



Government of India  
Ministry of Earth Sciences  
India Meteorological Department



Press Release

Date: 18<sup>th</sup> January, 2024

Time of Issue: 1230 hours IST

**Subject:**

- (i) Dense to very dense fog and Cold day to severe cold day conditions likely to continue to prevail over North India during next 2 days and decrease in intensity thereafter.**
- (ii) Cold wave to severe cold wave conditions likely to continue over plains of Northwest India during next 2 days.**

**Realized weather during past 24 hours till 0830 hours IST of today: (Details given in Annexure I)**

- ❖ **Minimum temperatures:** Minimum temperatures are in the range of 3-6°C over many parts of Punjab and some parts of Haryana-Chandigarh; in the range of 7-10°C over most parts of Delhi, Uttar Pradesh, Rajasthan, north Madhya Pradesh and Bihar. These are below normal by 1°C to 3°C over many parts of Punjab, Haryana-Chandigarh-Delhi and West Uttar Pradesh and in isolated pockets of Rajasthan. **Today, the lowest minimum temperature of 3.1°C reported at Ludhiana (Punjab).**
- ❖ Today, **Cold wave conditions** prevailed over some parts of Punjab and in isolated pockets of Haryana & Himachal Pradesh.
- ❖ **Fog conditions observed** (at 0530 & 0830 hours IST of today): **Dense to very Dense Fog** reported over most parts of Punjab; in many parts of Uttarakhand; in some parts of Haryana, Chandigarh, Rajasthan, Bihar; in isolated pockets of Uttar Pradesh, Jharkhand, Odisha; **Dense Fog** in isolated pockets of north Madhya Pradesh, Assam & Meghalaya and Tripura.
- ❖ Yesterday, **Cold day to Severe Cold day conditions** prevailed in many parts of Uttar Pradesh; in some parts of Bihar, West Rajasthan; in isolated pockets of Punjab, Haryana, north Madhya Pradesh, Uttarakhand, East Rajasthan; **Cold day conditions** in some parts of Sub-Himalayan West Bengal & Sikkim.

**Weather Systems and Forecast & Warnings during next 5 days:**

- ❖ **Jet Stream Winds of the order of 140-160 knots at 12.6 km above mean sea level are prevailing over the plains of North India. It is leading to subsidence of cold air and enhancing cold wave/cold day conditions over North India. Similar intensity of Jet Stream is likely to continue during next 3-4 days.**
- ❖ Light to moderate rainfall in isolated to some places very likely over Bihar, Jharkhand, Chhattisgarh, Odisha, West Bengal & Sikkim and Northeast India on 18<sup>th</sup> January, 2024.
- ❖ **Isolated Hailstorm** also likely over Sikkim on 18<sup>th</sup> January, 2024.

**Dense fog and Cold day warning: (graphics in Annexure II)**

- ❖ **Dense to very dense fog** conditions very likely to prevail for a few hours in night/morning over some parts of Punjab, Haryana and Chandigarh during 18<sup>th</sup> night to 20<sup>th</sup> morning and dense fog in isolated pockets during 21<sup>st</sup>-23<sup>rd</sup> January morning.

- ❖ **Dense to very dense fog** conditions very likely to prevail for a few hours in night/morning in some parts of West Uttar Pradesh during 18<sup>th</sup> late night to 23<sup>rd</sup> January morning.
- ❖ **Dense to very dense fog** conditions very likely to prevail in morning hours in isolated pockets over Uttarakhand and north Rajasthan 18<sup>th</sup> & 19<sup>th</sup> January and dense fog in isolated pockets of north Rajasthan on 20<sup>th</sup> January, 2024.
- ❖ **Dense fog** conditions very likely to prevail in morning hours in isolated pockets of East Uttar Pradesh during 18<sup>th</sup>-22<sup>nd</sup>; over Odisha, Jharkhand, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during 18<sup>th</sup>-20<sup>th</sup>; over Himachal Pradesh and north Madhya Pradesh on 18<sup>th</sup> & 19<sup>th</sup> January, 2024.
- ❖ **Cold Day to Severe Cold Day** conditions very likely to continue in some parts of Punjab, Haryana-Chandigarh on 18<sup>th</sup> & 19<sup>th</sup> and **Cold Day** in isolated pockets on 20<sup>th</sup> & 21<sup>st</sup> January, 2024.
- ❖ **Cold Day to Severe Cold Day** conditions very likely to continue in some parts of East Uttar Pradesh on 18<sup>th</sup> and **Cold Day** in isolated pockets on 19<sup>th</sup> January, 2024.
- ❖ **Cold Day to Severe Cold Day** conditions very likely to continue in some parts of Bihar and West Uttar Pradesh during 18<sup>th</sup>-22<sup>nd</sup> January and over West Rajasthan on 18<sup>th</sup> & 19<sup>th</sup> January, 2024.
- ❖ **Cold Day** conditions very likely to continue in some parts of Sub-Himalayan West Bengal & Sikkim during 18<sup>th</sup>-20<sup>th</sup> and in isolated pockets of East Rajasthan and north Madhya Pradesh on 18<sup>th</sup> & 19<sup>th</sup> January, 2024.

