



Government of India  
Ministry of Earth Sciences  
India Meteorological Department



Press Release

Date: 04<sup>th</sup> January, 2024

Time of Issue: 1230 hours IST

**Subject: 1) Cold Day to Severe Cold Day conditions likely to continue over some parts of Punjab, Haryana, Chandigarh, Delhi, Uttar Pradesh and Rajasthan during next 2 days and decrease thereafter.**

**2) Dense to very dense fog likely to continue over some parts of plains of Northwest & East India during next 3 days and gradually decrease thereafter.**

**3) A fresh spell of rainfall with isolated heavy rainfall is likely over extreme south Peninsular India during next 4-5 days.**

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

- **Minimum temperatures:** The Minimum temperatures are in the range of 4-8°C over most parts of Punjab, Haryana-Chandigarh, West Uttar Pradesh and north Rajasthan and in range of 9-12°C over Delhi, East Uttar Pradesh, north Madhya Pradesh, Bihar and south Rajasthan. **These are above normal by 2-4°C** over many parts of Madhya Pradesh, Maharashtra, East Uttar Pradesh, Bihar and Gujarat. **Today, the lowest minimum temperature of 1.0°C reported at Sikar (East Rajasthan).**
- **Fog: Very dense fog occurred (visibility < 50 m)** for a few hours in many parts of Bihar; in some parts of Punjab, Haryana-Chandigarh, Rajasthan, East Uttar Pradesh; in isolated pockets of West Uttar Pradesh in night/morning hours. **Dense fog (visibility 50-200 m)** for a few hours in isolated places occurred over north Madhya Pradesh, Odisha, Assam & Meghalaya, Tripura and Uttarakhand in the morning hours.
- **Visibility Recorded (at 0530 hours IST of today) (metres): Uttar Pradesh:** Bareilly, Lucknow, Bahraich-25, Prayag Raj, Varanasi-50, Gorakhpur; **Chandigarh:** Chandigarh-25; **Rajasthan:** Bikaner-25, Jaisalmer-50, Kota-50, Jaipur-50; **Bihar:** Gaya-25, Purnea-25, Patna-200; **Madhya Pradesh:** Sagar-50; **Tripura:** Agartala-50.
- **Visibility Recorded (at 0830 hours IST of today) (metres): Jammu & Kashmir:** Jammu- 25; **Punjab:** Patiala-25; Amritsar-50; **Haryana-Chandigarh:** Chandigarh & Ambala – 25 each; Karnal-50; **Delhi:** Ayanagar-50; **Uttarakhand:** Pant Nagar and Nainital – 50 each; **Uttar Pradesh:** Gorakhpur- 0; Jhansi and Bahraich-25 each; Bareilly, Lucknow and Varanasi-50 each; **Rajasthan:** Bikaner-25; Kota, Jaipur and Ajmer-50 each; **Bihar:** Purnea-25; **Madhya Pradesh:** Sagar-50; **Jharkhand:** Dalton Ganj – 200; **Tripura:** Agartala-50.
- **Cold day to severe cold day conditions** observed in some parts of Punjab, Haryana- Chandigarh and West Uttar Pradesh and Rajasthan.
- **Cold wave conditions** observed in isolated pockets of East Rajasthan.

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

**Weather Systems:**

- Yesterday's **Low Pressure Area** over Southeast Arabian Sea has become less marked. However, the associated cyclonic circulation lies over Southeast Arabian Sea & adjoining Lakshadweep area and a trough runs from the above cyclonic circulation to south Karnataka in lower tropospheric levels.
- The Western Disturbance lay as a cyclonic circulation over Haryana & neighbourhood in lower tropospheric levels; an induced cyclonic circulation lies over southwest Uttar Pradesh & neighbourhood and a trough runs from North Interior Karnataka to the cyclonic circulation over southwest Uttar Pradesh in lower levels.

