

April 17, 2017



SCHOLASTIC

News

Edition 5/6

with
**Weekly
Reader.**



Vol. 85 No. 20 ISSN 1554-2440

A building hangs off the edge of a ridge in Shishmaref, Alaska, in 2006. It later collapsed.



Living on the Edge

Many towns along the coast of Alaska are slowly being washed away. Some of them have decided that moving is their best chance of survival. **Page 4**

Video

The Effects of
Climate Change
scholastic.com/sn56

Coral Reefs at Risk **p. 2** • Should Plastic Bags Be Banned? **p. 7**

Coral Crisis

Can scientists save the world's coral reefs?



A scuba diver swims over bleached corals in the Great Barrier Reef. Below: A healthy section of the reef

The Great Barrier Reef is one of Earth's greatest natural wonders. It's the largest system of coral reefs in the world, stretching more than 1,400 miles along the east coast of Australia. The colorful underwater habitat provides food and shelter to countless marine animals. But in March of last year, scientists flying over the reef were alarmed by what they saw.

"Where you expected to see these wonderful colorful greens and browns and oranges of healthy coral, what you just saw was white," says scientist Mark Eakin. He's one of the authors of a report published last month that highlights the **extensive** damage to the Great Barrier Reef.



What the scientists saw is a condition called coral bleaching. It's a warning sign that the reef is in serious trouble. Experts say rising ocean temperatures are mostly to blame.

Reefs at Risk

Corals look like plants, but they're actually tiny animals that live in huge colonies. Their hard outer skeletons form reefs. Corals get their nutrients from tiny plant-like organisms called algae, which live inside corals and give them their color. But when the ocean gets too warm, corals release the algae. As a result, the corals get bleached white.

Scientists say that bleaching is becoming more widespread as oceans get warmer as part of global climate change. (*Learn more about the effects of climate change on pages 4-5.*) Some corals can recover from bleaching as the water cools in winter, but that is getting less likely as winter ocean temperatures rise too. Last year, more than 65 percent of the corals in the northern part of the Great Barrier Reef died.



"They've lost something that is an absolute gem," Eakin says.

Coral reefs are one of the planet's most important ecosystems. Reefs cover less than 1 percent of Earth's surface, but they're home to about one-quarter of all marine species. People who live in communities near reefs depend on them for food and to attract tourists.

Reefs worldwide suffer from pollution, overfishing, and other dangers, but scientists say climate change is the biggest threat. They predict that nearly 90 percent of all reefs will disappear by 2050.

Word to Know

extensive (ehk-STEHN-sihv) adjective. covering or affecting a large area; widespread

OCEAN AGENCY/IN. CATLIN SEAVIEW SURVEY (BLEACHED CORAL); JEFF HUNTER/GETTY IMAGES (HEALTHY CORAL); JIM McMAHON/NAIPANT (MAP)

COURTESY OF THE BOGGSBOUGH FAMILY (BELL), ARTUR BORDALO BACKDRAFT MEDIA/GETTY IMAGES (RABBIT, HUMMINGBIRD)



Bella
Rossborough

Goodbye to Plastic Bags

Not many kids can say they helped get a law passed in their town. But sixth-grader Bella Rossborough of Kennebunk, Maine, did just that.

Bella was inspired by an article she read in *Scholastic News* while in fourth grade. She learned that Americans use about 100 billion plastic bags each year. She also found out that many bags end up in rivers and oceans, where fish and other animals can get caught in the bags or choke on them.

Bella wrote an essay about why she thought **disposable** plastic bags should be banned. Jan Gibson, her teacher at Sea Road School, encouraged her to turn it into a letter and send it to local officials.

Bella was invited to read her letter to the town council and later took part in meetings about a possible bag ban. Last June, the people of Kennebunk voted in favor of banning plastic bags. Stores in the town are allowed to hand out only recyclable paper bags. Customers can also bring their own reusable cloth bags.

"I never imagined I could make such a difference," Bella says.

