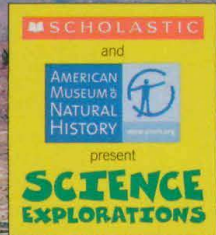


earth science



2002

A Dwindling

As water demands rise, the Colorado River is running dry

About 100 years ago, the Colorado River raged southward toward the Gulf of California (see map, p. 7). Where the two bodies of water met, great walls of water sprayed high into the sky. This amazing water show no longer happens. These days, the Colorado River often dries up before it even reaches the gulf.

Like many of the world's sources of fresh water, the Colorado River is shrinking.

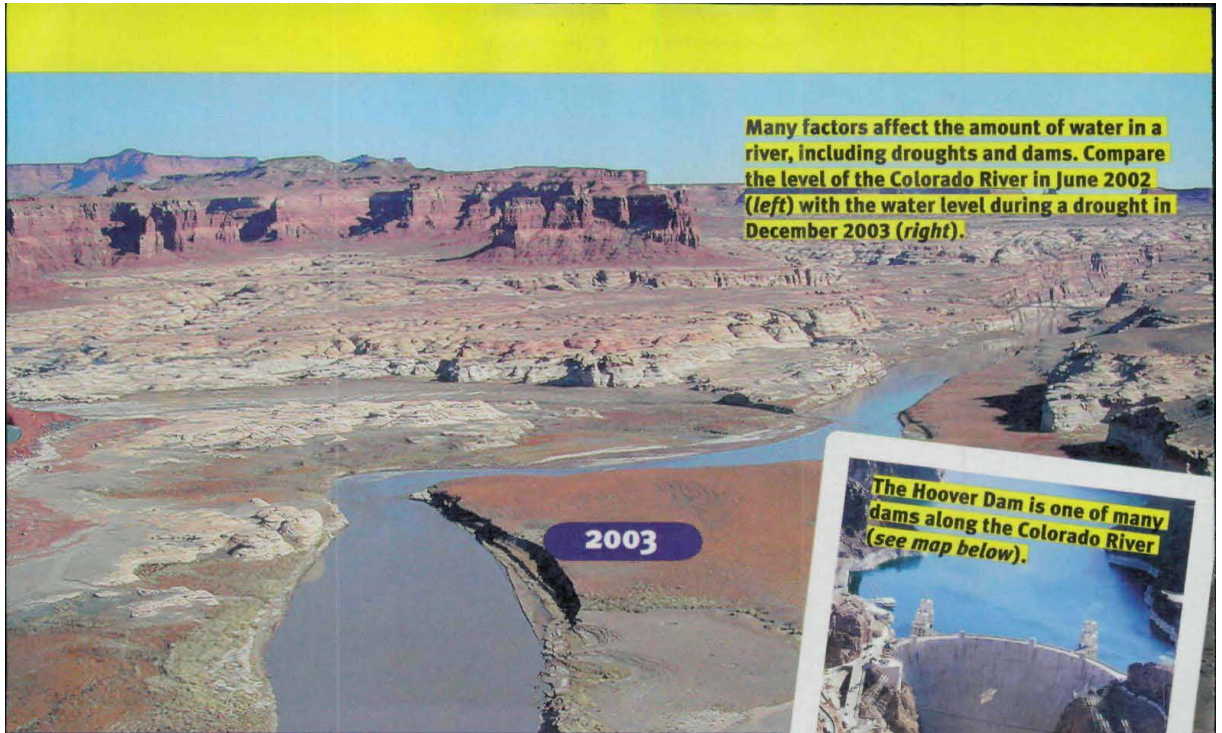
People are draining away huge amounts of this water for personal use, such as drinking and bathing. Water is also used to grow crops and raise livestock, and in industrial processes. For instance, fresh water is used to manufacture goods like T-shirts and computers.

As the world's population expands, the demand for water is rising. Freshwater sources are now being drained more quickly than natural processes like rain



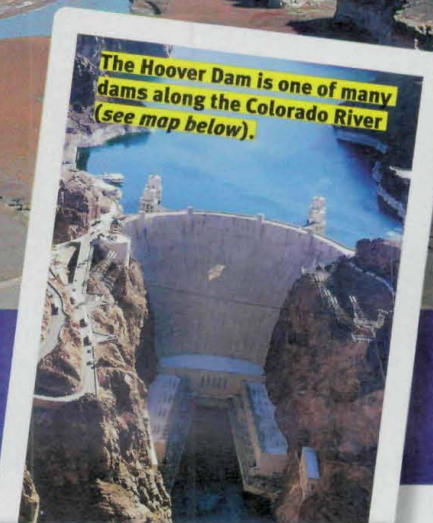
can refill them. As a result, many parts of the world are facing water shortages. "Ensuring that everyone has enough fresh water will be one of the major issues facing us this century," says

A Dwindling River



Many factors affect the amount of water in a river, including droughts and dams. Compare the level of the Colorado River in June 2002 (left) with the water level during a drought in December 2003 (right).

RIVER



The Hoover Dam is one of many dams along the Colorado River (see map below).

JOHN C. DOHRNWEID (COLORADO RIVER, LEFT); K. FREY AMNH-CBC (ELEANOR STERLING); ARON MAYER/LAS VEGAS SUN (AP IMAGES) (HOOPER DAM); MAP BY JIM MCMAHON

Eleanor Sterling. She is a scientist in charge of the exhibition *Water: H₂O = Life* at the American Museum of Natural History in New York City, which highlights water's many forms and uses.

Water Pressure

Roughly 70 percent of Earth's surface is covered in water. So how can there be a water shortage? Most of the water on Earth is salty. Less than 3 percent of it is fresh water, and only a tiny fraction of that is available for use.

