Government of India
Ministry of Earth Sciences
India Meteorological Department

Press Release
Date: 17th January, 2024
Time of Issue: 1330 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 4-5 days.

(ii) Cold wave to severe cold wave conditions likely to continue over plains of Northwest India during next 5 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 2-5°C over many parts of Punjab and some parts of Haryana-Chandigarh; in the range of 6-10°C over many parts of Delhi, Uttar Pradesh, Rajasthan, north Madhya Pradesh, Bihar, Jharkhand and north Chhattisgarh. These are below normal by 1°C to 3°C over many parts of Northwest & adjoining east India. **Today, the lowest minimum temperature of 2.0°C reported at Amritsar (Punjab).**
- Today, **Cold wave to severe cold wave conditions** prevailed over many parts of Punjab and **cold wave** in isolated pockets of Haryana & West Uttar Pradesh.
- **Fog conditions observed** (at 0530 & 0830 hours IST of today): **Dense to very Dense Fog** reported over most parts Punjab; in some parts of Haryana, Chandigarh; in some parts of West Uttar Pradesh, West Rajasthan; in isolated pockets of Uttarakhand, East Uttar Pradesh, East Rajasthan; **Dense Fog** in isolated pockets of north Madhya Pradesh, Bihar, Assam & Meghalaya and Odisha.

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 5 days.**
- It is likely to cause light rainfall/snowfall at isolated places over higher reaches of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand on 17th January.
- Light to moderate rainfall in isolated to some places very likely over Bihar, Jharkhand, Chhattisgarh, Odisha, West Bengal & Sikkim and Northeast India on 17th & 18th January, 2024.
- **Isolated Hailstorm** likely over Sikkim on 17th 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 late night/morning over many/some parts of Punjab, Haryana and Chandigarh during 17th late night to 20th morning and in isolated pockets on 21st & 22nd January morning.
- **Dense to very dense fog** conditions very likely to prevail for a few hours in late night/morning in some parts of West Uttar Pradesh on 17th and isolated pockets for subsequent 4 days.

- **Dense to very dense fog** conditions very likely to prevail for a few hours in late night/morning in some parts of East Uttar Pradesh on 17th and Dense fog in isolated pockets for subsequent 2 days.
- **Dense to very dense fog** conditions very likely to prevail in morning hours in isolated pockets over Uttarakhand 17th & 18th January, 2024.
- **Dense fog** conditions very likely to prevail in morning hours in isolated pockets of north Rajasthan during 17th-20th; over north Madhya Pradesh, Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during 17th-19th; over Himachal Pradesh on 17th & 18th; over Gangetic West Bengal and Odisha on 17th January, 2024.
- **Cold Day to Severe Cold Day** conditions very likely to continue in some parts of Punjab, Haryana-Chandigarh during 17th-19th and **Cold Day** in some parts on 20th & 21st January, 2024.
- **Cold Day to Severe Cold Day** conditions very likely to continue in some parts of West Uttar Pradesh on 17th & 18th and **Cold Day** in in isolated pockets during 19th-21st January.
- **Cold Day to Severe Cold Day** conditions very likely to continue in isolated pockets of East Uttar Pradesh and northwest Madhya Pradesh on 17th and **Cold Day** in isolated pockets over northwest Madhya Pradesh on 18th & 19th January.
- **Cold Day** conditions very likely to continue in isolated pockets of Bihar during 17th-21st January and over Rajasthan on 17th & 18th January, 2024.

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

- Rise in minimum temperatures by about 2°C very likely over Northwest India during next 2 days and no significant change thereafter.
- Rise in minimum temperatures by 2-4°C very likely over East India during next 2 days and no significant change 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 many/some parts of Punjab and Haryana-Chandigarh during 17th-19th and cold wave conditions on 20th & 21st January, 2024.
- **Cold wave** conditions very likely in isolated pockets of Himachal Pradesh on 17th & 18th; West Uttar Pradesh on 17th, 20th & 21st January and over north Rajasthan during 19th-21st January, 2024.

For more details kindly refer: https://mausam.imd.gov.in/responsive/all_india_forcast_bulletin.php

Annexure I

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

- Yesterday, **Maximum temperatures** were in the range of 12-14°C over most parts of Punjab, Haryana-Chandigarh, Uttar Pradesh, Bihar; 15-18°C over many parts of Delhi and which were below normal by 7-10°C at many parts over south Uttar Pradesh, Bihar and by 3-6°C at many parts over Punjab and Haryana-Chandigarh.

- Yesterday, **Cold day to Severe Cold day conditions** prevailed in many parts of Uttar Pradesh & Bihar; in some parts of Punjab; in isolated pockets of West Rajasthan; **Cold day conditions** in many parts of Haryana and in isolated pockets of Uttarakhand.

