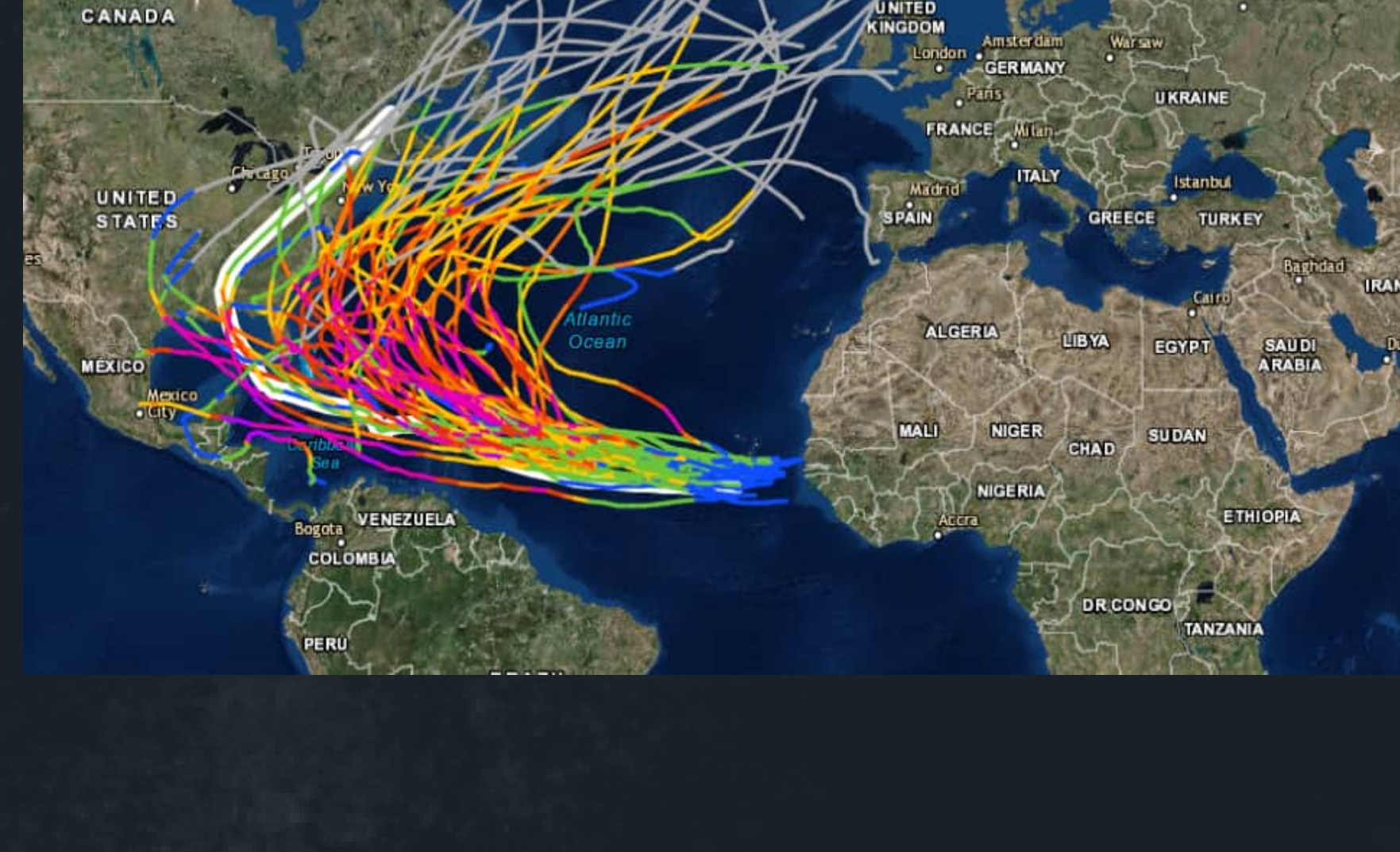


The Eye of the Storm

Tropical Cyclones and their impact on the U.S.

What are Tropical Cyclones?

