

## Pollution and Conservation

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# Space Junk

You can't see them, but millions of pieces of junk are flying around Earth. The junk is called **debris** (deh-BREE). It includes parts of old satellites. The largest piece of debris is part of a rocket and about the size of a car. The tiniest pieces are flecks of paint.

The debris can damage working satellites. It can also hit old satellites and break them apart. That creates more space trash.

Scientists are tracking the pieces of debris in space. However, that is not easy. "All working satellites and debris are moving very fast, and in all different directions," says NASA scientist Nicholas Johnson. NASA is the U.S. space agency.

Can scientists solve the space junk problem? "Countries around the world have agreed to reduce the amount of new space junk," says Johnson. "We are working on getting rid of the old stuff, but we haven't figured out how yet. The good news is that we caught this before it started to get out of hand."



NASA

*The dots show objects in Earth's orbit that are being tracked by scientists.*

## Water Worries

### Almost 1 billion people don't have clean water, a report finds.

What do you do when you're thirsty? Chances are you get a glass of water from the sink. Not everyone can do that. In fact, almost 1 billion people around the world don't have clean drinking water.



AP Images

*A boy in Africa stands near a water pump. It is the only source of water in his village.*

That's the finding of a report by world aid groups. The study looked at the living conditions of people around the globe. Many have to walk hours each day to collect water from rivers. Often that water is not safe to drink, because it's dirty.

About 2.6 billion people don't have safe places to go to the bathroom, the report says. Lakshmi grew up in a poor village in India. That is a country in Asia. For a long time, her school did not have bathrooms. She and her classmates had to use bushes outside.

World leaders say it's important for kids to have good hygiene, or cleanliness. Drinking clean water and washing your hands after using the bathroom can help prevent diseases.

Aid workers have been helping by installing pipes around the world. To install is to set up. The pipes have given people water in their homes. Aid workers also have been teaching people how to filter, or clean, rain water. They even have built bathrooms. That's made a difference

for Lakshmi. "My school has toilets now," she said.

Still, there is a lot more to do, aid worker Clarissa Brocklehurst says. "We must act as one ... community to [supply] water and [good hygiene] for all."

## Watch Your Water

How much water do you use? A lot! On average, each American goes through about 100 gallons of water a day. That's enough to fill 1,600 drinking glasses! Here are some tips to conserve, or save, water.

**Cut while you paste.** Keep your pearly whites clean, but be sure to shut off the faucet while you brush. That can save about 8 gallons of water a day.

**Clean up your act.** Put away that rubber ducky. Taking a bath can use up to 70 gallons of water, while showering uses just 10 to 25 gallons of water.

**Drop the drips.** In one day, a faucet can drip more than 20 gallons of water, and a leaky toilet can waste 200 gallons! Ask an adult to stop the drips.

# There's No Place Like Home

by Barbara Bakowski

## You Can Clean Up Your Community

*Pollution.* That word might make you think of black oil floating atop ocean water. You might think of gray exhaust pouring from factories. Or you might picture chemicals being sprayed on crops. But other forms of pollution threaten your well-being too.

Consider your "personal environment"- say, a 10-mile-wide circle around your home. What disturbs your enjoyment of those surroundings?

## Cut Down the Noise

Noise is the number-one complaint of U.S. citizens. Noise stands ahead of crime, litter, and traffic, according to a U.S. Census Bureau survey. Does the noise of leaf blowers bother you? Do construction sounds ruin your day? Unpleasant human-made sounds are *noise pollution*, which comes from many sources.



Photos.com

*photos.com- Noise pollution is a growing problem.*

Loud noise can damage hearing. Even low-level noise can disturb sleep and give you

headaches. It can cause blood pressure to rise. Noise can ruin digestion and make you feel anxious, according to the American Speech-Language-Hearing Association.

