

A photograph of the Statue of Liberty in New York Harbor, but the water level is significantly higher than normal, reaching up to the statue's chest. The sky is a clear, bright blue with some light clouds. The statue is green and holds a torch in her right hand and a tablet in her left. The water is a deep blue, and the reflection of the statue is visible in the water below.

VANISHING CITIES

If all the ice on Earth melts, scientists estimate that the seas could rise up by more than 60 meters (200 feet), covering much of the Statue of Liberty.

Warm Up

Discuss these questions with a partner.

1. Which are the most crowded cities or regions in your country? Why are they crowded?
2. What places in the world do you think are most at risk from a rise in sea levels?
3. Can you think of any places that have recently experienced floods? What was the result?



Before You Read

A. Quiz. How much do you know about Venice? Answer the questions. Then check your answers at the bottom of the page.

1. Approximately how many people visit Venice each year?
a. 200,000 b. 2,000,000 c. 20,000,000
2. Venice is regularly threatened by *acqua alta* (high tides) and has been sinking into the water for years. Over the last century, how much has the city sunk?
a. 13 cm (5 inches) b. 25 cm (10 inches) c. 38 cm (15 inches)
3. What did Venice recently prohibit people from doing in the Piazza San Marco (the city's main square)?
a. feeding birds b. selling T-shirts c. riding skateboards

B. Skimming. Look quickly at the passage on pages 75–79. Which problem facing Venice do you think the article is mainly about? Circle one option below. Then read through the passage to check your ideas.

- a. dangers caused by rising tides
- b. problems caused by tourism
- c. the city's declining birthrate
- d. rising levels of pollution

⤴ Every year, crowds of tourists travel to Venice, Italy. Highlights for many visitors are the chance to ride in a gondola along the famous Grand Canal (**above**) and to attend Carnevale, an elaborate costume party that is one of the city's biggest celebrations (**above right**).



CITY UNDER SIEGE

- A** 1 The city Thomas Mann¹ called “half fairy tale and half tourist trap” finds itself threatened by more than just the rising tide. Cathy Newman investigates the trouble with Venice.
- B** 5 Nowhere in Italy is there a crisis more beautifully **framed** than in Venice. Neither land nor water, the city lifts like a mirage from a lagoon² at the head of the Adriatic Sea. For centuries it has threatened to vanish beneath the waves of the *acqua alta*, the relentlessly regular flooding caused by rising tides and sinking foundations. But that is the least of its problems.
- C** 10 Just ask Massimo Cacciari, former mayor of Venice and professor of philosophy, fluent in German, Latin, ancient Greek; a man who raises the level of political intellect to just short of the stratosphere.³ Ask about the *acqua alta* and Venice sinking, and he says, “So go get boots.”
- D** 15 Boots are fine for water, but useless against the flood that causes more concern for Venetians than any lagoon spillover: the flood of tourism. Number of Venetian residents in 2012: 60,000. Number of visitors in 2012: 21 million.

1 **Thomas Mann** (1875–1955) was the author of the 1912 novella *Death in Venice*.

2 A **lagoon** is a body of water cut off from the open sea by coral reefs or sand bars.

3 The **stratosphere** is the atmospheric layer between about 15 and 50 km (10 and 30 miles) above the Earth.

✓ Carnevale masks for sale in Venice. Each year the Carnevale draws thousands of tourists.



E In May 2008, for example, on a holiday weekend, 80,000 tourists descended on the city. Public parking lots in Mestre, where people board a bus or train to the historic center, filled with floodwater and were closed. Those who managed to get to Venice surged through the streets like schools of bluefish, snapping up pizza and gelato, leaving paper and plastic bottles in their wake.⁴

“Now, Venice gets giant cruise ships. You can’t understand Venice from ten stories up. You might as well be in a helicopter.”

F “Beauty is difficult,” says Cacciari, sounding as if he were addressing a graduate seminar in aesthetics⁵ rather than answering a question about municipal⁶ regulation. The black of Cacciari’s dark hair and luxuriant beard **complement** his current mood. The preceding day, heavy rains had flooded Mestre again. Rain caused the flood, not acqua alta, Cacciari says. “High tide is not a problem for me. It’s a problem for you foreigners.” End of discussion on flooding.

G No, he stresses, the problems lie elsewhere. The cost of maintaining Venice: “There is not enough money from the state to cover it all—the cleaning of canals, restoration of buildings, raising of foundations. Very expensive.” The cost of living: “It’s three times as costly to live here as in Mogliano, 20 kilometers away. It’s affordable only for the rich or elderly who already own houses because they have been passed down. The young? They can’t afford it.”

H Finally, there is tourism. Of that, Cacciari says: “Venice is not a **sentimental** place of honeymoon. It’s a strong, contradictory, overpowering place. It is not a city for tourists. It cannot be reduced to a postcard.”