Tropical Cyclones, one kind to be known as Hurricanes, are tropical disturbances that "develop from minor low-pressure disturbances in the trade winds (such as easterly waves). (Hess, 188)" They occur when the air is warm and moist, and are generated from energy in the air.



Are there different kinds of Tropical Cyclones?

Yes, there are three different kinds of Tropical Cyclones.

Tropical Depression



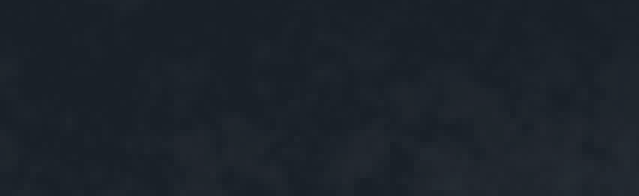
Wind speeds up to 62 km/h, formed a closed wind circulation pattern

Tropical Storm



Winds between 63 to 118 km/h

Hurricanes



Winds that reach/exceed 119 km/h

But the cyclone people are most familiar with is the Hurricane.

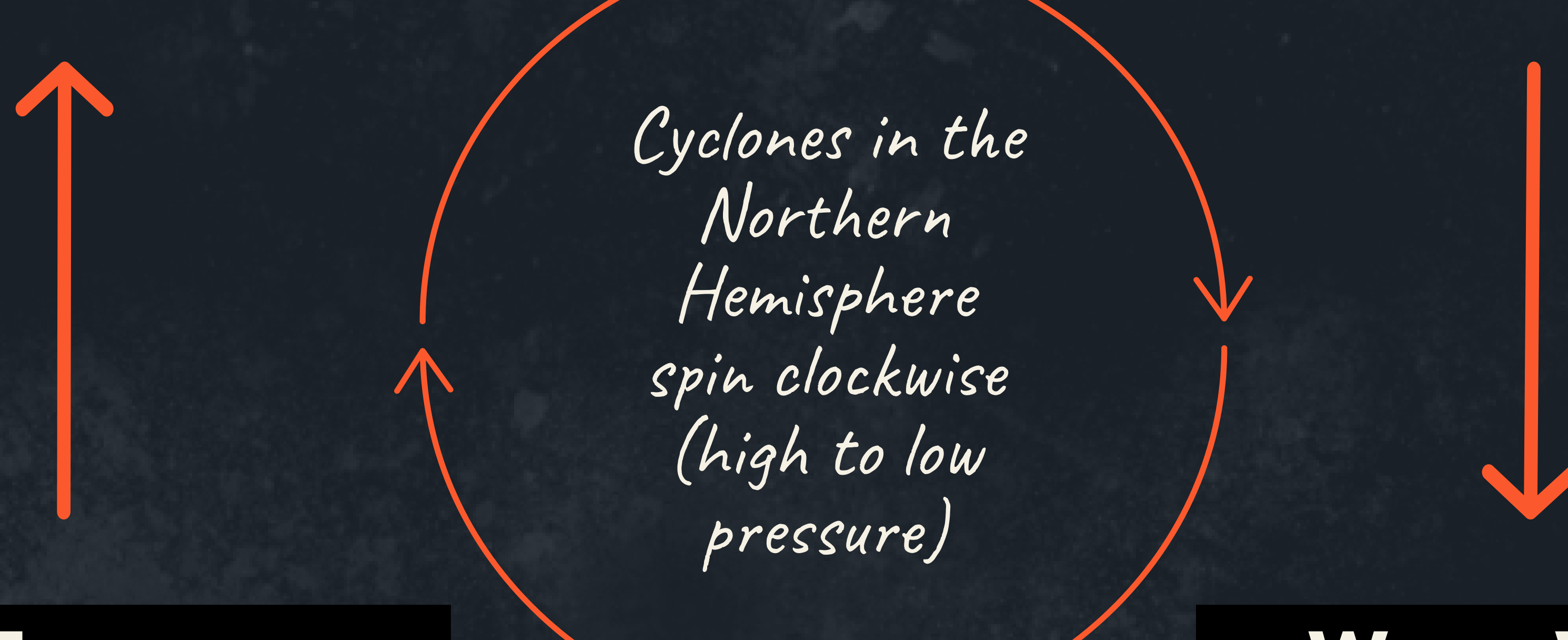
The Creation

1 Pressure

The atmosphere is a high to low pressure system, meaning that areas with high energy move to lower energy areas to reach equilibrium. This creates wind while also moving currents in the ocean.

