

## Unit 2: Jellyfish

**Narrator:** Jellyfish can be found all over the world, from deep oceans to shallow coastal areas. They've been around for hundreds of millions of years.

Boneless, brainless, and bloodless, jellyfish are some of the most diverse and fascinating creatures in the sea. Jellyfish aren't actually fish. With thousands of different species, in two different biological phyla, jellyfish is more of a broad term than anything else.

Unlike fish, which have backbones, jellyfish are invertebrates. Jellyfish got their common name from the jelly-like material they're made out of called mesoglea. In recent years, scientists have started using the umbrella term sea jellies to clear up the confusion.

There is an immortal jellyfish. Jellyfish can reproduce sexually by releasing sperm and eggs into the water, and reproduce asexually by splitting into two or cloning. But at least one jellyfish can actually reverse the aging process. The *Turritopsis dohrnii* has earned the nickname the immortal jellyfish for being able to undergo a process called transdifferentiation. An adult or juvenile under stress, instead of dying, can revert back to a polyp and begin the life cycle all over again. It is the only animal in the world that is known to be able to reverse its life cycle.

Box jellyfish are the most venomous marine animals in the world. Jellyfish stings are a common fear of beachgoers worldwide, and with good reason—there are an estimated 150 million jellyfish stings reported annually. And while not all jellyfish have stingers, the Australian box jellyfish, or *Chironex fleckeri*, is considered the most venomous marine animal in the world. Its deadly tentacles can grow up to 10 feet long. Humans and other animals that are unlucky enough to get stung may experience paralysis, cardiac arrest, and even death within just a few minutes.

Jellyfish are 95% water. To put this in perspective, the average adult human male is about 60% water. But jellyfish are much simpler than humans. They don't have hearts, blood, brains, or bones. Jellyfish do have very basic sensory organs in their bells and tentacles, and a simple digestive cavity which serves as a stomach, intestine, and esophagus. If a jellyfish washes up on the beach, it will mostly evaporate due to the high water content.

Groups of jellyfish are called blooms, swarms, or smacks. Jellyfish blooms can form quickly, and scientists think that the jellies get together for mating purposes. In extreme cases, the bloom can be so dense there are more jellyfish than water in a given area. They can be as small as a cubic meter, or cover hundreds of square miles. While these blooms are natural, they've caused problems all over the world, such as clogging fishing equipment in Mexico, destroying Chinese ships, and closing beaches in Australia and Europe.

There is still so much to learn about these floating, mysterious creatures. Scientists believe that there may be as many as 300,000 species of jellyfish that we haven't yet discovered.