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

- **Dense to very dense fog** conditions very likely to prevail for a few hours in night/morning in some parts over Punjab, Haryana-Chandigarh, Uttar Pradesh, East Rajasthan during 04<sup>th</sup> to 06<sup>th</sup> January; in isolated pockets on 07<sup>th</sup> and **Dense fog** in isolated pockets for subsequent 2 days.
- **Dense to very dense fog** conditions very likely to prevail for a few hours in morning in isolated pockets over West Rajasthan on 05<sup>th</sup> & 06<sup>th</sup> January and in isolated pockets on 07<sup>th</sup> January.
- **Dense to very dense fog** conditions very likely to prevail for a few hours in morning in isolated pockets over Bihar on 05<sup>th</sup> January and **Dense fog** in some parts on 06<sup>th</sup> & 07<sup>th</sup> January.
- **Dense fog** conditions very likely to prevail for a few hours in morning in isolated pockets over Jammu division, Himachal Pradesh, Uttarakhand, Odisha, West Bengal & Sikkim, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during 05<sup>th</sup>-07<sup>th</sup> January and over north Madhya Pradesh on 05<sup>th</sup> January.
- **Cold Day to Severe Cold Day** conditions very likely to continue in some parts over Punjab, Haryana-Chandigarh-Delhi during 04<sup>th</sup>-06<sup>th</sup> and Uttar Pradesh & Rajasthan on 04<sup>th</sup> & 05<sup>th</sup> January.

### **Temperatures Forecast and cold Wave warning:**

- Minimum Temperatures are likely to rise gradually by 2-3°C over East India during next 3 days. No significant change in minimum temperatures likely over rest parts of north India during next 5 days.
- **Cold wave** conditions very likely in isolated pockets over Punjab, Haryana and Rajasthan on 05<sup>th</sup> & 06<sup>th</sup> January.

### **Rainfall Forecast:**

- Light to moderate rainfall at some places very likely over south Tamil Nadu, south Kerala and Lakshadweep during next 4-5 days.
- Isolated **heavy rainfall** very likely over Tamil Nadu during 04<sup>th</sup>-08<sup>th</sup>; Kerala during 04<sup>th</sup>-06<sup>th</sup>; over Lakshadweep, Coastal Karnataka on 04<sup>th</sup> & 05<sup>th</sup>; over South Interior Karnataka on 04<sup>th</sup> January
- Light isolated rainfall very likely over Madhya Pradesh, Chhattisgarh, Bihar and Jharkhand during 04<sup>th</sup> - 06<sup>th</sup>; over Uttar Pradesh on 04<sup>th</sup> & 05<sup>th</sup> January.

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)

**Impact expected due to dense to very dense fog in the night/morning hours** over Punjab, Haryana, Chandigarh, Uttar Pradesh and Rajasthan during next 3 days.

❖ **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 over Punjab, Haryana & Chandigarh during next 3 days and over Uttar Pradesh & Rajasthan during next 2 days.**

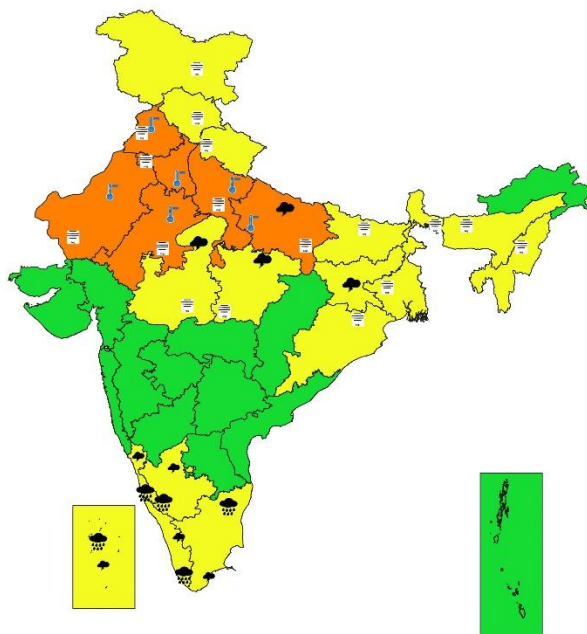
- An increased likelihood of various illnesses like flu, running/ stuffy nose or nosebleed, which usually set in or get aggravated due to prolonged exposure to cold.
- Do not ignore shivering. It is the first sign that the body is losing heat. Get Indoors.
- Frostbite can occur due to prolonged exposure 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 woollen 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 woollen 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.