### **Minimum Temperature Forecast and Cold wave warning: (graphics in Annexure II)**

- ❖ No significant change in minimum temperatures very likely over Northwest India during next 2 days and rise by about 2°C thereafter.
- ❖ No significant change in minimum temperatures very likely over East India during next 2 days and fall by 2-3°C thereafter.
- ❖ No significant change in minimum temperatures likely over rest parts of the country during next 5 days.
- ❖ **Cold wave to Severe Cold wave** conditions very likely to continue in some parts of Punjab and Haryana on 18<sup>th</sup> & 19<sup>th</sup> and cold wave conditions on 20<sup>th</sup> & 21<sup>st</sup> January, 2024.
- ❖ **Cold wave** conditions very likely in isolated pockets of Himachal Pradesh on 18<sup>th</sup> & 19<sup>th</sup> and over north Rajasthan during 20<sup>th</sup> & 21<sup>st</sup> January, 2024.

For more details kindly refer: [https://mausam.imd.gov.in/responsive/all\\_india\\_forecast\\_bulletin.php](https://mausam.imd.gov.in/responsive/all_india_forecast_bulletin.php)

**Realized weather during past 24 hours till 0830 hours IST of today:**

- ❖ Yesterday, **Maximum temperatures** were in the range of 6-8°C over some parts of south Punjab and west Rajasthan; 10-15°C over most parts of Uttar Pradesh, Bihar; 15-18°C over many parts of north Punjab, Haryana-Chandigarh-Delhi and which were below normal by 7-10°C at many parts over Uttar Pradesh, Bihar, Gangetic West Bengal and by 3-6°C at many parts over Uttarakhand, north Rajasthan, Jharkhand and Haryana.
- ❖ **Visibility recorded (at 0530 hours IST of today) ( $\leq 200$  metres):** **Punjab:** Amritsar & Patiala-25 each; **Haryana:** Ambala & Hissar-25 each; **Delhi:** Palam & Safdarjung-50 each; **West Rajasthan:** Bikaner-25, Churu & Ganganagar-50 each; **East Rajasthan:** Jaipur-500; **West Uttar Pradesh:** Jhansi-50, Bareilly-200; **East Uttar Pradesh:** Gorakhpur-500; **West Madhya Pradesh:** Gwalior-500; **Bihar:** Purnea-25, Gaya & Bhagalpur- 500 each; **Jharkhand:** Ranchi-50, Jamshedpur-500; **Odisha:** Chandbali & Paradip-50 each, Bhubaneshwar-200, Jharsuguda-500; **Sub-Himalayan West Bengal:** Malda- 200; **Assam:** North Lakhimpur- 50, Tezpur-200.
- ❖ **Visibility recorded (at 0830 hours IST of today) ( $\leq 200$  metres):** **Punjab:** Amritsar-00, Patiala, Ludhiana-25 each; **Haryana:** Hissar-25; **Rajasthan:** Bikaner-25, Ganganagar, Churu, Jaipur-50 each; **Jharkhand:** Ranchi-25, Daltonganj-200; **Delhi:** Ayanagar, Ridge-50 each; **West Bengal & Sikkim:** Cooch Behar-50, Tadong-200, Malda-200; **Assam:** North Lakhimpur-50; **Madhya Pradesh:** Rewa-50, Damoh-200, **Meghalaya:** Shillong-100; **Uttar Pradesh:** Meerut, Jhansi-200 each; **Bihar:** Purnea-200 each.
- ❖ **Isolated hailstorm** observed over Sikkim.
- ❖ **Ground frost conditions** observed at isolated places over Uttarakhand (Mukteshwar & Tehri).

