

Unit 4: Hurricanes

Narrator: Cyclone, typhoon, hurricane—all of these names are used around the world to describe the most powerful storm known to man.

Hurricanes are unpredictable, but scientists have a thorough understanding of how hurricanes form and sustain their power.

In the Atlantic Ocean, hurricane season peaks during the late summer months when tropical waters are the warmest.

Hurricanes form from a cluster of thunderstorms that suck up the warm, moist air, and move it high into Earth's atmosphere. The warm air is then converted into energy that powers the hurricane's circular winds.

These winds spin around a low-pressure center called "the eye," which can provide a 20-30-mile radius of eerie calm.

Encircling it is the "eyewall," a towering ring of clouds with some of the fastest wind speeds of the hurricane.

Surrounding the "eyewall" are curved bands of clouds, "the rainbands," often tens of miles wide, releasing sheets of rain—and sometimes tornadoes.

When a tropical storm's winds reach at least 74 miles per hour, it becomes a hurricane. The hurricane then receives a category ranking of 1 to 5 on the Saffir-Simpson scale, based on its wind speed and potential damage.

But wind speed isn't always the most dangerous component when hurricanes come near land—it's storm surge.

Storm surge is caused when winds from an approaching hurricane push water towards the shoreline up to 20 feet above sea level and can extend 100 miles. 90 percent of all hurricane deaths are the result of storm surge.

While hurricanes can cause mass devastation, just like other natural disasters, they serve a higher purpose within the global ecosystem.

Hurricanes help regulate our climate by moving heat energy from the equator to the poles, keeping the Earth's temperature stable.

Over time, science has helped us to better understand hurricanes and predict their paths, saving lives through early warning systems and helping us build better infrastructure to protect our cities.

The more we study these complex storms, the better we can prepare for them and minimize their impact on human lives.