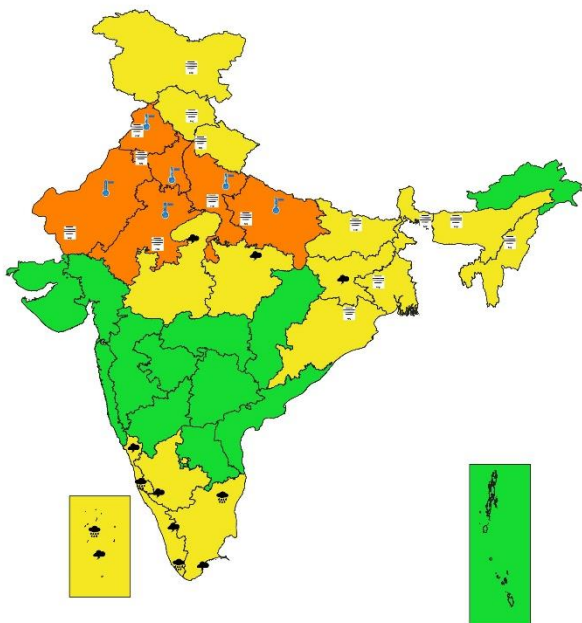
SUBDIVISIONWISE WEATHER WARNING FOR DAY 1  
04-01-2024



- |                           |                      |                       |
|---------------------------|----------------------|-----------------------|
| Subdivision Warning       | Dust Storm           | WATCH(BE UPDATED)     |
| Heavy Rain                | Strong Surface Winds | ALERT (BE PREPARED)   |
| Heavy Snow                | Heat Wave            | WARNING (TAKE ACTION) |
| Thunderstorms & Lightning | Cold wave            |                       |
| Hallstorm                 | Fog                  |                       |
|                           | Subdivision color    |                       |



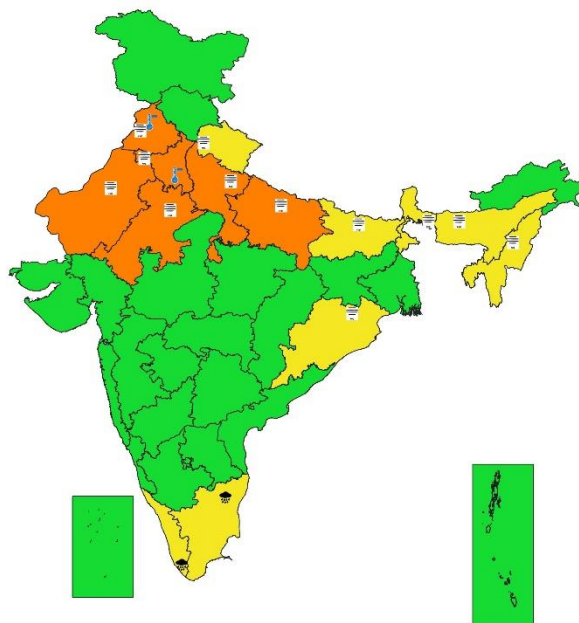
SUBDIVISIONWISE WEATHER WARNING FOR DAY 2  
05-01-2024



- |                           |                      |                       |
|---------------------------|----------------------|-----------------------|
| 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)   |
| Hallstorm                 | Fog                  | WARNING (TAKE ACTION) |



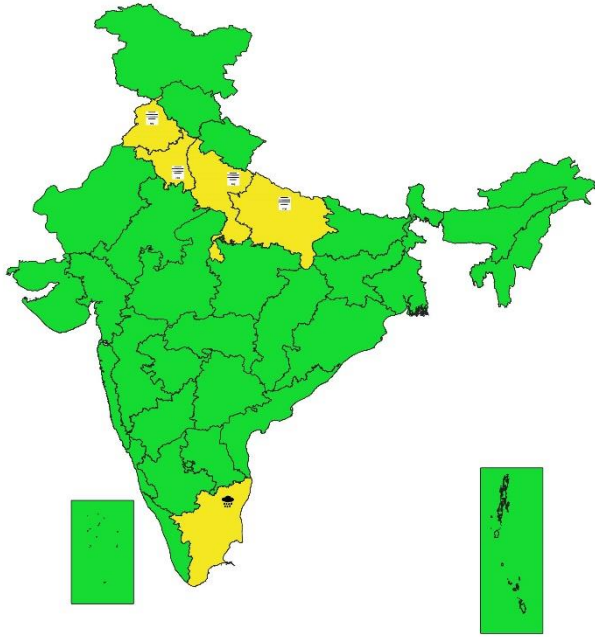
SUBDIVISIONWISE WEATHER WARNING FOR DAY 3  
06-01-2024



