SEA CUCUMBERS

SCIENTIFIC CLASSIFICATION

COMMON NAME:	sea cucumbers
KINGDOM:	Animalia
PHYLUM:	Echinodermata
CLASS:	Holothuroidea
ORDER:	
FAMILY:	
GENUS SPECIES:	About 1,150 species

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FAST FACTS

DESCRIPTION:	Like other echinoderms, sea cucumbers are radially symmetrical, but in a longitudinal way. The body shape varies from almost spherical to long and wormlike. Most sea cucumbers are black, brown, or olive green.
SIZE:	0.03 m to 1 m in length (0.098–3.28 ft.)
LOCOMOTION:	Sea cucumbers move using tube feet. The tube feet of some sea cucumbers are distributed over the entire body, some are concentrated on a “ventral” surface, and some are restricted to rows along each radius. As in other echinoderms, sea cucumbers’ tube feet operate using a water vascular system.
DIET:	Plankton and detritus
FEEDING:	The mouth of a sea cucumber is not directed downward like other echinoderms; it is located anteriorily. The sea cucumber has a ring of mucus-covered tentacles circling the mouth. Food particles are trapped in the mucus and are wiped off as the sea cucumber pulls its tentacles out of its mouth. They can be either suspension or deposit-feeders.

REPRODUCTION:	Sea cucumbers are either male or female. Eggs and sperm are released into the water, where external fertilization takes place.
RESPIRATION:	Sea cucumbers have large respiratory trees used for oxygen exchange. Water is forced to the respiratory trees through the cloaca. This process may take six to ten minutes. All of the water is expelled in one contraction.
LIFE SPAN:	Approximately 5 to 10 years
RANGE:	All oceans
HABITAT:	Benthic and burrowing in sand or mud, or pelagic

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FUN FACTS

1. Echinoderm is a Greek word meaning “spiny-skinned”. Animals in the phylum Enchinodermata all share a few common characteristics:
    - Endoskeleton (internal skeleton) – made up of ossicles, a type of calcareous structure
    - Tube feet
    - Radial symmetry in adults – the adult body symmetry radiates around a central axis. The pattern of symmetry is pentamerous—it occurs in five or multiples of fives.

2. Different species of sea cucumbers have different reactions to predators. Most sea cucumbers contract their body wall, pulling the ossicles close together. This makes the sea cucumber smaller and more rigid, and perhaps less appetizing or harder for a predator to swallow. Some sea cucumbers secrete toxic substances that can be harmful to animals that ingest it. Some species defend themselves by eviscerating (expelling their entrails), leaving the entrails to the predator while the sea cucumber slips away. They are able to regenerate the lost organs. Some species expel special Cuvierian organs that form masses of sticky tubules, which entangle predators.

3. Sea cucumbers are the only pelagic echinoderms. Some are deep-sea forms that swim slowly over the bottom. They have even been encountered at shallow depths in the icy waters of the Southern Ocean.

4. Pearlfishes, *Carapidae,* are parasitic fishes that often use sea cucumbers as hosts.

5. For more information, visit the Tide Pool Infobook.

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ECOLOGY AND CONSERVATION

In some parts of the world, sea cucumbers are harvested by humans. Sea cucumbers are boiled, dried, and sold as *trepang* or *beche-de-mer*, to be eaten as a high protein delicacy all over the Pacific. This leads to the global commercial harvesting of certain species of sea

cucumbers, such as the giant red sea cucumber. In a few regions, regulations are intact to prevent overharvesting. However without these regulations, a few regions have suffered from overexploitation and subsequent collapse.

Beachcombers, tidepoolers, and divers must remember not to disturb or collect any specimens that they may encounter. The removal of animals from an ecosystem may disturb ecological processes and decreased the diversity in areas that are frequently visited. Because of their specific nutritional and physiological needs, certain animals, such as sea cucumbers have a much better chance for survival in their natural environment than in an unregulated home aquarium.

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