

Natural Hazards

Tropical Storms

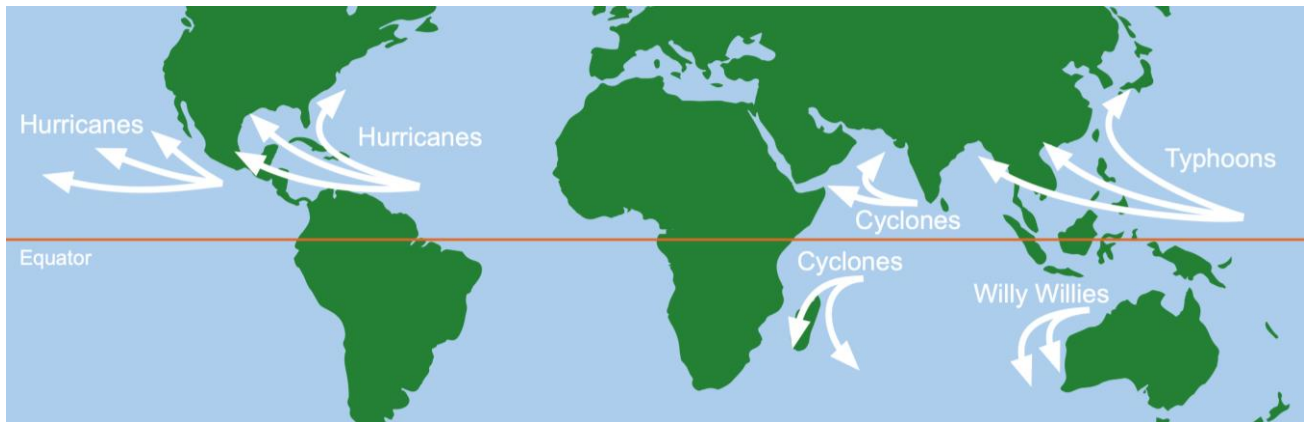


The Big Picture

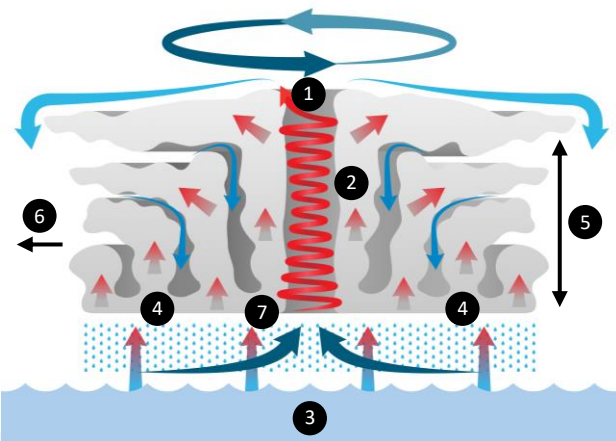


Location

Tropical storms occur between 5 and 30 degrees north and south of the Equator. Areas of intense low-pressure allows warm, moist air to rise rapidly.



Structure and features



- | | |
|----------------------------------|---|
| 1. Eye | 6. Direction of movement |
| 2. Eye wall | 7. Torrential rain, very strong winds and thunder and lightening. |
| 3. Water => 27°C | |
| 4. Rain bands | |
| 5. Height can be more than 13 km | |



Key Terms



Coriolis effect – The spinning movement of the Earth.



Eye – mostly calm weather found at the centre of a tropical storm.



Low-pressure – Occurs when air is rising in the atmosphere.



Tropical storm – An intense low-pressure system, forming over tropical oceans and with winds of hurricane force.



Formation

1. Tropical Storms start between 5° and 30° north and south of the equator where surface sea temps reach at least 27°C.
2. Warm air rises rapidly under low-pressure conditions as it is heated.
3. The rising air draws up more airing large volumes of moisture from the ocean, causing strong winds.
4. The Coriolis effect causes the air to spin upwards around a calm central eye of the storm.
5. Rising air cools and condenses to form large, cumulonimbus clouds which generate torrential rainfall.
6. Cool air sinks into the eye, therefore, there is no cloud so it is drier, clear and much calmer.
7. The tropical storm travels across the ocean by the prevailing wind.

Natural Hazards

Planning for Tropical Storms



The Big Picture



Key Terms



Monitoring – Recording physical changes, such as earthquake tremors.



Planning – Actions taken to enable communities to respond to hazards.



Prediction – Attempts to forecast when and where a hazard will strike.



Protection – Actions taken to reduce a hazard impact before it strikes.



Monitoring

Tropical Storms

- Satellite and radar technology are used to track the development and approach of a tropical storm.
- The Global Precipitation Measurement satellite monitors high-altitude rainclouds every three hours, which indicate whether a tropical storm will intensify within 24 hours.
- The National Aeronautics and Space Administration (NASA) monitors weather patterns across the Atlantic using manned and unmanned aircraft.



Prediction

Tropical Storms

- Supercomputers give five days' warning and predict the location within 400 kilometres.
- Track forecast cones plot the tropical storm's predicted path. Typically, 70 per cent occur within the code.
- Early warnings are issued by national hurricane centres around the world.



Protection

Tropical Storms

- Buildings can be reinforced to protect them from strong winds.
- Coastal flood defences can be constructed to protect areas from storm surges.
- No build zones can be constructed in in low-lying areas.



Planning

Tropical Storms

- People who live in areas prone to tropical storms can make plans and prepare what they require to deal with the effects of a tropical storm. They can prepare disaster supply kits, ensure vehicles are fully fuelled, have a clear evacuation plan and know where evacuation centres are located.

