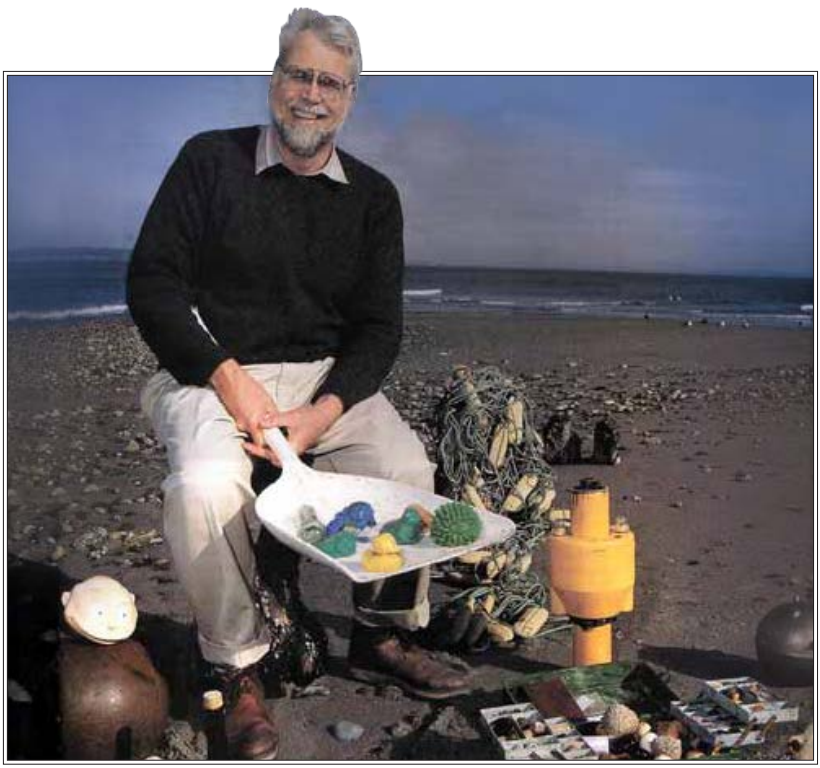
Tracking Trash

Discover how one scientist is using floating trash to study the ocean.

By Siobhán McGowan



Curtis Ebbesmeyer follows floating trash to learn about the ocean.

The world's oceans are littered with trash. According to one study, more than five trillion pieces of debris are floating around in the water. This debris can be a real problem for ocean life.

Some marine creatures get tangled in it as they swim. Others mistake it for food and choke when they try to eat it.

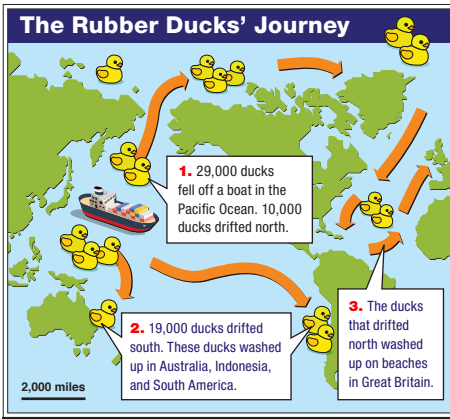
But one scientist—Curtis Ebbesmeyer—has discovered an unusual use for the trash. It can be used to follow the direction of ocean currents. And best of all? His tracking method gets people to pick up the trash.

Trash Talk

Ebbesmeyer got the idea of using trash as a tracking method back in the early 1990s. Around that time, a cargo ship sailing south of Alaska encountered stormy weather. Rough waves busted its containers open, releasing more than 60,000 brand-new sneakers into the water. Six months later, the soaked, bloated kicks started washing up on the beaches of Washington State, where Ebbesmeyer lives. The same thing happened again two years later. A storm sloshed containers off a freighter traveling from Hong Kong. It set almost 30,000 bathtub toys adrift. This time, plastic yellow ducks, green frogs, red beavers, and blue turtles began bobbing up on the shores of Alaska.

Ebbesmeyer was curious. He realized that, by tracking the trash back to the site of the spill

from wherever it washed up, he could map the patterns and speeds of Earth's ocean currents. Each rubber duckie was like a yellow dot on a graph. "These toys are giving us a chance to learn things about Pacific currents that we wouldn't otherwise know," said Ebbesmeyer.



By tracking the yellow ducks, Ebbesmeyer learned the direction of the ocean currents.

Current Events

Understanding ocean currents is important for many reasons. It helps boat captains determine the fastest and most efficient routes to take. It also helps environmentalists determine where oil spills and other forms of ocean pollution will end up. In addition, search-and-rescue crews use the information to determine where a missing ship or a person who has fallen overboard may be.

Using this floating trash to conduct his research, Ebbesmeyer has learned about a lot more than just the direction of the ocean's currents. He has also discovered how an object's

shape, size, and floating ability help determine what course it will take. For example, because of their shape, tennis balls may end up on one beach while light bulbs will end up on another. Especially surprising was his finding that right and left sneakers dumped at the same starting point end up in different spots!

On the Right Track

To track these objects, Ebbesmeyer relies on a group of volunteers around the world. They comb beaches and collect trash: sneakers, hockey gloves, bowling balls, plastic toy pieces, and fishing poles. The volunteers report their findings back to Ebbesmeyer. Some phone in to a radio talk show that he hosts. They discuss pieces of debris they've found. Ebbesmeyer analyzes all the information, adds it to his files, and sends out updates in a newsletter.

In a perfect world, the oceans would be pristine. There'd be no water pollution. But because there is, at least there are also scientists like Ebbesmeyer, picking up the trash and trying to find a silver lining by learning from it.

"I like to think that it's helping in some small way," says Ebbesmeyer.

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