I If you are a Venetian who lives in a fifth-floor walk-up apartment—someone who gets up, goes to work, goes home—Venice is a different place altogether. The abnormal is normal. A flood is routine. The alarm sounds, protective steel doors come down. Boots, essential to any Venetian wardrobe, are pulled on. The four kilometers (two and a half miles) of *passerelle*—an **elevated** boardwalk⁷ supported on metal legs—are set up. Life goes on.

J When Silvia Zanon goes to Campo San Provolo, where she teaches middle school, she knows it will take 23 minutes to walk there from her apartment on the Calle delle Carrozze. On the way she crosses the Piazza San Marco, blissfully⁸ empty in early morning. “I step on the paving stones and fall in love with the city all over again,” she says.

K Gherardo Ortalli, a professor of medieval history, finds his path less poetic. “When I go out in the *campo* with my friends, I have to stop because someone is taking a photograph of us as if we are aboriginals,”⁹ he says. “Perhaps one day we will be. You will go and see a sign on a cage: ‘Feed the Venetians.’ When I arrived 30 years ago, the population was 120,000. Now it is less than 60,000.”

L 80 The decline seems inexorable.¹⁰ Ortalli thinks Venice will end up as simply a theme park for the rich, who will jet in to spend a day or two in their palazzo, then leave. It is 10 a.m., and he is headed toward a kiosk to buy a newspaper before going to his office, though you can hardly find the papers for all the

⁴ Something that is left in someone’s **wake** remains behind after the person has left.

⁵ **Aesthetics** is a branch of philosophy dealing with the nature of beauty.

⁶ Something that is **municipal** is controlled or owned by the government of a city or town.

⁷ A **boardwalk** is a footpath made of wooden boards.

⁸ Somewhere that is **blissfully** empty is a place that is happy and peaceful because it is empty.

⁹ **Aboriginals** are the original and native people of a country or region.

¹⁰ Something that is **inexorable** cannot be prevented from continuing or progressing.



tourist kitsch: miniature masks, gondola pins, jester¹¹ caps. "Everything is for sale," he sighs. "Even Venice."

M 90 In 2008, the official in charge of managing the impact of tourism in Venice was Augusto Salvadori. *Love* is an **inadequate** word to describe how Salvadori feels about Venice. He was not just the city's director of tourism and promoter of tradition; he was its defender. "The city is consumed by tourism," says Salvadori. "What do Venetians get in exchange? During part of the year, Venetians cannot elbow their way onto public transportation. The cost of garbage collection increases; so does the price of living."

N "Perhaps to help," Salvadori says, "we put a city tax on hotels and restaurants. [Then] they said tourists would not come—but I say, tourists won't come for a few euros?" He glares. "I could not worry about hotels. I had to think of the Venetians. My battle was for the city. Because Venice is my heart."

O 110 Tourism has been part of the Venetian landscape since the 14th century, when pilgrims stopped en route to the Holy Land. So, what's so different about tourism now? I ask Ortalli. "Now, Venice gets giant cruise ships. The ship is ten stories high. You can't understand Venice from ten stories up. You might as well be in a helicopter. But it's not important. You arrive in Venice, write a postcard, and remember what a wonderful evening you had."

P 120 "There goes another piece of Venice," Silvia Zanon, the teacher, said sadly when La Camiceria San Marco, a 60-year-old clothing store, had to move to a smaller, less prime spot because the rent had tripled. Susanna Cestari worked there for 32 years. "It's like leaving the house where you were born," she said, while packing boxes for the move. Since December

11 A **jester** was a professional clown employed by the nobility during the Middle Ages. Jesters' hats are known for being colorful with pointed tips.



◀ Elevated boardwalks known as *passerelle* allow visitors to appreciate Venice's beauty without getting their feet wet.

130 2007, at least ten hardware stores have gone out of business. In the Rialto market, souvenir sellers have replaced vendors who sold sausages, bread, or vegetables. Tourists will not notice. They do not visit Venice to buy an eggplant.

Q 135 Tourism in Venice generates \$2 billion a year in revenue, probably an underestimate because so much business is done off the books. It is, reports the University of Venice's International Center of Studies on the Tourist Economy, "the heart and soul of the Venetian economy—good and bad." Some people suggest that Venice's wounds are self-inflicted. "They don't want tourists," observes a former resident, "but they want their money." There is talk about implementing new policies to limit the number of tourists, imposing additional taxes, and urging visitors to avoid the high seasons of Easter and Carnevale. But tourism—together with the loss of resident population, and combined with the

150 interests of hotel owners, gondoliers, and water taxi drivers who all have an interest in maximizing the influx of visitors—defies simple solutions.

R 155 "Let me remind you, the loss of population . . . is not only a problem in Venice but in all historical towns, not only Italy," cautions former Mayor Cacciari. "The so-called exodus, which dates back very far in time, is deep-rooted with the lodging¹² issue." For some, a solution to Venice's troubles already seems out of reach. "It is too late," Gherardo Ortalli, the historian, says. "The stones will remain. The people won't."