**Impact expected due to dense to very dense fog in the night/morning hours over West Uttar Pradesh and Bihar during 18<sup>th</sup>-22<sup>nd</sup> and Uttarakhand, Punjab, Haryana-Chandigarh-Delhi on 18<sup>th</sup> & 19<sup>th</sup> January, 2024.**

❖ **Transport and Aviation:**

- ❖ May affect some airports, highways and railway routes in the areas of met- sub-division.
- ❖ Difficult driving conditions with slower journey times.
- ❖ Unless taken precautionary measures, it may lead to some road traffic collisions.

❖ **Power Sector:**

- ❖ Chances of Tripping of Power lines in the very dense fog routes.

❖ **Human Health:**

- ❖ Lung related health impacts: Dense fog contains particulate matter and other pollutants and in case exposed it gets lodged in the lungs, clogging them and decreasing their functional capacity which increases episodes of wheezing, coughing and shortness of breath.
- ❖ Impact on people having asthma bronchitis: Long time exposure to dense fog may cause respiratory problem for people having asthma bronchitis and other lung related health problems.
- ❖ Eye Irritation: Dense fog contains pollutions of various types and these Pollutants in the air if exposed may tend to irritate the membranes of the eye causing various infections leading to redness or swelling of the eye.

**Action suggested:**

❖ **Transport and Aviation:**

- ❖ Be careful while driving or outing through any transport.
- ❖ Use fog lights during driving.
- ❖ Be in touch with airlines, railways and state transport for schedule of your journey.

❖ **Power Sector:**

- ❖ To keep ready Maintenance Team
- ❖ Human Health: To avoid outing until unless emergency and to cover the face.

**Impact expected due to Cold Day/Severe Cold Day conditions and Cold Wave/Severe Cold Wave conditions over Punjab and Haryana during 18<sup>th</sup>-20<sup>th</sup> and West Uttar Pradesh & Bihar during 18<sup>th</sup>-22<sup>nd</sup> January, 2024.**

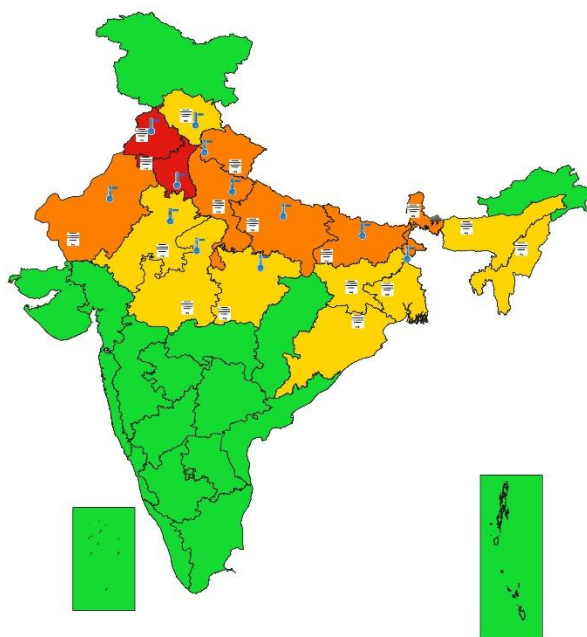
- ❖ An increased likelihood of various illnesses like flu, running/ stuffy nose or nosebleed, which usually set in or get aggravated due to prolonged exposure to cold.
- ❖ Do not ignore shivering. It is the first sign that the body is losing heat. Get Indoors.
- ❖ Frostbite can occur due to prolonged exposure to cold. The skin turns pale, hard and numb and eventually black blisters appear on exposed body parts such as fingers, toes, nose and or earlobes. Severe frostbite needs immediate medical attention and treatment.
- ❖ Impact on agriculture, crop, livestock, water supply, transport and power sector at some places.

