TORNADO?

DEFINITION:

A tornado is a rapidly rotating column of air that extends from a thunderstorm to the ground. It forms a funnel-shaped cloud.

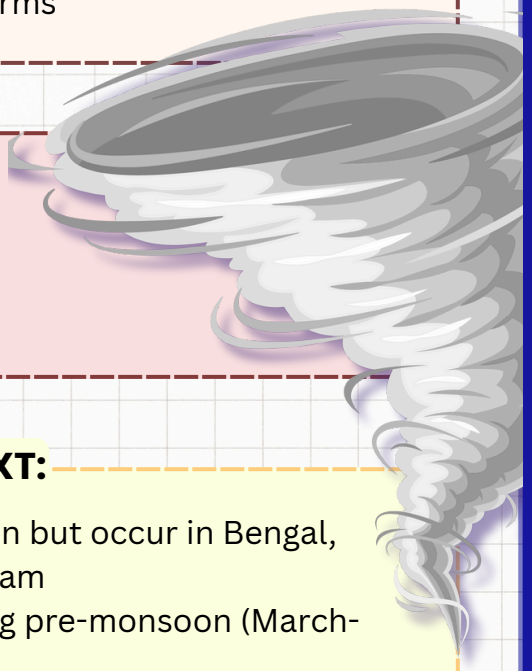
KEY FEATURES:

- **Speed:** Winds can exceed 300 km/h
- **Diameter:** 100 m to 3 km
- **Duration:** Few minutes to over an hour
- **Path Length:** A few meters to over 100 km

FORMATION CONDITIONS:

- Warm, moist air meets cold, dry air
- Instability in the atmosphere
- Strong wind shear
- Mostly associated with supercell thunderstorms

STRUCTURE:



- **Eye (Center):** Calm, low pressure
- **Vortex Wall:** Rotating winds, debris
- **Cloud Base:** Connects to cumulonimbus cloud
- **Debris cloud:** At base, formed by surface material

TORNADO ALLEY (USA):

- Central USA (Texas to South Dakota)
- Most frequent and intense tornadoes

INDIA CONTEXT:

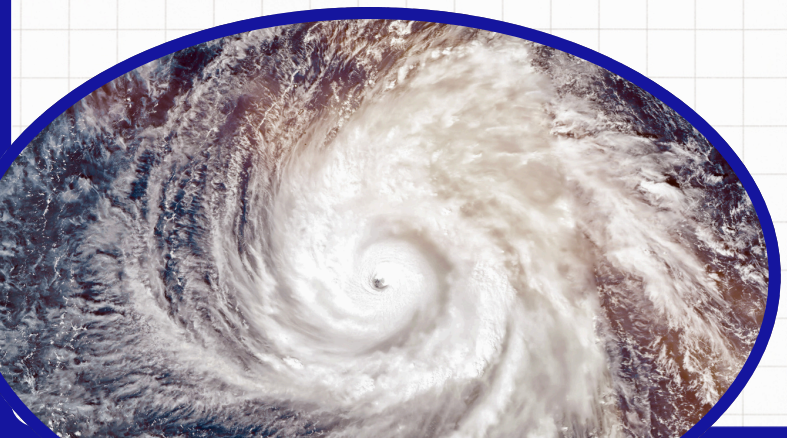
- Not common but occur in Bengal, Odisha, Assam
- Often during pre-monsoon (March-May)
- **Example:** Tornado in West Bengal, 2021

IMPACTS:

- Loss of life
- Property damage
- Disruption of communication & power
- Agricultural destruction

CLASSIFICATION (ENHANCED FUJITA SCALE):

- **EF0:** 105–137 km/h (minor)
- **EF5:** >322 km/h (massive destruction)



MITIGATION & MANAGEMENT:

- Early warning systems (Doppler radar)
- Public awareness & drills
- Storm shelters
- Inclusion in Disaster Management Plans