S 165 But for now there is still life as well as death in Venice. Silvia Zanon, on her way to school, still crosses San Marco only to fall in love with the city again. And, assuming it is in season, you can still manage to buy an eggplant. The city's beauty, difficult and bruised, somehow survives. 170

¹² Lodging is temporary, often rented, accommodation.



Reading Comprehension

Multiple Choice. Choose the best answer for each question.

Main Idea

1. What is the main idea of this article?
 - a. Besides flooding, Venice faces several other serious environmental problems.
 - b. The flooding problem in Venice is caused mainly by rain, not by the *acqua alta*.
 - c. The most difficult problem facing Venice is the large number of tourists it receives.
 - d. Because tides are rising and foundations are sinking, Venice is disappearing into the sea.

Rhetorical Purpose

2. Why does the author present the statistics in paragraph D?
 - a. to indicate that more tourists are coming to Venice than before
 - b. to emphasize the population decline in Venice
 - c. to contrast the number of tourists with the number of residents
 - d. to point out the dangers of serious flooding

Inference

3. What can be inferred about the holiday weekend in May 2008, mentioned in the article?
 - a. There were more tourists than residents in the city.
 - b. Many residents left the city because of the floods.
 - c. All of the city center's parking lots were full of cars.
 - d. Vendors ran out of snacks for tourists such as pizza and gelato.

Detail

4. What does Massimo Cacciari say about the young people of Venice in paragraph G?
 - a. Most of them have moved to the nearby town of Mogliano.
 - b. They find it is too expensive to live in Venice these days.
 - c. They are involved in cleaning canals, restoring buildings, and raising foundations.
 - d. Many of them live in houses that have been passed down from their parents.

Detail

5. Which of the following is given as an example of an ordinary resident of Venice?
 - a. Massimo Cacciari
 - b. Silvia Zanon
 - c. Thomas Mann
 - d. Augusto Salvadori

Vocabulary

6. The phrase *off the books* (line 136) indicates that much of the tourist business in Venice is done _____.
 - a. unofficially
 - b. carelessly
 - c. unwillingly
 - d. rapidly

Reference

7. The word *they* in line 141 refers to the _____.
 - a. people who live in Venice
 - b. International Center of Studies on the Tourist Economy
 - c. people who say that Venice's wounds are self-inflicted
 - d. tourists who visit Venice

Critical Thinking

Evaluating: Do you think that the author offers enough evidence to support her main idea? Why or why not?

Analyzing: “[Tourism] is the heart and soul of the Venetian economy—good and bad” (lines 137–139). What effects (good and bad) does the author mention in the passage? What other positive and negative effects can tourism have on a city or a region?

Reading Skill

Recognizing Literal vs. Figurative Language

Some words and phrases in the reading passage have a literal meaning, while others have a figurative meaning. When you read, it is important to be able to recognize when figurative language is being used instead of literal language. Literal language means exactly what it says. Figurative language, such as similes, metaphors, and personification, uses words with a meaning that is different from the literal interpretation.

Read these two sentences.

The farmers plowed their fields. (literal)

The ship plowed through the sea. (figurative)

In the first sentence, farmers use real plows (agricultural tools) to prepare their land for planting. In the second sentence, a metaphor, the ship moves through the sea *like* a plow. There is no real plow.

A. Classification. Find these words or phrases in the article. Mark them **L** if used literally and **F** if they are used figuratively.

1. flooding (line 8) _____
2. stratosphere (line 12) _____
3. flood (line 14) _____
4. foundations (line 42) _____
5. elevated (line 61) _____
6. poetic (line 72) _____
7. theme park (line 81) _____
8. consumed (line 96) _____
9. garbage collection (line 100) _____
10. pilgrims (line 111) _____
11. wounds (line 141) _____
12. bruised (line 169) _____

B. Applying. Write a sentence about your own city or region using figurative language.



⚡ A plow is a tool used by farmers to loosen or turn the soil. The word *plow* can also be used to describe a ship cutting through the water like a plow.

Vocabulary Practice

A. Completion. Complete the information by circling the correct word in each pair.

A popular image of the European Alps consists of cowbells, cheese-making, and quiet villages **1. (framed / imposed)** against a background of snow-capped mountains. But a less **2. (sentimental / complementary)** picture must also include the 12 million trucks and about 50 million cars that cross the mountains each year.

The movement of 77 million tons of goods annually through the mountains **3. (frames / inflicts)** significant environmental damage on the Alpine environment. Carbon dioxide (CO₂) from vehicle fumes becomes trapped in the narrow valleys beneath an upper layer of warmer air. The steep valley walls also **4. (maximize / implement)** the sounds generated by the traffic. The **5. (inadequate / elevated)** levels of noise and pollution **6. (impose / complement)** serious problems on the health of Alpine residents.