**Action suggested:**

- ❖ Wear several layers of loose fitting, light weight; warm woolen clothing.
- ❖ Cover your head, neck, hands and toes adequately as majority of heat loss occurs through these body parts. Wear several layers of loose fitting, light weight; warm woolen clothing rather than one layer of heavy cloth.
- ❖ Eat vitamin-C rich fruits & vegetable and drink sufficient fluids preferably warm fluids to maintain adequate immunity.
- ❖ Avoid or limit outdoor activities.
- ❖ Keep dry, if wet, change cloths immediately to prevent loss of body heat. Wear insulated/waterproof shoes.
- ❖ Warm the affected area of the body slowly with lukewarm water; do not rub the skin vigorously.
- ❖ If the affected skin area turns black, immediately consult a doctor.
- ❖ Maintain ventilation while using Heaters to avoid inhaling toxic fumes.
- ❖ Take safety measures while using electrical and gas heating devices.
- ❖ Extreme care needed for vulnerable people.
- ❖ Seek medical attention as soon as possible for someone suffering from frostbite/ Hypothermia.
- ❖ Protect livestock from cold weather.



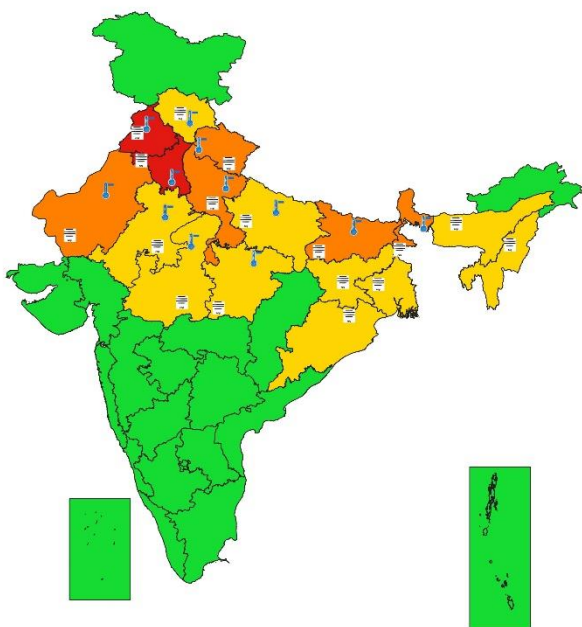
SUBDIVISIONWISE WEATHER WARNING FOR DAY 1  
18-01-2024



- |                            |                      |                          |
|----------------------------|----------------------|--------------------------|
| <b>Subdivision Warning</b> | Dust Storm           | <b>Subdivision color</b> |
| Heavy Rain                 | Strong Surface Winds | NO WARNING               |
| Heavy Snow                 | Heat Wave            | WATCH (BE UPDATED)       |
| Thunderstorms & Lightning  | Cold wave            | ALERT (BE PREPARED)      |
| Hailstorm                  | Fog                  | WARNING (TAKE ACTION)    |



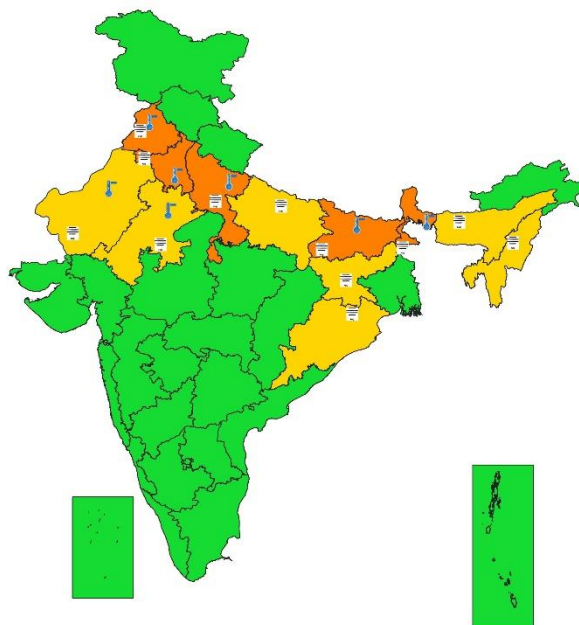
SUBDIVISIONWISE WEATHER WARNING FOR DAY 2  
19-01-2024



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|----------------------------|----------------------|--------------------------|
| <b>Subdivision Warning</b> | Dust Storm           | <b>Subdivision color</b> |
| Heavy Rain                 | Strong Surface Winds | NO WARNING               |
| Heavy Snow                 | Heat Wave            | WATCH (BE UPDATED)       |
| Thunderstorms & Lightning  | Cold wave            | ALERT (BE PREPARED)      |
| Hailstorm                  | Fog                  | WARNING (TAKE ACTION)    |