Word to Know

disposable (dis-POH-zuh-buhl)
adjective. made to be thrown away after use



Garbage Art

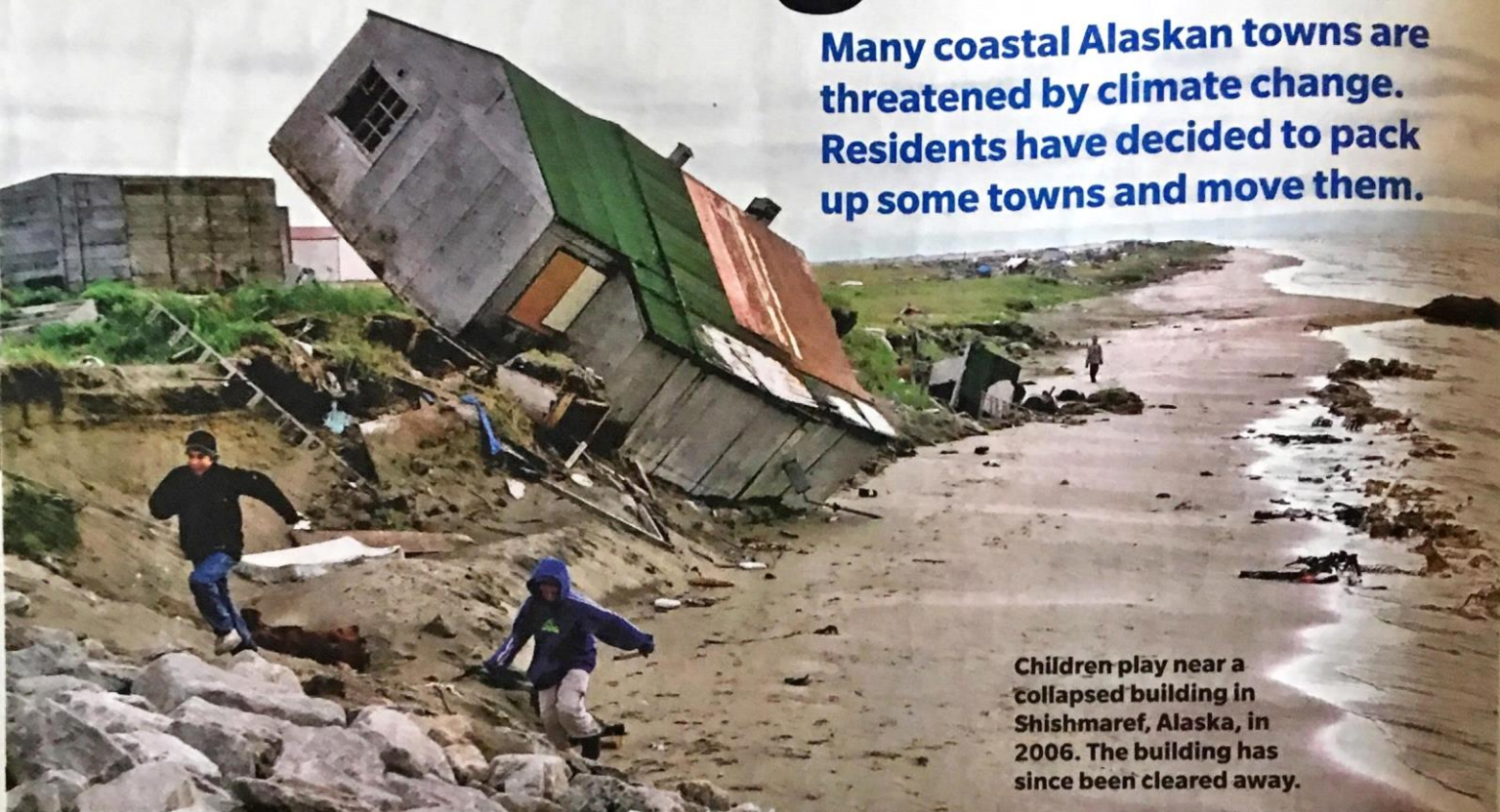
Pieces of scrap metal, old car bumpers, worn-out tires: To most people, they're worthless trash. But an artist from Portugal who calls himself Bordalo II uses these items and other garbage to create enormous animal



sculptures. He wants to draw attention to the huge amount of unrecycled waste on the planet. To make the trash animals, Bordalo uses materials he finds in junkyards and abandoned buildings. His sculptures have been displayed on city streets across the world—from Lisbon, Portugal, to Fort Smith, Arkansas. Bordalo hopes his art will inspire people to produce less trash and recycle more.

Washing Away

Many coastal Alaskan towns are threatened by climate change. Residents have decided to pack up some towns and move them.



Children play near a collapsed building in Shishmaref, Alaska, in 2006. The building has since been cleared away.

The village of Shishmaref sits on an island off the northwest coast of Alaska. The island is so remote that it can be reached only by plane or boat. For more than 400 years, the village has been home to a small group of Native Alaskans called the Inupiat. But that may not be the case for much longer.

"The town is washing away," says 11-year-old Carter Kokeok. Like many of the roughly 560 residents of Shishmaref, Carter's family has lived there for as long as anyone can remember.

