



A father and son in Manila, Philippines, paddle through a river full of plastic and other trash searching for bottles to sell.

HOW PLASTIC IS TRASHING THE PLANET

Plastic was invented to make our lives better. But our dependence on it has created an environmental crisis. Can we reduce our use before it's too late?

BY LAURA ANASTASIA

Beep! Beep! Beep! The alarm on your cell phone shakes you from sleep. You stumble to the shower, get dressed, and brush your teeth. You run a comb through your hair. There is just enough time to grab a cereal bar and a bottle of orange juice before the school bus rolls down your block. Throwing your binder, folders, and a bag of chips into your backpack, you race out the door.

You have been awake for barely an hour. But you have already used or touched plastic dozens of times. The material is a big part of our lives. It is in everything from electronics and food packaging to medical devices and airplanes. Most plastic is human-made. It is produced using oil and other **fossil fuels**.

What makes plastic so popular? Unlike natural materials such as wood and

glass, plastic is lightweight. It is also cheap and durable.

But the very qualities that make plastic so useful to us also make it incredibly dangerous to the environment. Plastic does not just go away. Instead, it breaks down into

very small pieces over time. Those pieces will stick around for hundreds of years, perhaps even thousands of years.

For decades, people have sipped from plastic straws and carried groceries in plastic bags without a second thought. Much of that plastic is used only once. And it all has added up. Worldwide, we have produced a shocking 9.2 *billion* tons of plastic since the 1950s. (Think of it this way: The Statue of Liberty is one of the heaviest statues in the United States. It weighs 225 tons.)

Where does all our tossed-out plastic go? Only a small amount of it is ever recycled. Much of the rest ends →



In a 1955 photo from *Life* magazine, a family celebrates the convenience of single-use plastics.

up in the ocean. That threatens the lives of the creatures that live there.

The problem is huge—and expected to get worse. “The amount of plastic produced is growing more and more rapidly,” warns Ted Siegler. He is a global waste management expert. It is estimated that we will have created 13 billion tons of plastic waste by the year 2050.

That is why individuals, companies, and even entire countries around the world are working to reduce their use of plastic. But will those efforts be enough?

The Rise of “Throwaway Living”

Synthetic, or human-made, plastic was invented in the early 1900s. But production started to soar during World War II (1939-1945). Natural materials were in short supply during the war. That is why people turned to plastic. They used it to help make lightweight planes, parachutes, and supplies.

Because plastic was cheap and plentiful, manufacturers continued to use it after the war. Production really increased when companies began to make household goods with plastic. For example,

they started making plastic plates, cups, and utensils. Such items were marketed as disposable and a way to save precious time.

A 1955 *Life* magazine article titled “Throwaway Living” celebrated the plastic revolution. The piece shows a smiling family tossing plastic plates and utensils into the air. The article notes that those items would typically take hours to wash and dry after use. It says that now “no housewife need bother.” People could make their lives easier by simply throwing out their family’s plasticware after every meal.

In many ways, plastic *has* made our lives easier. More important, the material actually helps save lives every day. Plastic is in car seat belts and airbags. It is in the helmets that firefighters and soldiers wear. And it is in the incubators that help keep premature babies alive.

Such products are designed to last for years. But about 40 percent of all plastic produced is meant to be used just once, then thrown away. Disposable items are driving up the amount of plastic waste we produce. This includes the sandwich bags that hold your lunch and the ketchup packets at your favorite fast-food restaurant. It includes the packaging of things you buy online.

Experts say it is the plastic we use once and toss away that is putting the environment in crisis.

**448
MILLION**
Tons of plastic produced globally in 2015

SOURCE:
National Geographic

Asia’s Trash Problem

In your town, workers probably pick up garbage regularly and cart it off to landfills. But imagine if the trash in your neighborhood was *never* collected. All that garbage would pile up.

Scientists studying the Pacific Ocean found all this plastic trash inside the stomach of a sea turtle, similar to the one pictured below.



“I want the next generation to grow up caring about nature.”

As an aquarium volunteer, Shelby O’Neil, 17, learned firsthand how plastic can endanger marine life. So she did something about it.

I’ve always loved the ocean. In seventh grade, I started volunteering at the Monterey Bay Aquarium in California. I was really upset to learn that many sea animals eat plastic trash, thinking it’s food.

I decided to do something to educate people about this problem. In 2017, I founded Jr Ocean Guardians as part of my work with the Girl Scouts. We hold presentations at schools to teach kids about plastic waste.

I wanted to reach businesses too. I decided if I learned of a company that used a lot of plastic, I’d send it an email urging it to cut back. *What’s the worst that could happen if they don’t respond?* I thought.

One day, I saw a commercial

for a health-care company. People in the ad were using plastic straws. I googled the contact info of the company and emailed its president. In my message, I told him how plastic can harm the environment. I asked him to consider using more **sustainable** options.

I was so excited when he wrote back! He said he had been thinking about reducing plastic waste. After reading my letter, he made sure the company cut its use of plastic straws, drink stirrers, and cup lids in half.