The Council on the Environment of New York City offers these tips to cut noise:

- **Turn it down! Keep music and television volume low.**
- **Help keep your pets quiet.**
- **Encourage your family and friends to use quieter vehicles and appliances.**

## Turn Down the Light

The attack on your senses isn't limited to hearing. *Light pollution* is a problem too. Artificial light comes from sources such as streetlights and offices. *Light trespass* happens when unwanted light enters someone's property. *Sky glow* occurs when light shines upward. It reflects off moisture and dust in the atmosphere. The result is a haze that makes it hard to see stars in the night sky.

Some researchers say artificial light disturbs sleep cycles. That can make it harder for the body to fight diseases. Stray light can cause *insomnia*-an inability to sleep. And that can cause daytime problems. People who don't sleep are often crabby. They can have a hard time concentrating.

The International Dark-Sky Association offers the following advice.

- **Ask yourself, "How much light do I need?" Use lighting only when you need it, and use the right amount of light for the task.**
- **Use timers to control lighting and save energy.**
- **Inside and outside your home, check that light is directed downward, where it is effective.**

## Clear the Line of Vision

*Visual pollution* refers to sights that people find ugly. They can include outdoor advertising, power lines, and cellular towers. Surveys have shown that most people object to billboard

advertisements.

Visual pollution can lead to stress. Researchers at Texas A&M University studied two groups. The first group traveled on roads lined with signs and strip malls. The second group followed less-developed routes. Members of the first group showed higher stress. They had higher blood pressure and heart and breathing rates.

Some experts say that billboards distract drivers and cause accidents. That is especially true when the billboards use light and motion.

How can you rid your neighborhood of billboards, graffiti, and other pollution? Find strength in numbers.

- **Join or start a volunteer group that carries out projects such as graffiti and litter cleanup.**
- **Look for ways to adopt areas to clean and clear. Many places have Adopt-a-Park or Adopt-a-Street programs.**
- **Attend city council and other local meetings. Become informed about issues such as billboard advertising and cell-phone towers in your community.**
- **Organize a letter-writing or e-mail campaign. Or start a Web site to publicize issues.**

The final suggestions apply to all kinds of pollution problems. Remember, you can bring power to your cause by organizing your efforts. Complaining only goes so far. But with some help from others, you can really clean up!

## A Success Story

Teens Against Graffiti (TAG) is a volunteer group in Santa Clarita, Calif. Members are working to wipe out graffiti from their community. School and church groups and individuals get together on the third Saturday of every month. They clean graffiti from road signs, bus benches, alleyways, and other places around town. The TAG teens say they "take pride in their community and ... make a positive difference in the quality of life in Santa Clarita."

# Too Much Trash!

## Less Mess

### More people are recycling.

What do bottles, cans, paper, and tires have in common? They all end up as garbage. In the late 2000s and early 2010s, each American threw away about 4½ pounds of trash every day. That adds up to more than 1,600 pounds per person in one year!



Erlanson/Getty Images

Most of our trash ends up in **landfills**. Those are places where people dump trash. The rest of the trash gets **recycled**. When something is recycled, it is made into something new.

Many people have been working to solve the trash problem. One plan is known as "zero waste." Its goal is to teach people to make less trash. The plan is being used in schools, companies, national parks, and restaurants. Here are some ways that the plan is being put into action.

## Recycling Trash





Jupiter Unlimited

*Put items to be recycled in a recycling bin.*

Some people sort their trash to see what can be recycled. Those items often include paper, glass, and certain plastics. Some towns also recycle tires and batteries. Taking items to recycling centers reduces the trash in landfills.

## Buying Recycled Products



Carrin Ackerman/Weekly Reader

*This fleece, by Patagonia, is made from recycled plastic bottles.*

Many products are made from recycled materials. Clothes and bags can be made from recycled plastic bottles. Recycled plastic can also be made into lumber. Lumber is used for building things.