Words to Know

plight (plyt) *noun*. an unfortunate or difficult situation

inevitable (ih-NEH-vih-tuh-buhl) *adjective*. certain to happen; unavoidable

Since 1969, more than 200 feet of the narrow island has been eaten away by the sea. Last August, the residents of Shishmaref took a drastic step to save their community: They voted to relocate the village.

Shishmaref is one of 31 Alaskan towns at risk of being wiped out, according to a report by the U.S. government. Scientists say the **plight** of these towns is one of the most devastating effects of climate change.

Heating Up

Earth's average temperature has been slowly rising for more than a century. Most scientists say that human activity is

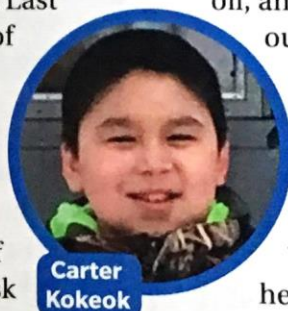
contributing to the temperature increase. We use fossil fuels (coal, oil, and natural gas) to power our homes and cars.

Burning these fuels releases a lot of carbon dioxide and other gases into the atmosphere. Like a blanket, these gases trap heat from the sun and make the planet warmer.

Places in and around the Arctic Circle, like Alaska, are especially feeling the heat. In fact, average temperatures in the state have been rising twice as fast as in the rest of the U.S.

On Thin Ice

In many coastal Alaskan towns, one of the biggest effects of warmer temperatures is a lack of



Carter Kokeok



Shishmaref is on an island that's only a quarter-mile wide.



sea ice. In the past, the Chukchi Sea, off the northwestern coast of Alaska, would freeze completely from about November until June. The ice would act as a barrier, protecting Shishmaref during harsh storms in the fall and winter.

But in recent years, the sea hasn't been freezing until much later in the year. This year, it didn't fully freeze until February. Without the ice barrier, huge waves crash against the coast. Several homes in Shishmaref were destroyed by storms in the late 1990s and early 2000s.

As the climate changes, Shishmaref is also slowly sinking. The land is permafrost, a thick layer of soil that remains frozen year-round. But the permafrost is melting, making the ground unstable. Each year, several feet of the village erodes, or wears away, into the sea.

"We're literally seeing the land just get washed right out from underneath them," says scientist Jeremy Mathis. He's the director of the Arctic Research Program for the National Oceanic and Atmospheric Administration.

Rising temperatures also threaten the villagers' food supply. In the fall and winter, people usually ride snowmobiles far out onto the sea ice to hunt for seals and go ice fishing. But because the ice isn't arriving until later, that's becoming more difficult.

A New Home

Officials have tried different methods to save Shishmaref. Since the late 1990s, they have moved about 20 homes, including the one Carter lives in, farther from the shore. They've also built a long rock seawall to help hold back the ocean waves. But these

are only temporary measures. For years, many residents have known that moving the town one day was **inevitable**. Last August, the plan to relocate Shishmaref passed by about a dozen votes.

Officials in Shishmaref have identified two possible new sites for the town, about 5 miles inland. The cost would be huge: an estimated \$180 million. The town must rely on outside sources, especially the federal government, to pay for the relocation. But no one knows when that money will arrive.

No matter when the move happens, the residents know it won't be easy to leave the land where their ancestors lived.

"It's not something we want to do," says Carter's mother, Katherine. "But it's something we have to do."

—by Joe Bubar

A Sinking Village

Shishmaref isn't the only Alaskan village trying to relocate. Residents of a town called Newtok have also decided to move. Since 2006, six homes have been built at its new location about 9 miles away. However, Newtok's move, like Shishmaref's, is being held up because of a lack of money.

One way or another, Newtok may not be around for much longer. The town of about 350 people sits on a low, flat marsh on the shore of the Ninglick River. Melting permafrost is causing the land to sink. As a result, the river is slowly swallowing Newtok. Residents get around town on wooden sidewalks to keep from sinking into the muddy ground (see photo). Scientists predict that the water could reach Newtok's school, which sits on the highest point in the town, by the end of this year.



Would You Drink This Water?

Drinking recycled toilet water may sound gross, but millions of people in California have been doing it for years.

You probably don't like to think about where water goes after you flush the toilet. For nearly 3 million people in Orange County, California, some of it winds up coming out of their faucets! Since 2008, they've been drinking recycled wastewater from toilets, sinks, dishwashers, and shower drains.

Orange County is home to the world's largest water recycling plant. Each day, it pumps out 100 million gallons of **purified** water to cities like Anaheim, where Disneyland is located.

