

FACTSHEET SEA URCHINS



SPECIES

700+ worldwide

SIZE

Avg. 3-10 cm, (1-4 in)

HABITAT

Along the ocean floor in shallow to deep water, rocky bottoms, and coral reefs

TAXONOMY

Class: Echinodermata

LIFE SPAN

4-200 years. Red Sea Urchin - one of the longest lived animal on earth.

GEOGRAPHIC DISTRIBUTION

Worldwide, but rarely in cold areas or polar regions



DESCRIPTION

Dome shaped outer shell, or "test," made of fused calcium carbonate plates, covered in long, thin spines (venomous in some species). Slow moving, rely on spines for protection. Vary in color (typically black, red, brown, purple, pink).



BEHAVIOR

Nocturnal, usually hide in holes or crevasses during the day or burrow in sand. Spines used for movement, protection, and food capture (floating particles). Tentacles and tube feet aid in movement, food capture, and grasping the ocean floor.



REPRODUCTION

Sexual maturity at 2-5 years. Once a year (typically spring/summer), females release millions of eggs into water column for males to fertilize (broadcast spawning). Much of our knowledge on embryonic development came from studying sea urchins.



DIET

Omnivores. Mainly feed on decomposing matter and algae on coral and rocks. Ingest food through Aristotle's lantern (beak-type mouth with five radially symmetric plates, "teeth," located on underside used to scrape rocks clean of algae).



PREDATORS

Fish, birds, crabs, sea otters, and humans.



MAIN THREATS

- Overfished as a food source (delicacy, called "uni," in Asia/Pacific)
- Caught as bycatch in destructive fishing techniques
- Disease and predation

SPECIES IMPORTANCE

ECOLOGICAL VALUE

Critically important grazers that maintain coral reef health by eating algae, keeping existing corals from being smothered and leaving clean substrate for new coral larvae to settle.

DIADEMA ANTILLARUM DECLINE

The population of long-spined sea urchin, *Diadema antillarum*, declined drastically in the 1980s. This event significantly affected the amount of healthy coral reef cover, a trend that has continued to present day.



SOLUTIONS

- ✓ Ban the catch of sea urchins
- ✓ Enforce existing laws on sea urchins catch
- ✓ Establish no-take marine reserves
- ✓ Gather data: biological, fisheries, and stock assessments
- ✓ Advise coastal communities, fishers, policymakers, and consumers on the significance of urchins to reef health





Restoration of this keystone herbivore could serve as a tool for local reef conservation and management."

Dr. Joshua Idjadi



KEY WEBSITES

Alert Diver | *Diadema, Caretaker of the Reefs*

www.alertdiver.com/m/?a=art&id=749

The Atlantic | *The Great Sea Urchin Crisis*

www.theatlantic.com/business/archive/2014/04/the-great-sea-urchin-crisis/360491/

National Geographic | *Sea Urchin Photo Gallery*

ocean.nationalgeographic.com/ocean/photos/sea-urchins/

Science Daily | *Wildlife Conservation Society: Sea Urchins*

www.sciencedaily.com/releases/2011/01/110114164516.htm



VIDEO

Travel Channel | *Diving for Sea Urchin Roe*

www.travelchannel.com/video/diving-for-sea-urchin-12010

National Geographic | *Sea Urchin Breeding*

video.nationalgeographic.com/video/sea_urchin_breeding

BBC Nature | *Undercover Urchin*

www.bbc.co.uk/nature/life/Sea_urchin#p01jm927

Microdocs (Stanford) | *Why Are Sea Urchin Babies Like Hamburgers?*

www.youtube.com/watch?feature=player_embedded&v=nuZoHYyZap0



EXPERTS

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