- |                           |                      |                       |
|---------------------------|----------------------|-----------------------|
| 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)   |
| Hallstorm                 | Fog                  | WARNING (TAKE ACTION) |



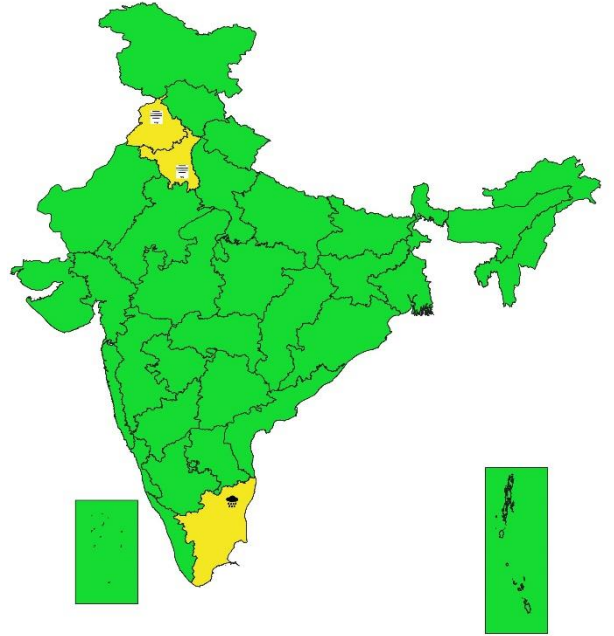
**SUBDIVISIONWISE WEATHER WARNING FOR DAY 4**  
07-01-2024



- |                            |                      |                          |
|----------------------------|----------------------|--------------------------|
| <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**  
08-01-2024



- |                            |                      |                          |
|----------------------------|----------------------|--------------------------|
| <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)    |



**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.

SPATIAL DISTRIBUTION			
(% 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)

Probabilistic Forecast	
Terms	Probability of Occurrence (%)
Unlikely	< 25
Likely	25 - 50
Very Likely	50 - 75
Most Likely	> 75

Flash Flood Risk	
	High Risk (Take Action)
	Moderate Risk (Be Prepared)
	Low Risk (Be Updated)

Definition of Cold wave, Cold Day and Fog Conditions:

**Cold Wave**

When minimum temperature of a station  $\leq 10^{\circ}\text{C}$  for plains and  $\leq 0^{\circ}\text{C}$  for hilly regions.

(a) Based on departure

Cold Wave:	Minimum Temperature Departure from normal $-4.5^{\circ}\text{C}$ to $-6.4^{\circ}\text{C}$ .
Severe Cold Wave:	Minimum Temperature Departure from normal $\leq -6.5^{\circ}\text{C}$ .

(b) Based on actual Minimum Temperature (for Plains only)

Cold Wave :	When Minimum Temperature is $\leq 4.0^{\circ}\text{C}$
Severe Cold Wave:	When Minimum Temperature is $\leq 2.0^{\circ}\text{C}$

(c) For Coastal Stations

When Minimum Temperature departure is  $\leq -4.5^{\circ}\text{C}$  & actual Minimum Temperature is  $\leq 15^{\circ}\text{C}$

**Cold Day**

When minimum temperature of a station  $\leq 10^{\circ}\text{C}$  for plains and  $\leq 0^{\circ}\text{C}$  for hilly regions

Based on departure

Cold Day:	Maximum Temperature Departure from normal $-4.5^{\circ}\text{C}$ to $-6.4^{\circ}\text{C}$ .
Severe Cold Day:	Maximum Temperature Departure from normal $\leq -6.5^{\circ}\text{C}$

**Fog**

Phenomenon of small droplets suspended in air and the horizontal visibility  $< 1\text{km}$

Moderate Fog:	When the visibility between 500-200 metres
Dense Fog:	when the visibility between 50- 200 metres
Very Dense Fog:	when the visibility $< 50$ metres