Laws have been **7. (elevated / implemented)** to reduce the number of vehicles in residential areas, but they have so far proved largely **8. (inadequate / maximized)** for reducing the overall volume of traffic. There are hopeful signs, however: October 2010 saw the completion of the first of two single-track tunnels comprising the Gotthard Base Tunnel—the **9. (sentimental / so-called)** GBT—which at 57 kilometers (35 miles) is the world's longest rail tunnel. It is hoped that the rail tunnel will help reduce the environmental strain on one of the world's most famous landscapes.

B. Definitions. Match the correct form of words in **red** from above with their correct definition.

- _____ : cause something undesirable
- _____ : to increase as much as possible
- _____ : not enough
- _____ : surrounded or outlined
- _____ : nostalgic for things in the past
- _____ : differ, but go well together
- _____ : raised up higher
- _____ : carry out, fulfill
- _____ : generally named or known as
- _____ : force something on someone



- ^ The purpose of the Gotthard Base Tunnel is to reduce traffic on roads and shift the focus to rail transport.

Usage

Complement and **compliment** sound alike but have different meanings.

Complement means “things may be different, but they combine well together,” e.g., (v.) *The tie **complemented** his suit.* (n.) *The tie is a good **complement** to his suit.*

Compliment means “to say something nice to or about someone,” e.g., (v.) *My daughter **complimented** me on my new dress.* (n.) *My daughter gave me a nice **compliment** about my new dress.*



RISING SEAS

As the planet warms, the sea rises and coastlines flood. How will we face the danger of rising seas?

Before You Read

A. Discussion. Discuss these questions with a partner.

1. Why do you think many people are concerned about global warming?
2. If you could make one new law to reduce the dangers of global warming, what would it be?

B. Skimming and Predicting. The passage on pages 84–89 discusses some of the challenges of rising sea levels. Read the headings and captions, and skim the passage. In your own words, write what you think these sections are mainly about. Then read the article to check your ideas.

1. Storm of the Century _____
2. Coastlines at Risk _____
3. Dutch Lessons _____
4. Retreat from the Coast _____

⚡ A parking lot full of yellow cabs is flooded as a result of superstorm Sandy that hit New York City on October 29, 2012.

1 | Storm of the Century

A By the time Hurricane Sandy veered toward the northeast coast of the United States on October 29, 2012, it had mauled¹ several countries in the Caribbean and left dozens dead. Faced with the largest storm the Atlantic had ever produced, New York and other cities ordered mandatory evacuations² of low-lying areas. Not everyone **complied**. Those who chose to ride out Sandy got a preview of the future, in which a warmer world will lead to rising seas.

B Brandon d'Leo, a sculptor and surfer, rented a second-floor apartment across the street from the beach on New York City's Rockaway Peninsula. At about 3:30 in the afternoon, he went outside. Waves were crashing against the nine-kilometer- (5.5-mile-) long boardwalk. A short time later, d'Leo and a neighbor watched the sea through the glass door of his living room. As it was getting dark, his neighbor saw something alarming. "I think the boardwalk just moved," she said. Within minutes, another **surge** of water lifted the boardwalk again. It began to break apart.

C Three large sections of the boardwalk smashed against two pine trees in front of d'Leo's apartment. The street had become a 1.2-meter- (four-foot-) deep river. Cars began to float, their alarms adding to the sound of rushing water and cracking wood. After the storm, d'Leo said, "I have six surfboards in my apartment, and I was thinking, if anything comes through that wall, I'll try to get everyone on those boards and try to get up the block."

D After a difficult night's sleep, d'Leo went outside. The water had **retreated**, but thigh-deep pools still filled parts of some streets. "Everything was covered with sand," he said. "It looked like another planet."

1 If someone is **mauled** (e.g., by a wild animal), they are attacked fiercely and aggressively.

2 During an **evacuation**, people are removed from a dangerous place.

5 | Coastlines at Risk

E By the end of the century, a hundred-year storm surge like Sandy's might occur every decade or less. Coastal cities like New York now face a double threat: rising oceans and more severe storm surges. Experts estimate that by 2070, 150 million people in the world's large port cities will be at risk from coastal flooding, along with 35 trillion dollars in property. How will they cope?

