

# Hurricanes

Hurricanes are giant, spiraling tropical storms that can pack wind speeds of over 160 miles (257 kilometers) an hour and unleash more than 2.4 trillion gallons (9 trillion liters) of rain a day. These same tropical storms are known as cyclones in the northern Indian Ocean and Bay of Bengal, and as typhoons in the western Pacific Ocean.

The Atlantic Ocean's hurricane season peaks from mid-August to late October and averages five to six hurricanes per year.

Hurricanes begin as tropical disturbances in warm ocean waters with surface temperatures of at least 80 degrees Fahrenheit (26.5 degrees Celsius). These low pressure systems are fed by energy from the warm seas. If a storm achieves wind speeds of 38 miles (61 kilometers) an hour, it becomes known as a tropical depression. A tropical depression becomes a tropical storm, and is given a name, when its sustained wind speeds top 39 miles (63 kilometers) an hour. When a storm's sustained wind speeds reach 74 miles (119 kilometers) an hour it becomes a hurricane and earns a category rating of 1 to 5 on the Saffir-Simpson scale.

Hurricanes are enormous heat engines that generate energy on a staggering scale. They draw heat from warm, moist ocean air and release it through condensation of water vapor in thunderstorms.

Hurricanes spin around a low-pressure center known as the "eye." Sinking air makes this 20- to 30-mile-wide (32- to 48-kilometer-wide) area notoriously calm. But the eye is surrounded by a circular "eye wall" that hosts the storm's strongest winds and rain.

These storms bring destruction ashore in many different ways. When a hurricane makes landfall it often produces a devastating storm surge that can reach 20 feet (6 meters) high and extend nearly 100 miles (161 kilometers). Ninety percent of all hurricane deaths result from storm surges.

A hurricane's high winds are also destructive and may spawn tornadoes. Torrential rains cause further damage by spawning floods and landslides, which may occur many miles inland.

The best defense against a hurricane is an accurate forecast that gives people time to get out of its way. The National Hurricane Center issues hurricane watches for storms that may endanger communities, and hurricane warnings for storms that will make landfall within 24 hours.

## International Standard for Surface Winds Relating to Tropical Cyclones

TCType	Wind (km/h)	Surge (m)	Rain (mm)	Waves (m)
Depression	> 37	0.5	200+	depends
Tropical Storm	> 63	1.0	200+	depends
Hurricane <i>Category 1</i>	> 118	1.2+	200+	depends
Hurricane <i>Category 2</i>	>152	1.8+	200+	depends
Hurricane <i>Category 3</i>	> 176	2.7+	200+	depends
Hurricane <i>Category 4</i>	>209	4.0+	200+	depends
Hurricane <i>Category 5</i>	> 251	5.5+	200+	depends

## List of Storm Names Used By Year

Names used for Atlantic Tropical Storms					
<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
Arlene	Alberto	Andrea	Arthur	Ana	Alex
Bret	Beryl	Barry	Bertha	Bill	Bonnie
Cindy	Chris	Chantal	Cristobal	Claudette	Colin
Don	Debby	Dorian	Dolly	Danny	Danielle
Emily	Ernesto	Erin	Edouard	Elsa	Earl
Franklin	Florence	Fernand	Fay	Fred	Fiona
Gert	Gordon	Gabrielle	Gonzalo	Grace	Gaston
Harvey	Helene	Humberto	Hanna	Henri	Hermine
Irma	Isaac	Imelda	Isaias	Ida	Ian
Jose	Joyce	Jerry	Josephine	Julian	Julia
Katia	Kirk	Karen	Kyle	Kate	Karl
Lee	Leslie	Lorenzo	Laura	Larry	Lisa
Maria	Michael	Melissa	Marco	Mindy	Martin
Nate	Nadine	Nestor	Nana	Nicholas	Nicole
Ophelia	Oscar	Olga	Omar	Odette	Owen
Philippe	Patty	Pablo	Paulette	Peter	Paula
Rina	Rafael	Rebekah	Rene	Rose	Richard
Sean	Sara	Sebastien	Sally	Sam	Shary
Tammy	Tony	Tanya	Teddy	Teresa	Tobias
Vince	Valerie	Van	Vicky	Victor	Virginie
Whitney	William	Wendy	Wilfred	Wanda	Walter

