Hurricanes Essay, Research Paper

HURRICANES

Of all of nature?s forces that exist hurricanes could be considered one of the most powerful of all these forces that can cause tremendous amounts of destruction is such a little amount of time. A hurricane is a powerful whirling storm of winds that measure 200-300 miles in diameter. Hurricanes are an area of low pressure that forms over the oceans in tropical regions in either the north Atlantic Ocean or eastern north Pacific Ocean. In the west Pacific Ocean hurricanes are called typhoons, and in the Indian Ocean they are called Cyclones. Hurricanes develop from easterly waves that over the oceans warm waters. These easterly waves are long narrow regions of low pressure that occur in ocean winds called trade winds. The waves may grow into a tropical depression, which are winds from 1 to 31 miles per hour. Then they can grow into a tropical storm, which are winds from 32 to 73 miles per hour. These waves then turn into what you call hurricanes and hurricanes are winds greater than 74 miles per hour. The winds swirl around a portion of the storm called the eye. This is a calm area in the center of the storm. It is about 20 miles in diameter and has little wind and clouds. The storm clouds called that are around the eye of the storm are called wall clouds. Inside these wall clouds are where most of the heaviest rains are and where the strongest winds are. Outside of the wall clouds are clouds called rain clouds. They have winds and rain and make up most of the diameter of the storm but nothing as powerful as the wall clouds. Hurricanes usually occur within the months of June to November, most occur in the month of September. Eight Hurricanes occur a year on average but as many as 15 have occurred in one years time in the Atlantic Ocean.

In the Northern Hemisphere the winds of a Hurricane move around the eye counter clockwise due the gravitational pull from the North Pole. In the Southern Hemisphere the winds move around the eye clockwise. The eye of the hurricane travels over land at an average of 10 to 15 miles per hour. The atmospheric disturbance that causes hurricanes start approximately in the latitudes between 5-30 degrees on both sides of the equator. Hurricanes start moving towards land picking speed, strength, and size. They will then drift away from the equator as they reach temperate latitude where they are called extra tropical and travel over the land bring havoc and destruction to all that they pass over. The winds and the rains over the sea along with the force of the sea produce huge waves called a storm surge. These storm surges cause lots of flooding and damage to coastlines, especially if they happen at high tide. The storm weakens as it moves over land because hurricanes need the warm sea to supply energy to it through evaporation. Also the friction of the storm over the land causes the storm to slow down.

Meteorologists of the National Weather Service keep a close watch over the Atlantic and Pacific Oceans to see of there are any storms brewing. They collect such information as air pressure, temperature, and wind speeds. By doing all this they will be able to forecast where and when a hurricane will begin, where it will travel, and how strong it is going to be. Meteorologists get information about hurricanes by satellites, airplanes and by radar.

It is shocking to see the amount of destruction from the power of a hurricane that can be caused. To put this in a better perspective: A hurricane in one day averages 1.6 X 1013 kilowatt-hour, which is 8000 times more than all the electrical power generated in the United States in one day. This is also equivalent to a daily explosion of 500000 atomic bombs, the 20-kiloton Nagasaki variety. This is absolutely amazing to think about. Many people have been trying to find ways to slow down the speeds of hurricanes for the longest time now. What is needed is a small input that can make a large amount of natural instability. The first attempt was done with 91 kilograms of crushed dry ice, and although it is not known for certain scientists think that this did effect the storm because it changed direction which was not anticipated. The Environmental Science Services Administration and the US Navy conducted the second attempt. They dropped heavy doses of silver iodide by planes into the wall clouds of the storm. It was reported that after the first day of this experiment the winds decreased by 31% and by 15% on the second day.

There is a scale in which hurricanes are rated on and that is the Saffir Simpson Scale. It looks like this:

Category Wind Speed Severity Storm Surge

1 74mph-95mph weak 4-5 ft.

2 96mph-110 mph moderate 6-8 ft.

3 111mph-130mph strong 9-12 ft.

4 131mph-155mph very strong 13-18 ft.

5 \* 155 mph devastating \* 18 ft.

There have been many hurricanes in the past but some of the most remembered ones are Hurricane Gilbert in 1988. This was the most powerful hurricane ever recorded in the Western Hemisphere. In 1989 there was Hurricane Hugo. In 1992 there was Hurricane Andrew that hit the Florida region causing $22 billion in damage. And then most recently, Hurricane Bonnie that hit in the Carolinas, causing tremendous damage and devastation.

Hurricanes are an act of nature and although they are attempted to be controlled, they can?t really ever be changed. This is why nature is so amazing, making hurricanes, one of nature?s most powerful weapons, even more amazing.