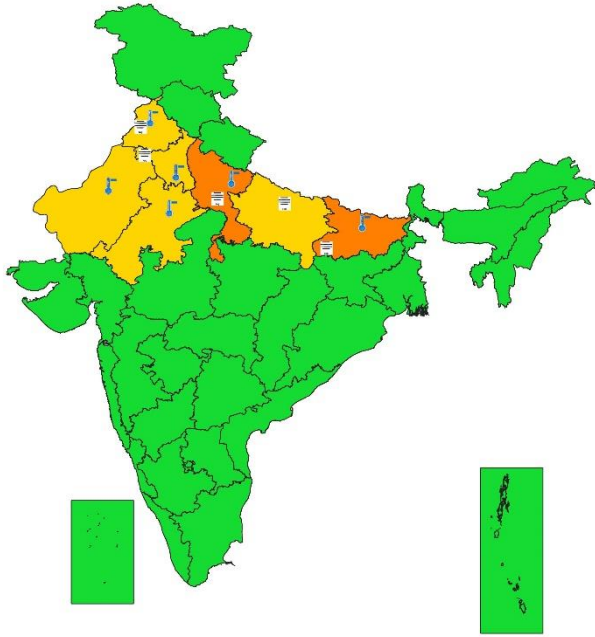
SUBDIVISIONWISE WEATHER WARNING FOR DAY 3  
20-01-2024



- |                            |                      |                          |
|----------------------------|----------------------|--------------------------|
| <b>Subdivision Warning</b> | Dust Storm           | <b>Subdivision color</b> |
| Heavy Rain                 | Strong Surface Winds | NO WARNING               |
| Heavy Snow                 | Heat Wave            | WATCH (BE UPDATED)       |
| Thunderstorms & Lightning  | Cold wave            | ALERT (BE PREPARED)      |
| Hailstorm                  | Fog                  | WARNING (TAKE ACTION)    |



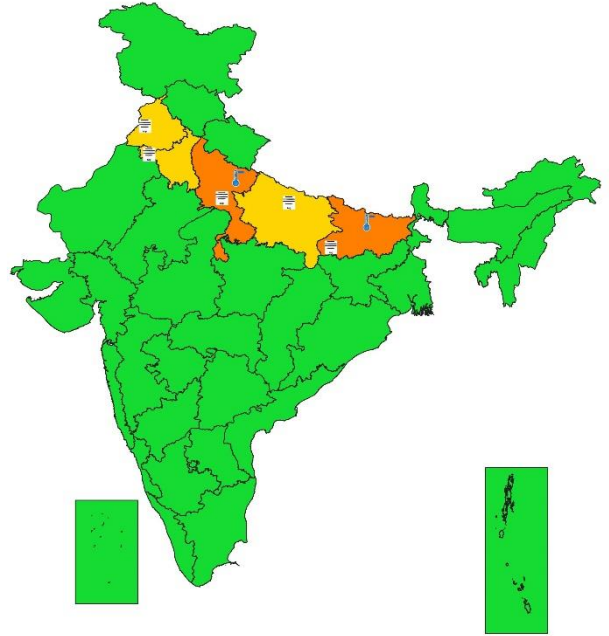
**SUBDIVISIONWISE WEATHER WARNING FOR DAY 4**  
21-01-2024



- |                            |                      |                          |
|----------------------------|----------------------|--------------------------|
| <b>Subdivision Warning</b> | Dust Storm           | <b>Subdivision color</b> |
| Heavy Rain                 | Strong Surface Winds | NO WARNING               |
| Heavy Snow                 | Heat Wave            | WATCH (BE UPDATED)       |
| Thunderstorms & Lightning  | Cold wave            | ALERT (BE PREPARED)      |
| Hailstorm                  | Fog                  | WARNING (TAKE ACTION)    |



**SUBDIVISIONWISE WEATHER WARNING FOR DAY-5**  
22-01-2024



















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|----------------------------|----------------------|--------------------------|
| <b>Subdivision Warning</b> | Dust Storm           | <b>Subdivision color</b> |
| Heavy Rain                 | Strong Surface Winds | NO WARNING               |
| Heavy Snow                 | Heat Wave            | WATCH (BE UPDATED)       |
| Thunderstorms & Lightning  | Cold wave            | ALERT (BE PREPARED)      |
| Hailstorm                  | Fog                  | WARNING (TAKE ACTION)    |