## Making Compost Piles



SuperStock; Trash: iStockphoto

*Plant and food scraps can be put into compost piles.*

Food scraps usually end up in the trash. But some people put the scraps into **compost piles**. Those are mixtures of plant and food scraps. Worms and bugs help break down the scraps. That turns into soil, which helps plants grow.

# What a Dump!

How do we get rid of so much plastic trash?

## The Plastic Predicament

Try to get through a day without using plastic. For that matter, try to go just one hour without it. From food and drink packages to cell phones and toothbrushes, plastic is nearly impossible to avoid. You can't even turn on a light without flicking a plastic switch.



Oene Moedt/Foto Natura/Minden Pictures

*A seagull is entangled in plastic six-pack ring.*

Plastic doesn't exist in nature. It's created from chemicals. Mass production of plastic started in the 1940s. Since then, it has become supremely popular-and for good reason. Plastic is lightweight, cheap, and convenient. It also lasts for a very long time. That can be good-you don't want your laptop to fall apart as you type-but it can be bad too.

Plastic can remain in the environment for hundreds or even thousands of years. It piles up, filling garbage dumps and polluting the land and the ocean. Each year, more than 300 million tons of new plastic are manufactured worldwide. Clearly, we have a plastic problem.

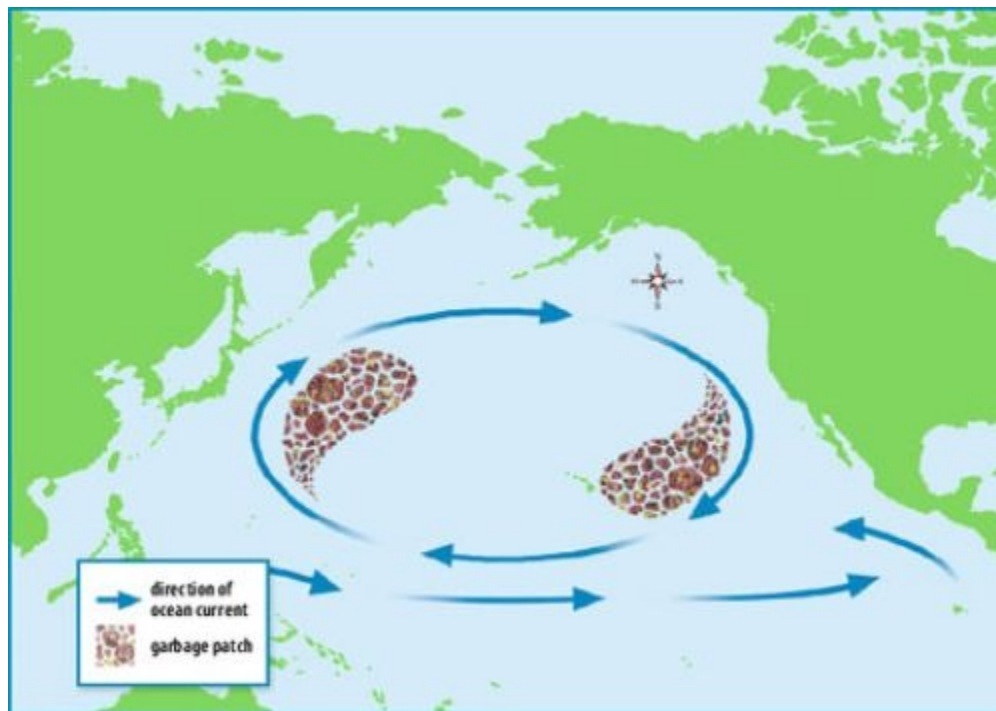
## Trash Soup

Natural products such as food, paper, and wood are **biodegradable** [bigh-oh-di-GRAY-duh-buh]; they're broken down by bacteria and are absorbed by the environment. Plastic, on the other hand, is photodegradable. Light from the sun causes it to break into smaller pieces over time. It never degrades completely, however. It often winds up littering the land and the ocean.

