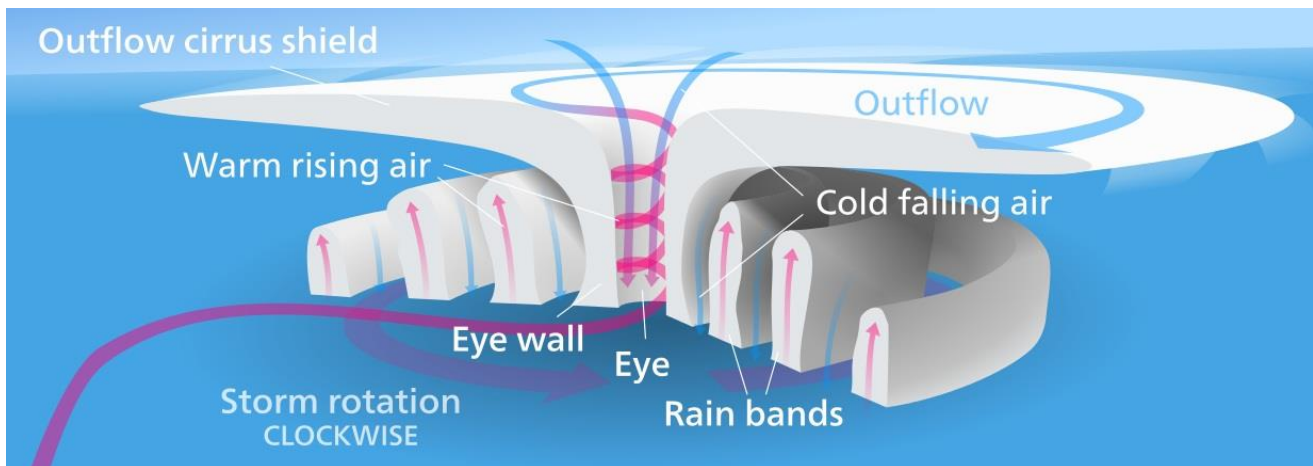


UPSC Civil Services Examination

UPSC Notes [GS-I]

Topic: Tropical Cyclones [Geography Notes for UPSC]

Tropical Cyclones



- Tropical cyclones are regarded as one of the most devastating natural calamities in the world.
- They originate and intensify over warm tropical oceans.
- These are ferocious storms that originate over oceans in tropical areas and move over to the coastal areas causing violent winds, very heavy rainfall, and storm outpourings.

Names of cyclone in different regions

- They are known as:
 - Cyclones in the Indian Ocean
 - Hurricanes in the Atlantic
 - Typhoons in the Western Pacific and the South China Sea
 - Willy-willies in Western Australia

Conditions for the formation of Tropical Cyclone

- The conditions which favour the formation and intensification of tropical cyclone storms are:
 - Large sea surface with a temperature higher than 27° C
 - Presence of the Coriolis force
 - Small differences in the vertical wind speed

- A pre-existing weak- low-pressure area or low-level-cyclonic circulation
- Upper divergence above the sea level system

Formation of Cyclone

- The energy that strengthens the storm comes from the condensation process in the towering cumulonimbus clouds, surrounding the centre of the storm.
- With an uninterrupted supply of moisture from the sea, the storm is again strengthened.
- On reaching the terrestrial region the moisture supply is cut off and the storm dissipates.
- The place where a tropical cyclone cuts the coast is called the landfall of the cyclone.
- A landfall is frequently accompanied by sturdy winds, heavy rain and mounting sea waves that could threaten people and cause damage to properties.
- Cyclones which cross 20 degrees North latitude are more destructive.
- They cover a larger area and can originate over the land and sea whereas the tropical cyclones originate only over the seas and on reaching the land they dissipate.

Eye of Cyclone

- A mature tropical cyclone is characterised by the strong spirally circulating wind around the centre which is called the eye.
- The eye is an area with calm weather descending air.
- It is characterized by light winds and clear skies.

Eye Wall

- Around the eye is the eyewall, where there is a strong spiralling rise of air to a greater height reaching the tropopause.
- The wind reaches maximum velocity in this region and torrential rain occurs here.
- From the eyewall, rain bands may radiate and trains of cumulus and cumulonimbus clouds may drift into the outer region.