I kept going. Whenever I heard of businesses using plastic, I’d send an email. One of the biggest companies I



emailed was Alaska Airlines. A company representative wrote back and told me the airline was switching from plastic to paper stirrers on all of its 1,200 daily flights.

I always tell people: Everyone can make a change. Look for small things you can do because they add up.

by Shelby O’Neil, as told to Nell Durfee

In some countries, that is a fact of life. It is particularly true in certain island nations in Asia. They do not have reliable trash collection. They also lack properly maintained landfills. Instead, people leave their garbage in heaps on the ground or dump it into local waterways. Eventually, it is swept out to sea. Experts estimate that 9 million tons of plastic end up in our oceans each year.

To make matters worse, people in these largely poor Asian nations have started using more single-serve packets of things like condiments, detergent, and shampoo. Many of them cannot afford to buy bigger sizes. All that nonrecyclable plastic packaging only adds to the problem.

In the Philippines, for example, some rivers are badly clogged with trash. People can hop across those rivers on piles of tossed-out plastic instead of crossing by bridge.

How Plastic Kills

When plastic waste ends up in the ocean, the results are often tragic. Earlier this year, rescuers found a sick pilot whale near the shore of southern Thailand. It could not swim. In fact, it could hardly breathe.

Later, as veterinarians took care of the animal, it vomited five plastic grocery bags. The whale died shortly after. Tests later showed that it had more than 17 pounds of plastic in its stomach. That included another 80 or so plastic bags.

That is just one example of how plastic can be deadly to animals. Nearly 700 ocean species have been harmed by plastic. Species from zooplankton and fish to sea turtles and dolphins have been affected. The damage ranges from eating plastic to getting stuck in it. For example, some animals get trapped in plastic six-pack drink holders. Others, →

18%
Percentage
of plastic
that is
recycled
around
the world

SOURCE:
National Geographic

including many bird species, suffocate inside plastic grocery bags.

And, of course, many sea creatures eat plastic, as the pilot whale did. In the ocean, sunlight, waves, and heat often break down plastic. It winds up in pieces tinier than a pinkie fingernail. Such bits are called microplastics. Over time, they become coated with **algae**. That makes the bits of plastic smell like food to many animals.

Some sea creatures are fooled into thinking microplastics are real food. They stuff themselves with it. Then they do not have room in their stomachs for any actual food. They die from starvation.

Eating plastic hurts animals in other ways too. The toxins in the plastic can seriously affect their behavior and digestion, and the **ecosystem** as a whole, says Matthew Savoca. He is a scientist who studies the effects of plastic on marine life.

“It affects not just the individual animals that eat plastic, but the animals that eat those animals,” he says.

Putting Plastic in Its Place

Many people are trying to help solve the world’s plastic crisis. In the United States, for example, plastic grocery bags are now banned or taxed in some cities. Such cities include Seattle and Washington, D.C. And there is a nationwide movement to encourage people to stop



A stork trapped in a plastic bag at a landfill in Spain. The photographer freed the bird after taking this picture.

What You Can Do

Experts say the key to solving our plastic waste crisis is to simply use less of the stuff in the first place. Here are some easy ways to do that.

SAY NO TO STRAWS

Americans throw out 500 million plastic straws every day. Opt for paper or reusable metal straws—or skip them altogether.

DRINK SMARTER

Nearly 1 million plastic beverage bottles are sold every minute around the world. Sip from a reusable drinking bottle instead.

PASS ON PLASTIC BAGS

Take reusable shopping bags with you to the store. You’ll help cut down on the 1 trillion plastic bags that are used around the world each year.

PAY ATTENTION TO PACKAGING

Encourage your parents to buy products such as bar soap and boxed laundry detergent instead of versions of those items that come in plastic bottles.

using so many plastic drinking straws. Some countries are taking even bolder steps (*see “How Countries Are Cutting Down on Plastic”*).

Some global companies, including Starbucks and Hilton Hotels, recently announced plans to reduce or end their use of plastic straws. And earlier this year, Alaska Airlines switched from plastic stirrers to paper ones on its flights. This was thanks in part to one teen’s letter (*see sidebar*).

What is more, last December the U.S. and 192 other countries passed the United Nations Clean Seas agreement. That pact is a formal declaration that those countries aim to stop polluting the oceans with plastic waste.