In addition, freshwater sources are not spread evenly around

the planet. Water shortages are greatest in **arid** regions like southern Africa and the southwestern United States.

To make matters worse, the human populations in many of these regions are increasing.

Phoenix, Arizona, is one of these regions. The city and surrounding areas are home to roughly 3 million people. Thousands of people move there each year. Yet the city—located

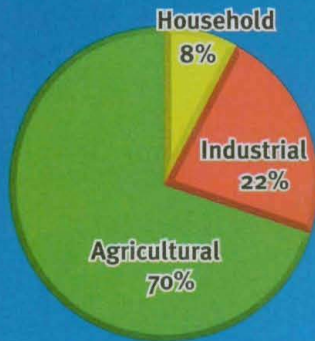


in the middle of the Sonoran Desert—receives less than 25 centimeters (10 inches) of rain a year. That's only one third of the national average.

A Dwindling River

Percent of Worldwide Water Use, by Activity

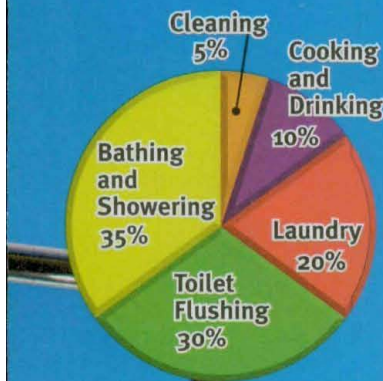
Household activities, like bathing and washing dishes, make up less than 10 percent of fresh water used. Which type of activity uses the most water?



GRAPH SOURCE: WORLD BUSINESS COUNCIL FOR SUSTAINABLE DEVELOPMENT (WBCSD)

Percent of Household Water Use, by Activity

The graph below shows how water is generally used in households in an industrialized country like the United States. What is one way you could reduce water usage in your household?



GRAPH SOURCE: ENVIRONMENT CANADA (ECCC)



During sprinkler irrigation, some water is lost to evaporation.

Watering the Desert

How do people survive in the dry Southwest? **Groundwater** provides one source of fresh water. But there is not enough groundwater to meet the area's needs. The bulk of the water is taken from the Colorado River.

This 2,334 kilometer (1,450 mile)-long river supplies water to several big cities, including Las Vegas and San Diego. In all, it delivers fresh water to about 30 million people. The river also **irrigates** 14,973 square kilometers (3.7 million acres) of farmland.

Southwest Distress

The demand for water is taking a toll on the river. Except in heavy flood years, dams and canals capture every drop of the Colorado River for use. As the region's population grows, the river is becoming unable to meet the demand for water.

Overuse of the Colorado River is threatening the water supply for homes, as well as for ranchers

and farmers. But the drying river has also put wild plants and animals at risk. The Colorado River **Delta** was once brimming with wildlife. But little water reaches the delta now. As a result, many plants, bobcats, beaver, deer, shrimp, and several species of fish have lost a home.

Water Solutions

"To tackle the problem of water shortages, the focus should be on conservation—how to live with less of it," says Sterling.

Researchers are trying to help reduce water use by coming up

Words to Know

Percent—number out of 100. For example, 70 percent means 70 out of every 100.

Arid—very dry due to little rainfall

Groundwater—water that soaks into the ground and is stored there

Irrigate—supply water to grow crops

Delta—area where a river enters a body of water and deposits sediment

Evaporation—the changing of a liquid, like water, into a gas

NOAH CLAYTON/GETTY IMAGES (IRRIGATION SPRINKLER); CORBIS/VEER (SHOWERHEAD); DIGITAL VISION PHOTOGRAPHY/VEER (KIDS)

with new ways to irrigate crops. "In the Southwest, large amounts of water [used to water crops] are lost to **evaporation**," says Sterling. So scientists are developing new irrigation methods that deliver water directly to plants' roots. This means less water would be lost to evaporation.

Personal Decisions

Sterling says that individuals also can make a difference when it comes to saving water. For instance, instead of dumping leftover drinking water down

the drain, use it to water plants. Another water-saving tip: Don't leave the water running when you are brushing your teeth or washing dishes, says Sterling.

Other ways to conserve water are more surprising. Water is used to manufacture computer chips in cell phones, cameras, laptops, and toys. So Sterling recommends purchasing no more of these items than you need. In addition to saving money, you'll be helping to protect the planet's water supply.

—Judith Jango-Cohen

check it out

Earth's surface is nearly three-quarters water. So why should you care about saving a few gallons here or there? Every drop counts. Even in places where it rains a lot, water conservation ensures there is enough for humans and wildlife alike.

Water: H₂O = Life is a new exhibition opening November 3, 2007, at the American Museum of Natural History. In it, you can explore the mystery and necessity of water—and learn how you can help conserve this vital resource. To learn more, ask your teacher, or visit www.amnh.org or <http://ology.amnh.org>.

Kids!

SPEAK UP ABOUT THE ENVIRONMENT!

The Kids' Environmental Report Card lets your voice be heard!

With the Kids' Environmental Report Card, Science Explorations presents a fun and easy way to explore and speak up about the planet's environmental issues. Go to www.scholastic.com/reportcard to:

- ✓ **add your voice** to weekly survey questions
- ✓ **write** a letter to a policymaker
- ✓ **e-mail** a museum scientist with your questions about the environment
- ✓ **learn** more about key issues
- ✓ **chat** with other kids about environmental topics

In April, we'll publish a special Earth Day report to show the world what kids are thinking about the planet and how to protect it.

In your opinion, which of the following is the most important environmental issue facing the world today?

- A. Water resources
- B. Energy resources
- C. Wildlife conservation
- D. Global climate change

Here's the first survey question:

GO TO www.scholastic.com/reportcard TO VOTE!