In the Pacific Ocean, plastic waste has collected in a swirling "soup" of trash called the Great

Pacific Garbage Patch. It's huge-four times as big as Texas! It's just one example of an ocean garbage patch. Plastic pollutes all the world's seas. The United Nations Environment Programme estimates that plastic kills 100,000 marine mammals and turtles and 1 million seabirds every year. Some become tangled in plastic debris, while others die after eating plastic trash that they can't digest. Scientists estimate that 80 percent of the ocean's plastic started out on land.

Now the good news: you can help by tossing plastic into the recycling bin instead of the trash. A measly 28 percent of plastic bottles were recycled in 2009, according to the U.S. Environmental Protection Agency. You can help drive that number up.



Leigh Haeger

## Sea of Trash

The Great Pacific Garbage Patch is two areas of floating garbage in the Pacific Ocean. Each one is twice the size of the state of Texas. They lie within the North Pacific Subtropical Gyre, a ring of currents that turns clockwise in the ocean.

## Reduce, Reuse

Still, recycling won't solve our plastic predicament by itself. Not all types of plastic can be recycled. And those that can may not be recycled in the way you'd expect. Plastic water and

soft-drink bottles-some of the most commonly used plastics in the United States-are hardly ever turned into new bottles. Instead, they're recycled into carpet, furniture, and fleece clothing. When those products wear out, they often can't be recycled a second time.

So what can you do? One of the best ways to tackle the problem is to reduce the amount of plastic you use. Carry reusable water containers instead of single-use plastic bottles. Bring your lunch in recyclable aluminum foil instead of a plastic sandwich bag. Ask your family to carry reusable tote bags to the grocery store. Every little bit helps.

Plastic will probably always be part of our lives. But by making smart choices, we can keep it from burying us.

## Save the World



*recycling bins*

## A little change can make a big difference.

That chocolate pudding you had for dessert was delicious! You lick the lid, and you're ready to throw out the container-along with the plastic spoon. Stop right there! You can recycle that spoon!

Recycling is the practice of using items or materials again. That cuts down on the amount of waste on the planet. Americans recycle much of their garbage. According to the Environmental Protection Agency, the United States recycles more than 30 percent of its waste.

In 1999, recycling kept more than 64 tons of material from ending up in landfills. But there is still more that can be done.

There are several ways to recycle around the home. If your community has a curbside pickup program, you can leave recyclable materials outside. The materials are then collected and brought to recycling centers. Another option is to take recyclable items to a refund center. For

example, you can take many types of cans to can-return machines at supermarkets. Drop in the cans and you receive a small amount of money for each one.

It is easy to separate recyclable items from other trash. Paper, plastic bottles, and aluminum cans can usually be recycled. To make it easy, keep separate recycling bins in various places in your home. If you are writing in your room and have scrap paper, you can toss it into a recycling bin instead of throwing it out.

## Five Easy Ways to Go Green

- **Plant a tree.** You can gather seeds, or you can buy a tree to plant. Trees help give us oxygen, which we need in order to live. Visit [arborday.org](http://arborday.org) for more information.
- **Reuse plasticware.** If you use plastic forks, knives, or spoons during meals, wash them and then use them again the next day. You will have less garbage, and you won't need to spend as much money on utensils.
- **Turn off the lights when you leave a room.** If no one is in a room, why keep it lit? Turn off lights, televisions, and other power-using devices when you don't need them. You will save energy.
- **Donate old clothes.** When clothing doesn't fit anymore, don't just throw it out. Donate the clothing to someone who needs it. Visit [salvationarmyusa.org](http://salvationarmyusa.org). You will not only cut down on waste but also help someone who might be unable to afford clothes.
- **Return cell phone batteries.** Cell phone batteries contain chemicals that can pollute air and water. Find out whether the phone store has a recycling program; if not, ask the employees whether they know of a program that collects the batteries. Visit [recyclewirelessphones.com](http://recyclewirelessphones.com) for more information.