

Heat Waves

Directions: Read the passages below and on page 2. Then answer the questions that follow.



In 2003, Europeans had to endure one of the scariest natural events in recent history. From July to August 2003, one of the hottest summers in record devoured European countries. The giant heat wave led to a catastrophic crisis, causing drought and famine in Southern Europe and killing around 35,000 people.

Not all **heat waves** are the same. While the lethal 2003 European Heat Wave stuck around for a full month, other waves can last only a few days. Some heat waves have high humidity, while others are dry. Heat waves vary in length, temperature, and conditions.

Heat waves can form in many ways. Often, these prolonged periods of excessive hot weather form when warm, high pressure systems stop moving and stick around in a certain region. Flows of air called **jet streams** steer the movements of these high and low pressure areas, and can sometimes bring unusually hot air into the area. This causes a heat wave. If there's no rain or clouds to cool things off, the heat will persist. Cities are especially vulnerable to heat waves since they lack forests and cooling pools of water, like lakes. This is known as the '**urban heat island**' effect, and can make a heat wave hotter and longer.

It's important to stay safe during hot summer periods. Heat waves are dangerous. The hot air can kill people by exhausting their bodies and can cause heat stroke, exhaustion, cramps, and many other ailments.



Historical Heat Waves

1980 U.S. Heat Wave

Most of the midwestern U.S. and Southern Plains were devastated by this great heat wave during the summer of 1980. 1,700 lives were lost during this tragic event, which also cost the U.S. nearly \$20 billion dollars in agricultural damages.

2006 N. American Heat Wave

This heat wave spread throughout the United States and Canada, killing nearly 225 people. In some areas, temperatures reached 117°F.

2018 Northeast Asia Heat Wave

In the middle of July of 2018, a heat wave arrived in Japan after a major flood. It caused 22,000 people to be hospitalized. The heat wave caused 80 deaths.

2020 Siberian Heat Wave

In June of 2020, one town in Siberia reached 100°F. Siberia is typically one of the coldest places on Earth, and this is possibly the hottest temperature on record so far north in the Arctic.

Heat Waves

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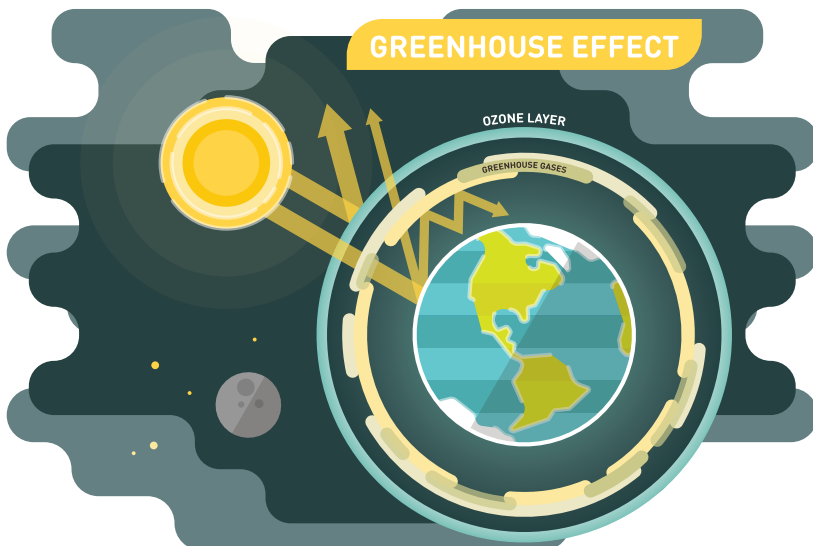


Heat Waves and the Greenhouse Effect

Many scientists believe the recent increase in heatwave activities are correlated with the Earth's **greenhouse effect**.

When energy from the sun enters the Earth's atmosphere, it can get trapped. This is called the greenhouse effect.

When sunlight warms the surface of the Earth, the heat will radiate through the atmosphere and back towards space. Some of this heat is able to escape the planet, but much of the sun's energy is absorbed by the ocean and land, or reflected back to the earth by clouds and greenhouse gases like methane and carbon dioxide. This heat then recycles back to our planet and can continue to warm the surface.



Heat Wave Safety Tips

Stay hydrated.

Drink water. Avoid drinking salty, syrupy, carbonated, or caffeinated drinks.

Stay indoors.

If you do go outside, stick with a buddy.

Dress appropriately.

Wear light, loose fitting clothes.

Cool down.

If you don't have access to air conditioning, take a towel, soak it in cold water, and wear it around your neck. It will keep your body cool.

Questions

1. What are two safety tips you can follow during a heat wave?

2. How do heat waves form?

3. What is the urban heat island effect?