2 Relative Humidity

Hurricanes are fueled by energy, making them thrive in warm, wet environments. The humidity in the air of a tropical place creates the perfect setting for a storm.



4 Energy

Adiabatic cooling* makes the water in the air condense, releasing latent heat energy into the air. Then the air spirals horizontally and upward rapidly, forming a cumulus and cumulonimbus clouds. The accumulation of all these processes, including increased wind speed, will lead to the formulation of a Hurricane

3 Warm Water

Due to the currents, the East Coast of the United States gets their water from the Equator, making them more prone to Hurricanes compared to the West Coast. For example, Florida has a higher relative humidity, plus warm water; Oregon has a high relative humidity, but cold water.

**Adiabatic cooling: the process of reducing heat due to a change in air pressure caused by an expansion of volume*



As shown by this image, the East Coast has experienced a significantly more amount of Tropical Storms compared to the West Coast. This image depicts the total amount of Tropical Storms that have passed the area until September of 2018.

After Hurricanes are formed, they can be categorized.

The Saffir-Simpson Hurricane Wind Scale

It is a 1-5 rating system based on wind speed and potential property damage to categorize how dangerous a hurricane is.

"Hurricanes reaching Category 3 and higher are considered major hurricanes because of their potential for significant loss of life and damage. (NOAA)"

1



Speeds: 119-153 km/h
Produces some damage to roofs, trees, and power lines could result in power outages lasting several days

2



Speeds: 154-177 km/h
Houses are potential to major roof/sliding damage, trees could be uprooted, and power outages could last several days to even weeks

3



Speeds: 178-208 km/h
Houses could endure damage or removal of roof decking and gable ends, trees uprooted and blocking roads, electricity and water could not be available for several days/weeks until the storm passes

Major

4



Speeds: 209-251 km/h
Could lose the roof and/or exterior walls, trees will be uprooted, power lines will be down, this could isolate residential areas, power outages could last from weeks to months, making the area uninhabitable for weeks/months

Major

5

Major

Speeds: 252 km/h or higher

A lot of framed homes will be destroyed, total roof failure and walls knocked down, debris will isolate residential areas, area uninhabitable for weeks/months

Are you prepared?

"Turn Around, Don't Drown! Do not walk, swim, or drive through flood waters. (Ready.gov)"

Emergency Kit Essentials:

✓ **Food (three day's worth)**

✓ **Water (three day's worth)**

✓ **Medications**

✓ **A Flashlight**

✓ **Batteries**

✓ **First Aid Supplies**

⊗ Make sure your phone is charged before the storm hits. Plan ways of communication with friends and family, especially if phone lines go down.

⊗ During high winds, go to a storm shelter, FEMA approved room, or to a windowless hallway on the lowest floor that will not be subject to flooding

⊗ If trapped in a building during flooding, go to the highest level of the building (not the attic in case you get trapped by flood waters)

⊗ Do not touch electrical equipment that is near water or if you are standing in water to not electrocute yourself

⊗ Avoid wading in flood water due to debris and potential exposure to electrically charged water

⊗ Listen to TV/Radio for updates

Works Cited

Hess, Darrel, et al. *McKnight's Physical Geography a Landscape Appreciation*. Pearson, 2017.

"Saffir-Simpson Hurricane Wind Scale." *Hurricane Preparedness - Hazards*, National Oceanic and Atmospheric Administration, www.nhc.noaa.gov/aboutsshws.php.

"Hurricanes." *Citizen Corps | Ready.gov*, Ready.gov, www.ready.gov/hurricanes.