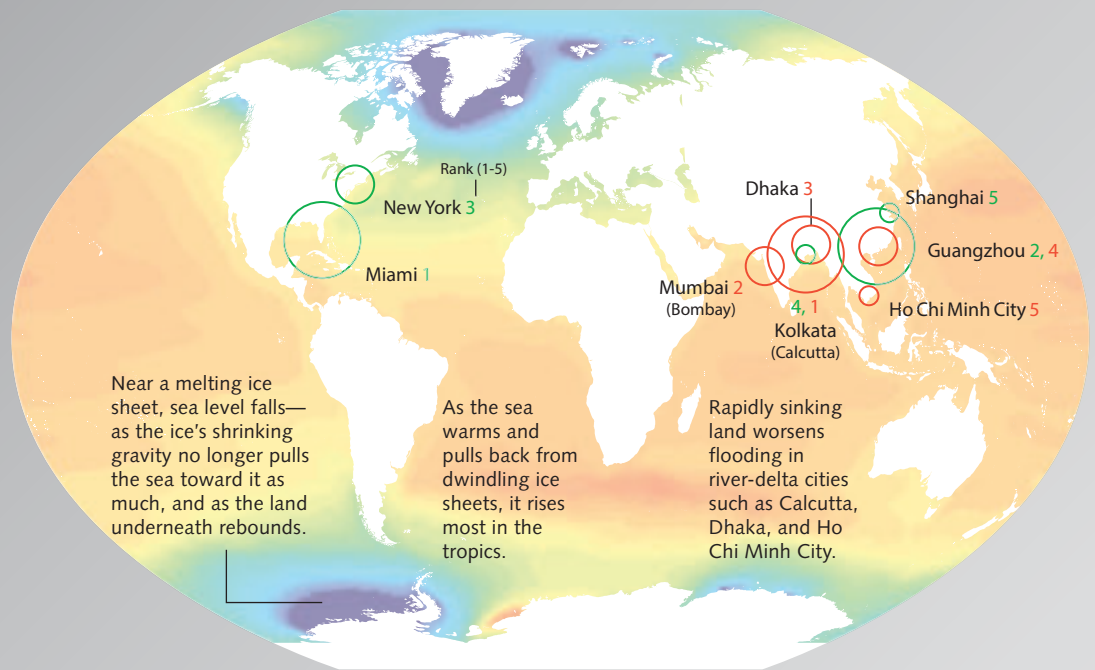
F Malcolm Bowman, a researcher at the State University of New York, believes that storm-surge **barriers** must be built across New York City's harbor. Compared with some other leading ports, New York is essentially defenseless in the face of hurricanes and floods. London, Rotterdam, St. Petersburg, New Orleans, and Shanghai have all built levees³ and storm barriers in the past few decades. When Hurricane Sandy struck, New York paid a high price for not having such protection. The storm left 43 dead and cost the city about 19 billion dollars. According to Bowman, storm-surge barriers could have prevented it. He says, "It might take five years of study and another ten years to get the political will to do it. By then, there might have been another disaster. We need to start planning immediately."

G Mayor Michael Bloomberg outlined a 19.5-billion-dollar plan to defend New York City against rising seas. His proposal called for the construction of levees, local storm-surge barriers, sand dunes, and more than 200 other measures. It went far beyond anything planned by any other U.S. city. But the mayor dismissed the idea of a harbor barrier. "A giant barrier across our harbor is neither practical nor affordable," Bloomberg said. The plan notes that since a barrier would remain open most of the time, it would not protect the city from inch-by-inch creep of sea-level rise.

3 A **levee** is a raised structure of earth or other material built to hold back water.



- ✓ Hurricane Sandy narrowed New Jersey's beaches by more than 9 meters (30 feet). In Seaside Heights, it swept away the pier under the roller coaster.



Uneven Impacts

If sea level rises an average of around 1 meter (3 feet) by 2100, winds, currents, and melting ice sheets will distribute the rise unevenly. Certain coastal cities will be especially vulnerable.