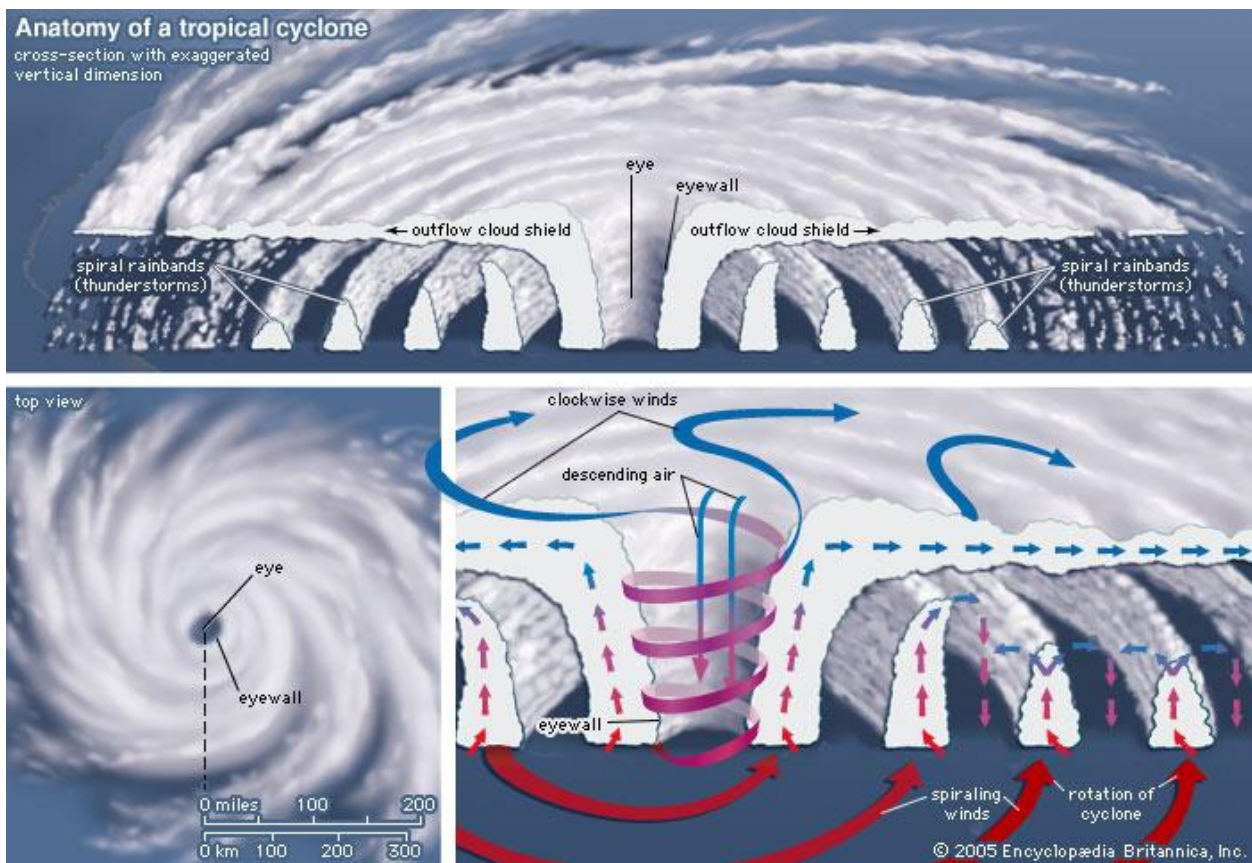
## Atlantic Names

Each of the six lists contains 21 names -- a name for each letter of the alphabet except Q, U, X, Y, and Z. (These letters are not included because there are not enough names beginning with those letters.) These lists are recycled every six years and names are replaced when a hurricane name is retired.

In 2005, for the first time, all of the names on the 21-name list were used during a record-breaking season which saw 28 named storms. A rule had already been created to deal with a case like this: resort to the 24-letter Greek alphabet. So, following the letter W, the names used are: Alpha, Beta, Gamma, Delta, Epsilon, Zeta, Eta, Theta, Iota, Kappa, Lambda, Mu, Nu, Xi, Omicron, Pi, Rho, Sigma, Tau, Upsilon, Phi, Chi, Psi, and Omega. Should the nearly impossible happen and the Greek alphabet also gets exhausted, the names begin again at Alpha, Beta, etc.

## Retired Names

Tropical storms or hurricanes that have severe impacts, either on lives or on the economy, are usually remembered many years after the devastation. These storms become part of weather history. Many feel that, in these cases, reusing the name of such a devastating storm in the future would lack compassion and sensitivity. Whenever a tropical cyclone has had this level of impact, a country affected by the storm can request that the World Meteorological Organization (WMO) officially “retire” the name from use.



Sources: <http://environment.nationalgeographic.com/environment/natural-disasters/hurricane-profile>

<http://www.nhc.noaa.gov>

[www.ec.gc.ca/ouragans-hurricanes](http://www.ec.gc.ca/ouragans-hurricanes)

<http://www.britannica.com>