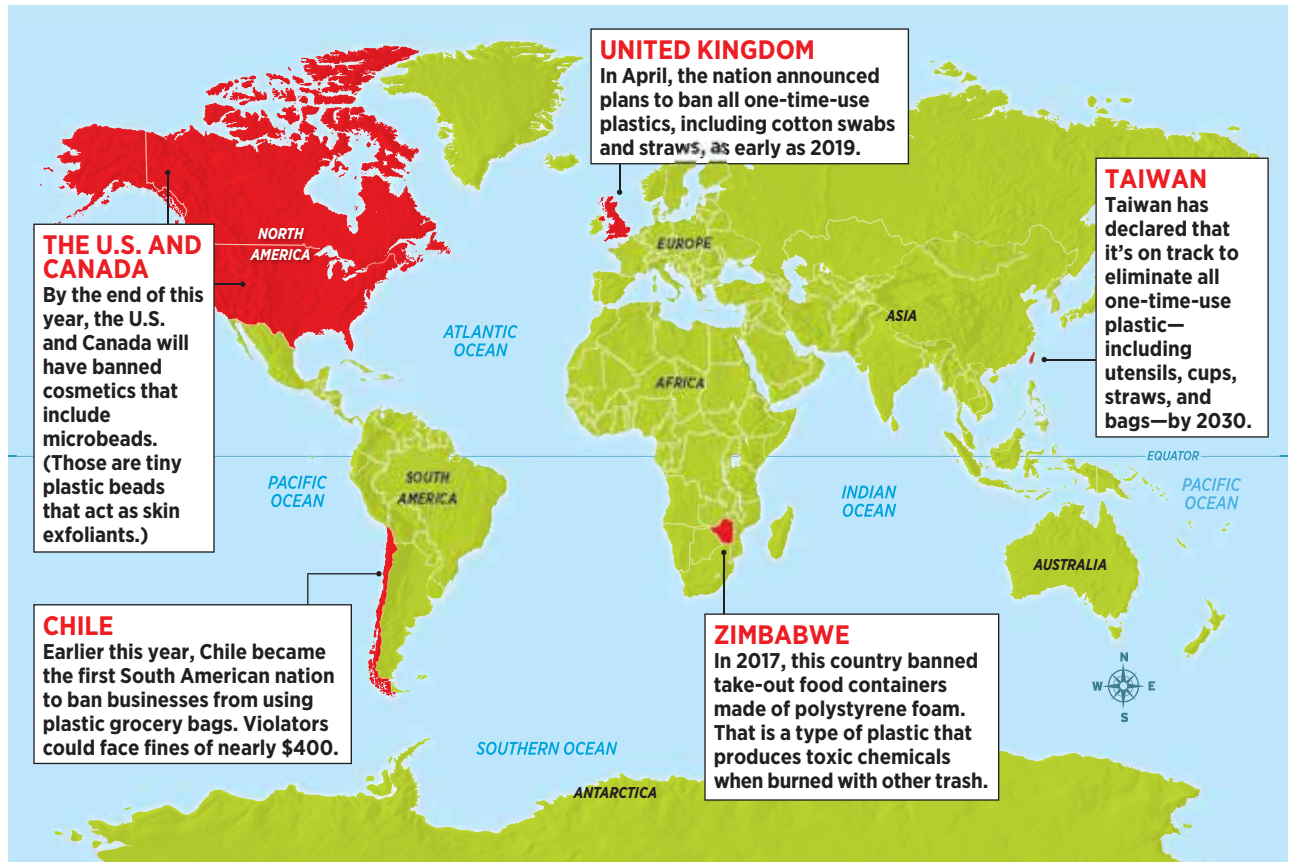
Experts say such steps are promising, as long as the efforts ultimately include funding. The efforts also must include the manpower to help developing countries manage their plastic trash.

“We need to develop waste-collection systems around the world that are capable of managing the waste that is being generated,” Siegler says. “That’s really the key issue.”

Individuals also have an important role to play (*see “What You Can Do”*). Experts advise focusing on plastic

How Countries Are Cutting Down on Plastic

Here are a few of the many countries taking big steps to reduce different types of plastic waste.

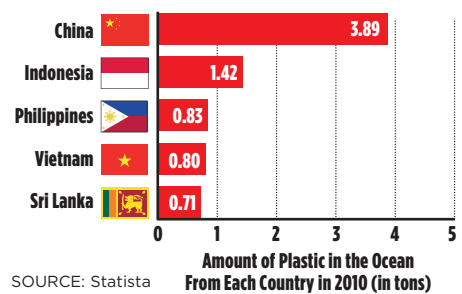


Map Skills

1. Which country banned a type of take-out container?
2. What will be banned in the United States and Canada by the end of this year?
3. Which country was responsible for the most plastic in the ocean in 2010?
4. Which ocean borders most of Chile?
5. How much plastic ocean waste came from the Philippines in 2010?
6. Which labeled countries are south of the equator?
7. How much could businesses in Chile be fined for using plastic grocery bags?
8. Which labeled countries plan to ban plastic straws?
9. What does Taiwan plan to do by 2030?
10. Which country was responsible for twice as much plastic waste in the ocean in 2010 as Sri Lanka?

Where Most Ocean Plastic Comes From

In 2010, half of the world's mismanaged plastic waste came from five nations. This graph shows how much waste from each of those nations ended up in the oceans.



meant for one-time use. Either reuse those items or avoid buying them in the first place, they say.

“When I was a kid, Ziploc bags were a single-use item,” Savoca says. Now when he and his family use plastic bags, they treat them like Tupperware. “We wash them and reuse them and don’t get rid of them

until they’re practically destroyed. If more people do things like that, it would make a difference.” ♦



WRITE ABOUT IT!

What are some obstacles to reducing plastic pollution? Cite evidence from the text.