Most of the water we drink comes from lakes, rivers, or below Earth's surface (groundwater). That water is purified before it's

pipled into our homes. But officials in Orange County wanted a system that wouldn't strain the water supply during droughts—like the one California experienced over the past five years.

The toilet-to-tap idea has spread to other communities. In Texas, at least four plants are already recycling wastewater. And other counties in California, as well as Arizona, plan to build their own water recycling plants.

Filtering the Flush

How does water in Orange County go from toilets to faucets? First, it travels from drains in homes through underground pipes to a sewage treatment plant, where the cleaning process begins.

Much of the water is then piped to the water recycling plant for an advanced cleaning process. Special filters, light, and a strong chemical are used to remove bacteria and other substances that may be harmful from the water. The purified water is tested to meet strict safety standards before it's pumped back into the drinking-water supply.

Still, Orange County officials admit that it's hard to convince people to get over "the yuck factor" of drinking water that started out in the toilet. The water recycling plant has education programs to help the public get used to the idea.

Fourth-grader Mira Zacheis recently toured the plant with her Girl Scout troop. Mira was grossed out at first, but she changed her mind after seeing how the water is purified.

"I realized it's nothing to worry about," she says. "Plus, it tasted just like normal water!"

—by Tricia Culligan

Word to Know

purified (PYOOR-uh-fyed)
adjective. made clean or pure;
freed of harmful substances



Mira Zacheis (second from left) and other members of her Girl Scout troop hold cups of recycled water.

Should Plastic Bags Be Banned?

As you read on page 3, stores in Kennebunk, Maine, are no longer allowed to give out plastic bags. Many other places in the U.S. have passed similar laws. Last month, Newport, Rhode Island, became the latest city to ban businesses from giving out plastic shopping bags. And last November, the first statewide ban on disposable plastic bags went into effect in California.

Supporters of such bans say the laws help reduce waste. Plastic bags often get dumped with other trash into landfills, where experts say the bags might take centuries to decompose, or break down. Many other bags become litter on the street or wash into sewer drains and waterways. A study released in 2015 estimates that more than 17 billion pounds of plastic trash end up in the oceans each year. Many people argue that banning plastic bags will help reduce the huge amount of plastic in the seas.

But some people think the bag bans are unnecessary. They point out that many people don't throw plastic bags away after one use. Instead, they reuse them in a variety of ways, including to carry and store items and to line garbage cans. Plus, opponents



argue that banning bags could cause a lot of people to lose their jobs. According to the Plastics Industry Trade Association, nearly 25,000 people in the U.S. work in the plastic bag industry.

Here's what two of our readers think.

Yes! Plastic bags are a threat to the environment.

Plastic bags are lightweight and often blow away and end up polluting the oceans. This is harmful to birds and sea animals that accidentally eat the bags or get tangled in them. For example, in February, scientists in Norway found more than 30 plastic bags and other plastic waste in the stomach of a beached whale. The convenience of using plastic bags isn't worth killing animals.

It's not as if plastic bags are the only option. People can choose recyclable paper bags at the supermarket. Even better, they can take their own cloth bags, which they can use over and over again.

Khalea Jai Hoggs, Indiana



No! People should be able to choose the type of bags they use.

Many people like plastic bags because they are sturdier than paper bags. They also come in handy for other things, like carrying lunch or cleaning up after a pet.

Plus, plastic bags can be recycled, so they don't hurt the environment. Walmart and other stores have special recycling bins where people can drop off used bags.

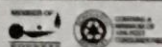
People should be able to choose what kind of bag they use. The government shouldn't decide for them. In some towns, stores charge a 5-cent fee to use plastic bags. Instead of banning the bags, more places should do this. At least it gives people a choice.

Frankie White, Connecticut



What's Your Opinion? GO ONLINE to cast your vote and download an opinion-writing skills sheet. www.scholastic.com/sn56

