



Cold Wave

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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