

UNDERSTANDING OCEAN GYRES

A mass of plastic debris floats somewhere in the middle of the Pacific, trapped by the North Pacific Gyre – a slow-moving, circular current. There are actually two dumps within the gyre, which scientists estimate to be 60 years old.

Gyres are caused when high-pressure air currents move water in a clockwise spiral pattern.

The Subtropical Convergence Zone, a 6,000-mile long current, connects the two dumps.

Gentle breezes and lack of fish deter fisherman from entering gyres.

Scientists think most of the trash came from Asian countries and the United States.

No one knows the exact location or size of the dump, but scientists estimate it is more than twice the size of Texas.

Trash can take years to travel from land into the gyres.

6 months	4 years
2 years	6 years

Not much marine life live in the gyres, mostly phytoplankton and a few big fish or mammals.

Atlantic Ocean gyres exist, but no evidence shows there are garbage dumps in these waters.

AN ENVIRONMENTAL DISASTER?

The United Nations estimates for every square mile of water, there are 46,000 pieces of plastic floating in it.



80 percent of the trash comes from land; the rest come off ships, oil platforms and spilled shipping containers. LA TIMES PHOTO



Nets, debris get caught on coral reefs and boat propellers, and can choke or entangle turtles, whales, seals and other large animals. UNITED NATIONS PHOTO

Most are small pieces, about the size of confetti, making it difficult to clean up. Scientists are currently studying the dump to find a solution.

The small pieces make the trash vortex hard to detect on satellites.



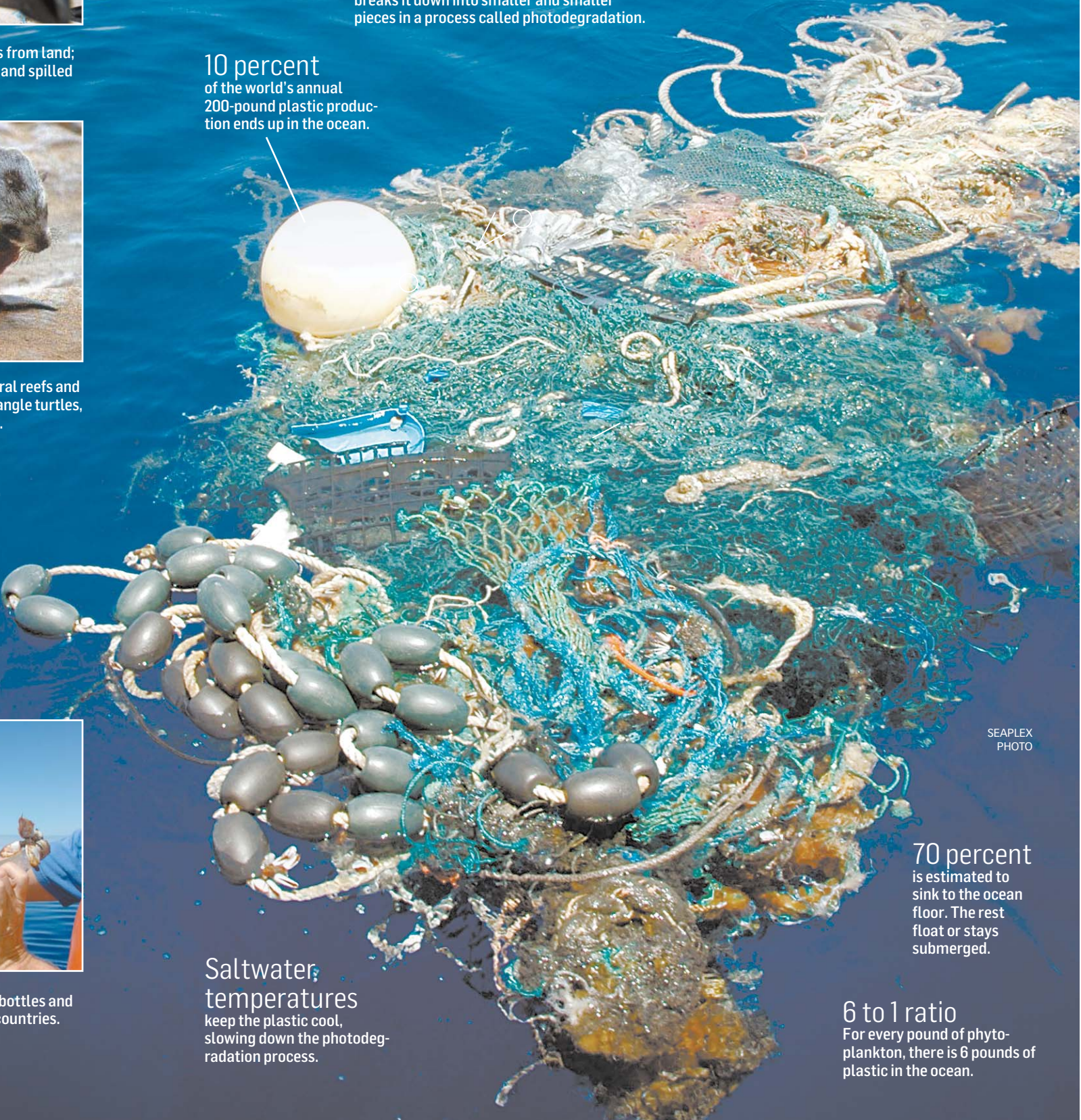
Invasive species attach to bottles and other large pieces and float to other countries. SEAPLEX PHOTO