Retreat from the Coast

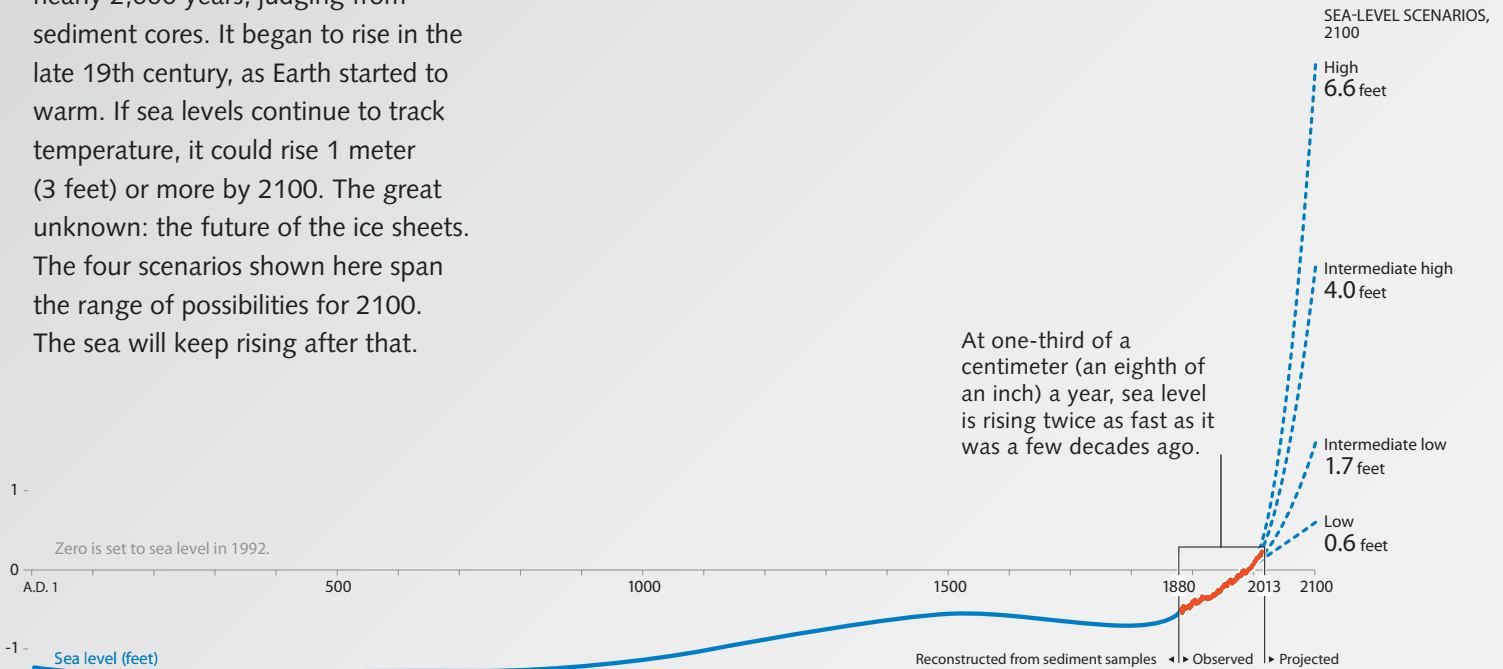
85 With the threat of sea-level rise everywhere, cities around the world have turned to the Netherlands for guidance—a country that has faced and overcome the problem of rising seas. One Dutch firm, Arcadis, has prepared a design for a storm-surge barrier to protect New York City. The same company helped design a 3.2-kilometer- (two-mile-) long barrier that protected New Orleans from Hurricane Isaac's four-meter (13.6-foot) storm surge in 2012. "Isaac was a tremendous victory for New Orleans," said Piet Dircke, an Arcadis executive. "All the barriers were closed; all the levees held; all the pumps worked. You didn't hear about it? No, because nothing happened."

110 New Orleans may be safe for a few decades, but the long-term prospects for it and other low-lying cities look **dire**. Even if we begin reducing our emissions of heat-trapping gases tomorrow, oceans will likely rise several feet, and perhaps several dozens of feet, as Earth slowly adjusts to the amount already in the atmosphere. Among the most vulnerable cities is Miami. "I cannot envision southeastern Florida having many people at the end of this century," says Hal Wanless, chair⁴ of the University of Miami's Department of Geological Science. "We think Miami has always been here and will always be here. How do you get people to realize that Miami—or London—will not always be there?"

⁴ The **chair** of a committee, organization, or company is the head of it.

Rising Seas

Sea level didn't change much for nearly 2,000 years, judging from sediment cores. It began to rise in the late 19th century, as Earth started to warm. If sea levels continue to track temperature, it could rise 1 meter (3 feet) or more by 2100. The great unknown: the future of the ice sheets. The four scenarios shown here span the range of possibilities for 2100. The sea will keep rising after that.



Experts estimate that by 2070, 150 million people in the world's large port cities will be at risk from coastal flooding, along with 35 trillion dollars in property. How will they cope?

J Unless we change course dramatically, our carbon emissions will drastically change the geography of many shorelines by the next century, if not sooner, and large numbers of people will have to abandon coastal areas in Florida and other parts of the world. "From the Bahamas to Bangladesh and a major amount of Florida, we'll have to move, and we may have to move at the same time," says Wanless. Columbia University geophysicist Klaus Jacob sees most of Manhattan's population fleeing to higher ground and the island becoming a kind of Venice, subject to periodic flooding, perhaps with canals and yellow water cabs. At different times in different countries, engineering solutions will no longer be enough. Then the retreat from the coast will begin.

Dutch Lessons

Can a single storm change not just a city's but a nation's **policy**? It has happened before. The Netherlands experienced its own coastal catastrophe 60 years ago, and it transformed the country.

The storm roared in from the North Sea on the night of January 31, 1953. Ria Geluk was six years old at the time and living on an island in the southern Dutch province of Zeeland. She remembers a neighbor knocking on her family's door in the middle of the night to tell them that the dike had failed. Later that day, the whole family climbed to the roof, where they huddled⁵ in blankets and heavy coats. Geluk's grandparents lived just across the road, but water poured into the village with such force that they were trapped in their home. They died when it collapsed. The disaster killed 1,836 in all, including a baby born on the night of the storm.

Afterward the Dutch began an **ambitious** program of dike and barrier construction called the Delta Works, which lasted more than four decades and cost more than six billion dollars. One crucial project was the eight-kilometer- (five-mile-) long barrier built to defend Zeeland from the sea. The final component of the Delta Works—a movable barrier protecting Rotterdam Harbor and some 1.5 million people—was finished in 1997. Like other primary sea barriers in the Netherlands, it's built to **withstand** a 1-in-10,000-year storm—the strictest standard in the world.

