

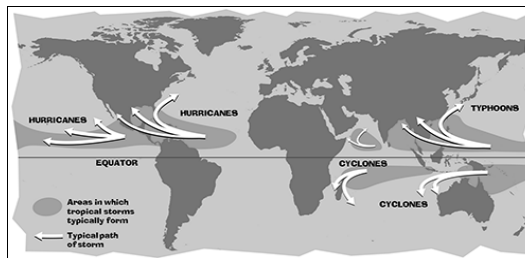
SERVICE - Dorian Relief



Lesson 1 How hurricanes form & move



Hurricanes are the most violent storms on Earth. They form near the equator over warm ocean waters. Actually, the term hurricane is used only for the large storms that form over the Atlantic Ocean or eastern Pacific Ocean. The generic, scientific term for these storms, wherever they occur, is tropical cyclone. Other names they are given, depending on where in the world they are born, are typhoons, cyclones, severe tropical cyclones, or severe cyclonic storms. Whatever they are called, the same forces and conditions are at work in forming these giant storms, any of which can cause damage or devastation when they hit land where people live. Dorian was a very powerful of this kind!



Tropical cyclones are like engines that require warm, moist air as fuel. So the **first** ingredient needed for a tropical cyclone is warm ocean water. That is why tropical cyclones form only in tropical regions where the ocean is at least 80 degrees F for at least the top 50 meters (about 165 feet) below the surface. The **second** ingredient for a tropical cyclone is wind. In the case of hurricanes that form in the Atlantic Ocean, the wind blowing westward across the Atlantic from Africa provides the necessary ingredient. As the wind passes over the ocean's surface, water **evaporates** (turns into water vapor) and rises. As it rises, the water vapor cools, and **condenses** back into large water droplets, forming large cumulonimbus clouds. This is just the beginning.

Tropical disturbance When the water vapor from the warm ocean condenses to form clouds, it releases its heat to the air. The warmed air rises and is pulled into the column of clouds. Evaporation and condensation continue, building the cloud columns higher and larger. A pattern develops, with the wind circulating around a center (like water going down a drain). As the moving column of air encounters more clouds, it becomes a cluster of thunderstorm clouds, called a tropical disturbance.

Tropical depression As the thunderstorm grows higher and larger, the air at the top of the cloud column is cooling and becoming unstable. As the heat energy is released from the cooling water vapor, the air at the top of the clouds becomes warmer, making the air pressure higher and causing winds to move outward away from the high pressure area. This movement and warming causes pressures at the surface to drop. Then air at the surface moves toward the lower pressure area, rises, and creates more thunderstorms. Winds in the storm cloud column spin faster and faster, whipping around in a circular motion. When the winds reach between 25 and 38 mph, the storm is called a tropical depression.

Tropical storm When the wind speeds reach 39 mph, the tropical depression becomes a tropical storm. This is also when the storm gets a name. The winds blow faster and begin twisting and turning around the eye (the calm center) of the storm. Wind direction is counterclockwise (west to east) in the northern hemisphere and clockwise (east to west) in the southern hemisphere. This phenomenon is known as the Coriolis effect.

Hurricane When the wind speeds reach 74 mph, the storm is officially a hurricane. The storm is at least 50,000 feet high and around 125 miles across. The eye is around 5 to 30 miles wide. The trade winds (which blow from east to west) push the hurricane toward the west—toward the Caribbean, the Gulf of Mexico, or the southeastern coast of the U.S. The winds and the low air pressure also cause a huge mound of ocean water to pile up near the eye of the hurricane, which can cause monster storm surges when all this water reaches land. Hurricanes usually weaken when they hit land, because they are no longer being fed by the energy from the warm ocean waters. However, they often move far inland, dumping many inches of rain and causing lots of wind damage before they die out completely.

Hurricane categories:

Category	Wind Speed (mph)	Damage at Landfall
1	74-95	Minimal
2	96-110	Moderate
3	111-129	Extensive
4	130-156	Extreme
5	157 or higher	Catastrophic

Dorian ←

Posted by Wikipedia.org online: “Hurricane Dorian was the most powerful tropical cyclone on record to strike the Bahamas, and is regarded as the worst natural disaster in the country’s history... Dorian struck the Abaco Islands on September 1 with maximum sustained winds of 185 mph (295 km/h), tying with the Labor Day hurricane of 1935 for the highest winds of an Atlantic hurricane ever recorded at landfall. Dorian went on to strike Grand Bahama at similar intensity... The resultant damage to these islands was catastrophic; most structures were destroyed or swept out to sea, and at least 70,000 were left homeless.”

As Life Builder Boys and Men we have a very important mission to assist our country folk to manage under these extreme conditions, to not loose hope for future recovery, and to (very importantly) not try to question our faith in a time of great testing. Your sharing of yourself in every way possible, going the “second mile”, will reap one day blessings on earth as well as in heaven. You are commended for being an important part of this great SERVICE!