THE GREAT PACIFIC GARBAGE PATCH

Somewhere in the North Pacific Ocean is a large, swirling mass of waste, 90 percent of which is plastic.

Plastic doesn't biodegrade, instead, the sun heats up the material and breaks it down into smaller and smaller pieces in a process called photodegradation.

10 percent of the world's annual 200-pound plastic production ends up in the ocean.



SEAPLEX PHOTO

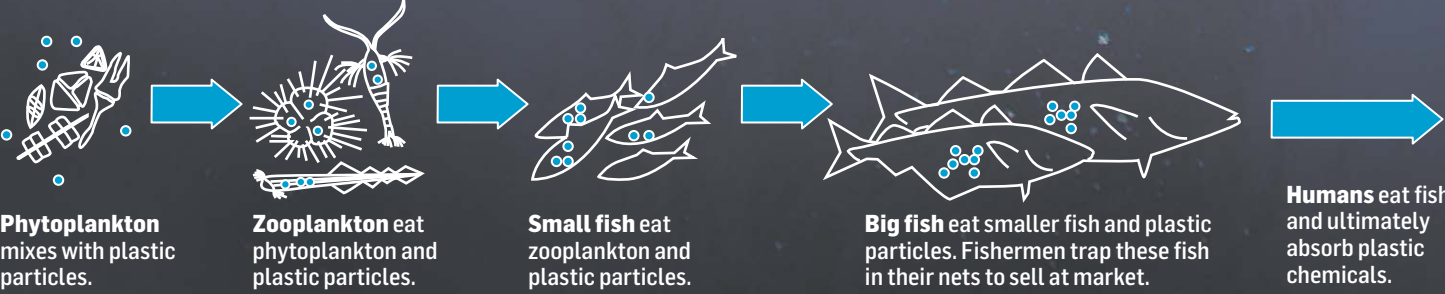
70 percent is estimated to sink to the ocean floor. The rest float or stays submerged.

Saltwater temperatures keep the plastic cool, slowing down the photodegradation process.

6 to 1 ratio For every pound of phytoplankton, there is 6 pounds of plastic in the ocean.

CHEMICAL SPONGE

Plastic is also a concern for marine life, which ingest small pieces and ultimately absorb plastic's deadly chemicals, resulting in a poisonous chain reaction.



Sources: SEAPLEX expedition, Scripps Institution of Oceanography, University of California at San Diego; Algalita Marine Research Foundation; How Stuff Works; United Nations Environment Programme; Los Angeles Times; MCT; Sun Sentinel research

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