONSERVATION: *Status in the wild* – The Green Sea Urchin is not listed in the IUCN Red List as endangered or threatened at this time.

GENERAL INFORMATION:

- This spiny creature is painful if stepped on.
- There are approximately 700 different species of sea urchins worldwide. Many sea urchins have venomous spines. The largest sea urchin is the red sea urchin (*Strongylocentrotus franciscanus*); it has a test about 7 inches in diameter.
- Sea urchins play an important role in the ecology of coral reefs. A variety of species inhabit the reef environment, each one occupying a slightly different habitat, or feeding on a slightly different type of food. Their presence, together with the presence of a group of herbivorous fishes, helps to keep the coral reef from becoming overgrown and smothered with algae.
- Humans consume the reproductive organs of sea urchins ("roe") either raw or briefly cooked. Sea urchin roe is a popular food in Korean cuisine, and it is called "uni" in Japanese sushi cuisine. It is also a traditional food in Chile, known as an "erizo".
- The bare shells ('tests') of dead sea urchins are sometimes found on beaches, and are often sold in seaside souvenir shops.
- The sea urchin occupies a special place in biology due to its long-time use as a standard subject for studies in embryology.

SOURCES:

1. <http://www.afsc.noaa.gov/kodiak/photo/misgrurch.htm>
2. <http://www.marlin.ac.uk/species/Strongylocentrotusdroebachiensis.htm>
3. http://www.nwmarinelife.com/htmlswimmers/s_droebachiensis.html
4. <http://www.pdza.org/files/library/9e8d72132dd2979f.pdf>
5. <http://elements.nb.ca/theme/wildlife/chris/chris.htm>

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