

Sea Science

A Series by SCDNR Marine Resources Division

Jellies

Jellies are fascinatingly unique creatures. They lack a brain, heart, bones and blood and are composed of 95% water. Most species have little control over their movement but can deliver powerful stings to their prey. They go through a complex life cycle, reproducing both sexually and asexually. Jellies can be found drifting through oceans (and some freshwater ecosystems) across the world, as they have done for over 500 million years.

Another name used for these organisms is jellyfish, though they are not related to true fish. Most jellies are bell-shaped and possess long tentacles. The bell range in diameter from less than an inch to seven feet. The largest jelly is the Lion's Mane whose tentacles can reach over 100 ft in length. Jellies possess a nervous system called a nerve net. Their nerve net is capable of detecting light, odor and other stimuli and controls sophisticated processes such as their complex reproductive cycle. The nerve net often allows jellies to function even if missing a significant chunk of their body.

Jellies are found all over the world. Most live in shallow coastal waters but some species have been found at depths up to 12,000 feet. Jellies are capable of withstanding a wide range of temperatures and salinities. Jellies largely depend on ocean currents, tides and wind for horizontal movement. They move vertically towards the surface or to deeper waters by contracting and expelling water from their bell.

Jellies are an important part of the marine food web. They are carnivorous, feeding mostly on a variety of zooplankton and other small organisms that drift their way. Larger jelly species are capable of capturing and eating crustaceans, fish and other jellies. They have tentacles equipped with thousands of stinging nematocysts that deliver venom capable of paralyzing and killing their prey. These tentacles also defend against predators, of which they have many. In fact, the majority of marine creatures have been found to eat jellies, despite the lack of nutrition they provide. Some creatures, including the Leatherback sea turtle, are known to gorge on hundreds of jellies at a time.

Common Features of Jellies



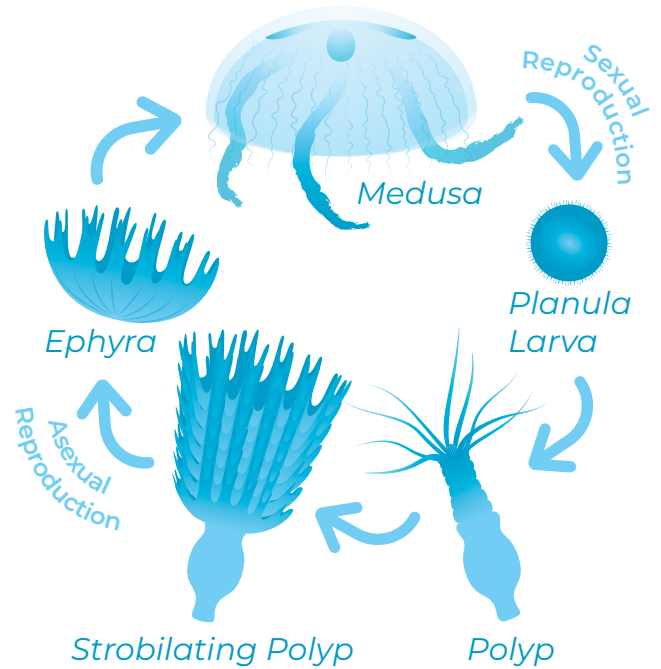
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The Complex Life Cycle of Jellies

Jellies have a complex life cycle during which they take on one of two distinct body types and reproduce either sexually or asexually. We are more likely to see and recognize jellies in the medusa form, which are free swimming and bell-shaped; however, jellies can also take a polyp form. In this form jellies are attached to a solid surface and reproduce asexually.

Medusae sexually reproduce when males release sperm into the water which are captured by female medusae. Embryos develop either inside the female or in brood pouches along the oral arms.

Eventually, small swimming larvae leave the female and enter the water column. After several days, they attach themselves to the sea floor, gradually transforming into flower-like polyps. Using their tentacles, polyps feed on microscopic organisms in the water. When fully developed, polyps strobilate to produce a stack of larvae. Each individual larva eventually separates itself from the stack and becomes a free swimming medusa. Jelly medusae normally live for a few months during which they will begin the reproductive cycle again.



Jellies found in South Carolina waters



Mushroom jelly
Rhopilema verrilli



Lion's mane
Cyanea capillata



Southern moon jelly
Aurelia marginalis



Portuguese Man o' War
Physalia physalis



Cannonball jelly
Stomolophus meleagris



Sea nettle
Chrysaora quinquecirrha



Sea wasp
Chiropsalmus quadrumanus

Portuguese Man o' War are not true jellies but are actually a colony of individual organisms that work together. Their tentacles can reach up to 100 feet. They are not deadly but stings can be extremely painful.

If Stung

Most jellies in South Carolina waters are harmless to humans. However, if stung, first carefully remove the tentacles using sand, clothing, towels or anything else available, even seaweed. Tentacles that remain on the skin will continue to discharge venom. Once removed, the best thing to do is mix vinegar and hot water and pour it over the wound. If swelling and pain from more serious stings persist, seek medical attention. Be careful when investigating jellies that have washed ashore. Although they may be dead, tentacles may still be capable of inflicting stings.