The transparent domes of Rotterdam's Floating Pavilion represent an even more innovative approach to taming⁶ the sea. The three domes—each about three stories tall—are made of a plastic that is a hundred times as light as glass. Though the domes are used for meetings and exhibitions, their main purpose is to demonstrate the potential of floating urban architecture. The city anticipates that as many as 1,200 homes will float in the harbor by 2040. "We think these structures will be important not just for Rotterdam but for many cities around the world," says Bart Roeffen, the architect who designed the pavilion.

An inscription⁷ on the side of a storm-surge barrier in Zeeland says *Hier gaan over het tij, de maan, de wind, en wij*—Here the tide is ruled by the moon, the wind, and us. It reflects the confidence of a generation that **took for granted**—as we no longer can—a reasonably stable world. "We have to understand that we are not ruling the world," says Jan Mulder of Deltares, a Dutch coastal management firm. "We need to adapt."

⁵ If people **huddle** together, they stand, sit, or lie close to each other, usually because they are cold or frightened.

⁶ If you **tame** something dangerous, you bring it under control.

⁷ An **inscription** is writing carved into something made of stone or metal.



The Oosterschelde Flood Barrier is the largest of 13 ambitious Delta Works, designed to protect a large part of the Netherlands from flooding.



Rotterdam's Floating Pavilion is an innovative approach to addressing the challenges of climate change and rising seas. >





Reading Comprehension

Multiple Choice. Choose the best answer for each question.

Gist

1. What would be another good title for this reading?
- Can Our Coasts Be Saved?
 - The Devastation of Hurricane Sandy
 - How the Netherlands Beat Back the Sea
 - How to Slow Global Warming

Inference

2. What helped save lives when Hurricane Sandy struck New York?
- Levees and storm barriers held most of the water back.
 - Boardwalks helped slow the surge of water.
 - The storm had weakened after leaving the Caribbean.
 - Low-lying areas had already been evacuated.

Figurative Language

3. Which of these sentences does NOT include an example of figurative language?
- By the time Hurricane Sandy ... left dozens dead. (lines 2–6)
 - “Everything was covered ... like another planet.” (lines 40–41)
 - Columbia University... yellow water cabs. (lines 127–132)
 - Then the retreat from the coast will begin. (lines 134–135)

Reading Maps

4. Which city is at risk of losing up to \$3 trillion in assets due to rising sea levels?
- Miami
 - Dhaka
 - Ho Chi Minh City
 - Shanghai

Inference

5. How does the author choose to end the article?
- Optimistically. We have the capacity to fix the problem.
 - Pessimistically. Unless we change course, we will have to move inland.
 - Neutrally. We don't know how the author feels.
 - With humor. Mentioning that New York will be like Venice with water cabs takes away the seriousness of the issue.

Detail

6. What is Rotterdam's Floating Pavilion?
- temporary shelters for flood victims
 - an example of possible future living spaces
 - domes that convert wave energy into power
 - meeting spaces that also act as surge barriers

Purpose

7. What is the main purpose of the section on page 88?
- to describe the event that caused the Netherlands to begin their dike- and barrier-building program
 - to show how dangerous coastal communities like Zeeland can be, even when they are well protected
 - to make a case for expanding the Dutch success story in Zeeland to other parts of the country
 - to illustrate that storms 60 years ago were just as dangerous as the storms of today

Critical Thinking

Analyzing: Why does Piet Dircke say that “Isaac was a tremendous victory for New Orleans”? What do you think he means by that?

Discussion: How do you feel when you look at the map on page 88? Do you think we could cope with such a scenario? What would be the effect of such a retreat away from the coasts?



Reading Skill

Reading a Text Critically

Critical reading is a process of reading that goes beyond simply understanding what a text says. It involves analyzing, interpreting, and evaluating the text as you read through it, and reflecting on it afterward. Being a successful critical reader allows you to see how a text fits into a greater academic context.

When you read a text critically, you identify the text's overall strengths and weaknesses, and evaluate the writer's arguments. A useful technique is to read a text twice. The first time, read it with as much generosity as possible. Look for what makes the writer's argument compelling. Find claims that are persuasive. Assume the arguments are well supported, balanced, and reasonable. The second time, read the text from the opposite viewpoint. Scrutinize each argument. Look for poorly supported or exaggerated claims. See if you can find bias, faulty reasoning, or other weaknesses. Then reflect on what you have read and decide where you stand.

A. Reading Critically. Read this excerpt from *Rising Seas* using the technique described above.

Unless we change course dramatically, our carbon emissions will drastically change the geography of many shorelines by the next century, if not sooner, and large numbers of people will have to abandon coastal areas in Florida and other parts of the world. "From the Bahamas to Bangladesh and a major amount of Florida, we'll have to move, and we may have to move at the same time," says Wanless. Columbia University geophysicist Klaus Jacob sees most of Manhattan's population fleeing to higher ground and the island becoming a kind of Venice, subject to periodic flooding, perhaps with canals and yellow water cabs. At different times in different countries, engineering solutions will no longer be enough. Then the retreat from the coast will begin.