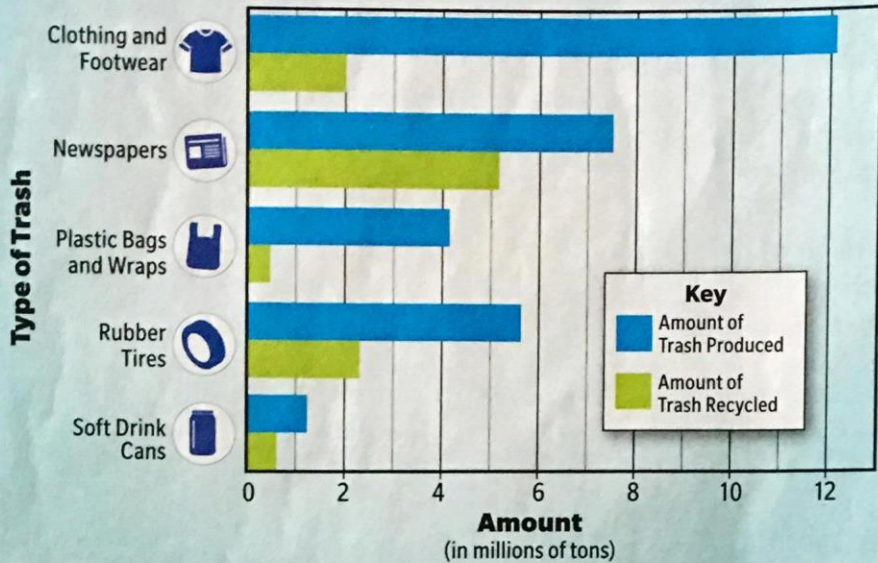
POSTAL INFORMATION: SCHOLASTIC NEWS Edition 5/6 (ISSN 1554-2440) is published weekly during the school year except holidays and mid-term, 22 issues, by Scholastic Inc. 2931 East McCarty St., P.O. Box 3710, Jefferson City, MO 65102-3710. Periodical postage paid at Jefferson City, MO 65102 and at additional mailing offices. POSTMASTERS: Send notice of address changes to SCHOLASTIC NEWS Edition 5/6, 2931 East McCarty St., P.O. Box 3710, Jefferson City, MO 65102-3710. Copyright ©2017 by Scholastic Inc. Scholastic News and associated designs are trademarks/registered trademarks of Scholastic Inc. All Rights Reserved. Materials in this issue may not be reproduced in whole or in part in any form or format without special permission from the publisher. Printed in the USA.



News Graph

Americans throw away huge numbers of plastic bags every year, and only a small percentage of them get recycled. This graph shows how much of certain types of trash were produced and recycled in 2014.

Types of Trash Produced and Recycled in 2014



1. About how many tons of plastic bags became trash in 2014?

2. About half the amount of _____ that was thrown away in 2014 was recycled.

- Ⓐ clothing and footwear
- Ⓑ newspapers
- Ⓒ plastic bags and wraps
- Ⓓ soft drinks cans

3. Which data on the graph do you find most surprising? Explain.

News Review

Coral Crisis page 2

4. Why were scientists alarmed when they flew over the Great Barrier Reef in March of last year?

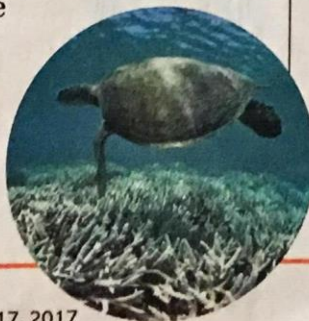
- Ⓐ Most of the coral was green, brown, and orange.
- Ⓑ Much of the coral had turned white.
- Ⓒ Much of the coral had disappeared.
- Ⓓ The reef was filled with countless fish and other sea creatures.

5. Corals get their bright colors from _____.

- Ⓐ a condition called coral bleaching
- Ⓑ algae that live inside the corals
- Ⓒ warming ocean temperatures
- Ⓓ pollution

6. Which detail best supports the idea that coral reefs are one of Earth's most important ecosystems?

- Ⓐ The Great Barrier Reef stretches more than 1,400 miles along the east coast of Australia.
- Ⓑ Reefs cover less than 1 percent of Earth's surface.
- Ⓒ More than 65 percent of the corals in the northern part of the reef died last year.
- Ⓓ Reefs are home to about one-quarter of all marine species.



Washing Away pages 4-5

7. The author wrote about the town of Shishmaref mainly to show _____.

- Ⓐ the effect that climate change is having on some coastal towns
- Ⓑ how humans are contributing to climate change
- Ⓒ the history of the Inupiat people
- Ⓓ what life is like for people who live on islands

8. Which is a context clue for the meaning of *remote*?

- Ⓐ "sits on an island"
- Ⓑ "can be reached only by plane or boat"
- Ⓒ "home to a small group"
- Ⓓ "may not be the case for much longer"

9. What is the main reason Shishmaref hasn't been relocated yet?

- Ⓐ The community voted against moving.
- Ⓑ A seawall was built to protect the town.
- Ⓒ The town doesn't have the money to pay for the expensive move.
- Ⓓ Town officials haven't found a new location.

10. According to "A Sinking Village," Newtok is moving because of _____.

- Ⓐ a lack of money
- Ⓑ a lack of roads
- Ⓒ melting permafrost
- Ⓓ melting sea ice