## Legends:




- ❖ **Heavy Rain:** 64.5 to 115.5 mm; **Very Heavy Rain:** 115.6 to 204.4 mm; **Extremely Heavy Rain:** >204.4mm.
- ❖ **Obsy:** Observatory; **AWS:** Automatic Weather Station; **dist:** District; **NH:** National Highway; **KVK:** Krishi Vigyan Kendra; **DVC:** Damodar Valley Corporation
- ❖ **Region wise classification of meteorological Sub-Divisions:**
  - **Northwest India:** Western Himalayan Region (Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand); Punjab, Haryana-Chandigarh-Delhi; West Uttar Pradesh, East Uttar Pradesh, West Rajasthan and East Rajasthan.
  - **Central India:** West Madhya Pradesh, East Madhya Pradesh, Vidarbha and Chhattisgarh.
  - **East India:** Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim; Gangetic West Bengal, Odisha and Andaman & Nicobar Islands.
  - **Northeast India:** Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
  - **West India:** Gujarat Region, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra and Marathwada.
  - **South India:** Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, Coastal Karnataka, North Interior Karnataka, South Interior Karnataka, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal and Lakshadweep.

<b>SPATIAL DISTRIBUTION</b> (% of Stations reporting)			
% Stations	Category	% Stations	Category
76-100	Widespread (WS/ Most Places)	26-50	Scattered (SCT/ A Few Places)
51-75	Fairly Widespread (FWS/ Many Places)	1-25	Isolated (ISOL)

Subdivision Warning	 Dust Storm	Subdivision color
 Heavy Rain	 Strong Surface Winds	 NO WARNING
 Heavy Snow	 Heat Wave	 WATCH(BE UPDATED)
 Thunderstorms & Lightning	 Cold wave	 ALERT (BE PREPARED)
 Hailstorm	 Fog	 WARNING (TAKE ACTION)

<b>Probabilistic Forecast</b>		<b>Flash Flood Risk</b>	
Terms	Probability of Occurrence (%)		
Unlikely	< 25	 High Risk (Take Action)	
Likely	25 - 50	 Moderate Risk (Be Prepared)	
Very Likely	50 - 75	 Low Risk (Be Updated)	
Most Likely	> 75		

## Definition of Cold wave, Cold Day and Fog Conditions:

 <b>Cold Wave</b>	<p>When minimum temperature of a station <math>\leq 10^{\circ}\text{C}</math> for plains and <math>\leq 0^{\circ}\text{C}</math> for hilly regions.</p> <p>(a) Based on departure</p> <p>Cold Wave: Minimum Temperature Departure from normal <math>-4.5^{\circ}\text{C}</math> to <math>-6.4^{\circ}\text{C}</math>.</p> <p>Severe Cold Wave: Minimum Temperature Departure from normal <math>\leq -6.5^{\circ}\text{C}</math></p> <p>(b) Based on actual Minimum Temperature (for Plains only)</p> <p>Cold Wave: When Minimum Temperature is <math>\leq 4.0^{\circ}\text{C}</math></p> <p>Severe Cold Wave: When Minimum Temperature is <math>\leq 2.0^{\circ}\text{C}</math></p> <p>(c) For Coastal Stations</p> <p>When Minimum Temperature departure is <math>\leq -4.5^{\circ}\text{C}</math> &amp; actual Minimum Temperature is <math>\leq 15^{\circ}\text{C}</math></p>
 <b>Cold Day</b>	<p>When minimum temperature of a station <math>\leq 10^{\circ}\text{C}</math> for plains and <math>\leq 0^{\circ}\text{C}</math> for hilly regions</p> <p>Based on departure</p> <p>Cold Day: Maximum Temperature Departure from normal <math>-4.5^{\circ}\text{C}</math> to <math>-6.4^{\circ}\text{C}</math>.</p> <p>Severe Cold Day: Maximum Temperature Departure from normal <math>\leq -6.5^{\circ}\text{C}</math></p>
 <b>Fog</b>	<p>Phenomenon of small droplets suspended in air and the horizontal visibility <math>&lt; 1\text{km}</math></p> <p>Moderate Fog: When the visibility between 500-200 metres</p> <p>Dense Fog: when the visibility between 50- 200 metres</p> <p>Very Dense Fog: when the visibility <math>&lt; 50</math> metres</p>