



Jellies: Environmental Indicators

Jellies live in every ocean, thrive in coastal and open waters, and a few species even live in fresh water. We rarely notice these translucent animals but they have always been there. Because of recent jelly population changes including massive swarms, voracious eating habits, and habitat invasions, jellies are changing the balance of the earth's aquatic ecosystems.

Jelly populations appear to on the rise in many parts of the world. Massive population explosions, known as "jelly blooms" have been observed worldwide in recent years.

- Dense swarms of jellies, covering hundreds of square miles, have been observed every summer in the Gulf of Mexico's "dead zone" near Alabama, Mississippi and Louisiana. In some such areas, there are more jellies than water.
- Jelly blooms worldwide have clogged the cooling intakes on cruise ships, nuclear power plants and desalination plants.
- In 1982, the "harmless" Leidy's comb jelly, native to eastern U.S. coastal waters, was accidentally transported to Europe's Black Sea. By 1989, this invader had reproduced rapidly, devastating Black Sea fisheries and causing an estimated \$350 million loss to its fishing and tourism industries. This species invasion has now spread to the Caspian, Azov, Mediterranean, North and Baltic Seas.
- Atlantic sea nettles and non-stinging comb jellies can be found in large numbers in the Chesapeake Bay during the summer. The sea nettles are responsible for stinging 500,000 people in the bay each year.

An abundance of jellies damages aquatic ecosystems. Jellies appear to be growing at alarming rates due to their ability to adapt to the environmental changes caused by human activities such as pollution and overfishing.

- Commercial fishing activities have greatly reduced the populations of jelly-eating fish and sea turtles that are often accidentally caught and drowned as by-catch.
- Both fish and jellies feed on zooplankton. Overfishing has greatly reduced or eliminated jelly competitors leaving more food for jellies.
- Polluted land runoff makes life impossible for many aquatic species, but jellies survive, and even thrive, in polluted waters with very low oxygen.
- Warming waters caused by global warming are allowing many seasonal jellies to have longer breeding seasons, reach greater population sizes and expand their ranges.

The invasion is not ending! Scientists are still discovering new jellies—more than 50 new species have been identified in the last 20 years. One jelly can shed over 40,000 eggs every single day!

Log onto aqua.org/jellies for more details on how we can help restore ecosystems and bring the oceans back into balance.