Cold Wave

Why in News

As per the India Meteorological Department (IMD), there are cold wave conditions over Delhi.

Key Points

- **Cold Wave**: A rapid fall in temperature within 24 hours to a level requiring substantially increased protection to agriculture, industry, commerce, and social activities.
- **Cold Wave Conditions**:
  - For the plains, a cold wave is declared when the minimum temperature is 10 degrees Celsius or below and is 4.5 degrees Celsius (C) less than normal for two consecutive days.
  - For coastal stations, the threshold value of minimum temperature of 10 degree Celsius is rarely reached. However, the local people feel discomfort due to the wind chill factor which reduces the minimum temperature by a few degrees depending upon the wind speed.
  - A wind chill factor is a measure of the cooling effect of the wind on the temperature of the air.

- **India’s Core Cold Wave Zone**: India’s ‘core cold wave zone’ covers Punjab, Himachal Pradesh, Uttarakhand, Delhi, Haryana, Rajasthan, Uttar Pradesh, Gujarat, Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, West Bengal, Odisha and Telangana.
  - In 2019, Delhi and adjoining areas in the north had experienced its coldest winter of the century.

- **Cold Wave Situation in Delhi**:
  - On 3rd November 2020, Delhi recorded a minimum temperature of 10 degree Celsius which was 5 degrees C below normal.
  - IMD may consider declaring a cold wave if the temperature continues to stay the same for another day.

- **Reasons for the Fall in Minimum Temperature**:
  - Absence of cloud cover in the region: Clouds trap some of the outgoing infrared radiation and radiate it back downward, warming the ground.
  - Snowfall in the upper Himalayas that has blown cold winds towards the region.
  - Subsidence of cold air over the region: Subsidence is the downward movement of cold and dry air closer to the surface.
  - Prevailing weak La Nina conditions in the Pacific Ocean.

- La Nina is the abnormal cooler sea surface temperatures reported along the equatorial Pacific Ocean and it is known to favour cold waves.
- During La Nina years, the severity of cold conditions becomes intense. The frequency and area covered under the grip of a cold wave becomes larger.
- Winters 2020: November is expected to be colder than usual after the mean minimum
temperature in October 2020 was 17.2 degrees Celsius, the lowest since 1962, when it was 16.9 degrees Celsius.

**India Meteorological Department**

- IMD was established in **1875**.
- It is an agency of the Ministry of Earth Sciences of the Government of India.
- It is the principal agency responsible for meteorological observations, weather forecasting and seismology.

*Source: TH*

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