B. Discussion. Discuss the questions below with a partner.

1. How important does the author think the issue is? What persuasive language does the author use to convey this?
2. Look at the numbers and dates the author uses in the first sentence. How reliable and accurate do you think this information is? Do we know the source of the data?
3. The author's view is supported by the opinions of two other people. Who are they? How valid are their opinions?
4. Do you think the author might be biased? Give reasons for your answer.

Vocabulary Practice

A. Completion. Complete the information using the correct form of the words and phrases in the box. One word is extra.

ambitious	barrier	comply	dire	envision
policy	retreat	surge	take for granted	withstand

Imagine Boston's Faneuil Hall, the U.S. Naval Academy, and Jamestown—site of the first English colony in North America—lost forever due to the effects of rising seas. It's a future many Americans cannot **1.** _____, but according to a report from the Union of Concerned Scientists (UCS), their future looks bleak.

Amid all the concern and **2.** _____ warnings regarding climate change, little attention has been paid to how it could affect cultural resources, and what the country's **3.** _____ should be to protect them. "It's an ignored issue in the world of climate change assessment," says Adam Markham, director of climate impacts for the UCS.

In North Carolina, north of Cape Hatteras, sea levels have risen by four times the national average. Residents and vacationers in the resort area may **4.** _____ that the low-lying area will always be as they remember it. But the delicate seashore would not be able to **5.** _____ the rising sea levels and increase in storm activity. Residents will undoubtedly have to **6.** _____ from the coast and move inland.

Even sites from recent history will require drastic changes to last into the next generation. NASA is dealing with rising seas at many of its locations. According to the report, "More than two-thirds of NASA facilities [are] within 16 feet of sea level," including the Kennedy Space Center launch pads. NASA has embarked on a(n) **7.** _____ program to rebuild and strengthen nearby dunes that acted as natural **8.** _____ several times, but storm **9.** _____ still broke through.



^ According to a recent report, several cultural landmarks such as Boston's Faneuil Hall could be at risk due to the effects of rising seas.

B. Definitions. Match the definitions to words from the box in **A**. Three words are extra.

1. _____: to do what you are asked to do
2. _____: to move back to get away from danger
3. _____: a sudden, large increase
4. _____: a set of rules about how something should be done
5. _____: to not be harmed or affected by something
6. _____: not easily done or achieved
7. _____: to picture something in your mind

Word Link

The word root **poli** means "city," e.g., *police*, *policy*, *politics*, *metropolis*, *Acropolis*.

VIEWING Time and Tide

Before You Watch

A. Definitions. Read the information and then circle the correct definition for each word.

Smith Island is a lonely **outpost**, 12 miles out in the Lower Chesapeake Bay. The shallow grassy waters around the **cluster** of islands that comprise Smith Island are ideal blue crab **habitat**. For more than 300 years, the people here have survived on this remote island, but increasingly they sense that a more **precarious** future lies ahead.

1. An **outpost** is a town that is _____.
a. far from other towns b. close to a large city
2. A **cluster** of islands is _____.
a. a long line of islands b. a group of islands that are close together
3. A **habitat** is a place where a plant or an animal _____.
a. naturally grows or lives b. is displayed to the public
4. Something that is **precarious** is _____.
a. unsafe or unsteady b. safe or steady

B. Discussion. Discuss these questions with a partner.

1. What do you think is the main occupation of residents on Smith Island?
2. What kind of problems do you think they face?



◀ Smith Island has no land bridges, so people traveling there can only access it by boat.

While You Watch

A. Main idea. Watch the video and check (✓) the main idea.

- Smith Island is dependent on seafood. There are fewer fish and crabs these days, and no one is sure why. Some scientists think the area has been overfished.
- Smith Island has lost half of its population. People can no longer make a living on Smith Island and are moving to the mainland where there are more jobs.
- Smith Island is vulnerable to the ocean. Its land is being eroded, and this is difficult for its inhabitants. Rising seas may one day make the island unfit to live on.
- Smith Island was hit by a Category 4 hurricane. This caused severe erosion of its land and made much of the island impossible to live on.

B. Completion. Circle the correct words to make the sentences true.

1. In the past 100 years, the population of Smith Island has dropped by (**500** / **800**).
2. Most of Smith Island is (**one foot** / **two feet**) above sea level.
3. Chesapeake Bay has risen by more than a half foot over the past (**decade** / **century**).
4. The people of Smith Island are (**building barriers to slow erosion** / **in denial about the effects of the rising seas**).
5. If a Category 4 hurricane hits Smith Island, (**the island will completely disappear** / **there will only be a few high spots left**).

After You Watch

Discussion. Discuss these questions with a partner.

1. What else could be done to help the people of Smith Island?
2. Why do you think crab catches are so small? Is the rising sea to blame for this?
3. What other places do you know that are threatened by rising seas?



◀ Smith Island faces an uncertain future due to rising sea levels.