

# Hurricanes

## INTRODUCTION



Hurricanes are massive storms with powerful winds and heavy rain. They occur above ocean waters near the equator. The reason for this is that hurricanes need warm water to form.

Most hurricanes that form in the Atlantic Ocean happen between June 1<sup>st</sup> and November 30<sup>th</sup>, this period is called the hurricane season.

The winds of a hurricane can reach speeds of up to 200 miles per hour! Some of these huge storms are so strong that they can knock down trees and destroy buildings. A hurricane can be up to 600 miles in size and usually lasts for over a week. Most of these violent storms move over the open ocean between 10 and 20 miles per hour.



Hurricanes, cyclones and typhoons are the same kind of tropical storms. The different names depend on where the storm takes place. Hurricanes occur in the Atlantic Ocean and the Northeast Pacific Ocean.

When a tropical storm takes place in the Northwest Pacific, they are called typhoons. Cyclones occur in the South Pacific and Indian Ocean. Nonetheless, the scientific name for these storms are tropical cyclones.

# Hurricanes

## HOW THEY FORM

Hurricanes form above ocean waters of 80°F or warmer. This is one of the main reasons why they mostly happen in tropical areas where temperatures are always high.

Hurricanes are formed when warm and moist air above the ocean rises. When the air rises upward, there is less air near the surface of the ocean. This event causes low pressure areas near the surface.

The air from surrounding areas with higher air pressure is pushed towards the area having low pressure. When the 'new' air becomes warmer, it also rises into the atmosphere. As the air rises, it gradually cools off and the water of the moist air forms clouds. These clouds get bigger as more warm and moist air rises from the surface of the ocean.

At some point, the clouds and winds form a system and start spinning and growing at the same time. This system is called the Coriolis Effect. The Coriolis Effect forces winds to spin towards the right or left because of the rotations of the Earth.

When the winds of the 'system' reach 39 miles per hour, it is called a tropical storm. It becomes a hurricane at 74 miles per hour.

Hurricanes get weaker when they hit land. The reason for this is that they lose their source of energy, which are warm ocean waters. When they are on land, they cannot suck up any more water. Nonetheless, when they first reach land, they are still very strong and bring high winds and often floods that can be very destructive.





# Hurricanes

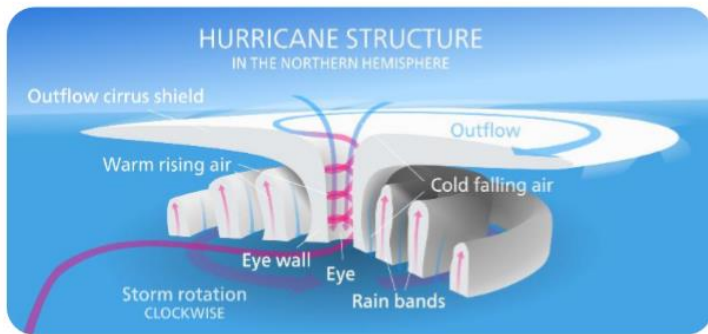
## DIFFERENT PARTS



The eye is located in the center of a hurricane.

Normally, the eye has a diameter between 20 and 40 miles. The entire storm rotates around the eye. This part of the storm is actually the calmest. The sky is clear and the winds are not very strong.

The eye wall surrounds the eye of a hurricane. This part is usually between 5 and 30 miles wide. The heaviest rainfall and strongest winds usually occur within the eye wall.



The rain bands are located around the eye wall and consist of dense clouds with lots of rainfall and thunderstorms. They make the hurricane look like a pinwheel and spin inwards toward the center of the storm. The rain band varies in width

from just a few miles to tens of miles. They can vary between 50 and 300 miles long.

# Dangerous Hurricanes

## IN HISTORY

The largest hurricane ever recorded was in 1979 in the northwest Pacific. It had a diameter of nearly 1,400 miles and wind speeds up to 190 miles per hour.

The deadliest hurricane in the United States occurred in Texas in 1900. It killed more than 8,000 people.



Hurricane Katrina was the costliest hurricane in the United States. This destructive tropical storm happened in 2005 and caused an estimated damage of \$108 billion. Katrina caused massive floods that covered 80% of the city of New Orleans. Katrina was the third deadliest hurricane ever recorded in the United States.

The deadliest tropical cyclone ever recorded happened in Bangladesh in 1970. Between 150,000 and 300,000 people were killed because of this cyclone.

# Things to know

## ABOUT HURRICANES



The winds of a hurricane in the southern hemisphere rotate clockwise while the winds of hurricanes in the northern hemisphere rotate in an anti-clockwise direction. This phenomenon is caused by the Coriolis Effect.

Around 2 million people have died in hurricanes over the last 200 years.



The planet Jupiter has had a hurricane happening on its surface for more than 300 years! This violent storm can be seen as a red spot and it is bigger than our planet.

Hurricanes are given human names by the World Meteorological Organization (WMO). The names are in alphabetical order and the first storm of the year always starts with an "A".

The Saffir-Simpson scale is used to classify hurricanes in the United States. Totally, there are 5 categories on this scale which are based on wind speeds. Category 5 is reserved for the strongest hurricanes with winds exceeding 156 miles per hour.

The word hurricane comes from a Native American word, *hurucane*, which means evil spirit of the wind.

## SAFFIR-SIMPSON SCALE

Cat.	Winds	Damage
1	74-95 mph	Minimal
2	96-110 mph	Moderate
3	111-130 mph	Major
4	131-155 mph	Extensive
5	> 155 mph	Catastrophic

Tropical Cyclones are the only natural disasters that have been given their own names.

When hurricanes reach the land, they often produce a 'storm surge'. This event occurs when strong winds drive the sea towards the coast and cause the water level to rise. Large waves up to 20 feet are formed and can be very destructive.