- **Visibility recorded (at 0530 hours IST of today) (≤500 metres): Punjab**: Amritsar, Patilala-25 each; **Haryana**: Ambala-25, Hissar-50; **Delhi**: Palam-200; **West Rajasthan**: Ganganagar, Churu-50 each; **West Uttar Pradesh:** Bareilly-25, Jhansi-200; **East Uttar Pradesh**: Bahrich-50, Lucknow-200; **Bihar**: Punea-200; **West Bengal**: Bankura-200; **Andhra Pradesh**: Vijayawada-50; **Assam**: North Lakhimpur-50, Tezpur-200

- **Visibility recorded (at 0830 hours IST of today) (≤500 metres): Punjab**: Bhatinda- 0; Amritsar, Ludhiana, Patiala-25 each; **Uttarakhand**: Pantnagar- 25; **Haryana**: Ambala-25, Hissar, Bhiwani-50 each; **West Rajasthan**: Ganganagar, Jaisalmer-25 each; Churu, Bikaner-50 each; **East Rajasthan**: Jaipur- 200; **West Uttar Pradesh**: Bareilly-25, Meerut- 200; **East Uttar Pradesh**: Prayagraj-50; Bahraich, Varanasi-200 each; **northeast Madhya Pradesh**: Khajuraho, Tikamgarh- 50 each; Satna-200; **Gangetic West Bengal**: Bankura-50; Panagarh- 200; **Delhi**: Ayanagar-200; **Sub-Himalayan West Bengal**: Jalpaiguri and cooch Behar- 200 each; **Assam**: North Lakhimpur-200, **Tripura**: Agartala and Kailashahar- 200 each.

Impact expected due to dense to very dense fog in the night/morning hours over Punjab, Haryana, Chandigarh, West Uttar Pradesh during 17th-21st and Uttarakhand, north Madhya Pradesh on 17th & 18th 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.

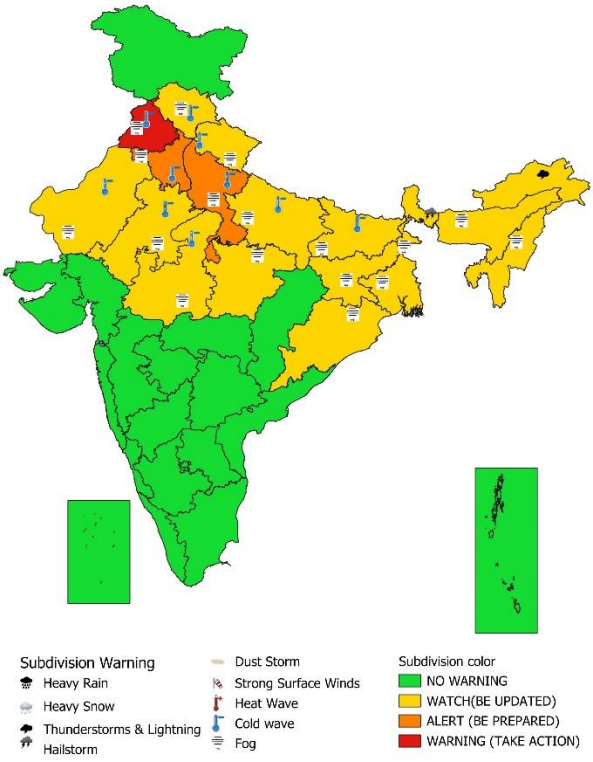
Impact expected due to Cold Day/Severe Cold Day conditions and Cold Wave/Severe Cold Wave conditions over Punjab, Haryana, Chandigarh during 17th-19th and Uttar Pradesh on 17th January, 2024.

- 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.

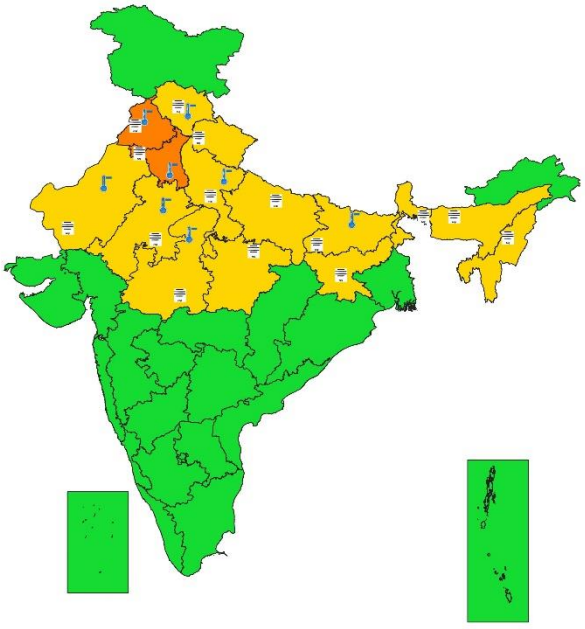
SUBDIVISIONWISE WEATHER WARNING FOR DAY 1
17-01-2024



Subdivision Warning
- Heavy Rain
- Heavy Snow
- Thunderstorms & Lightning
- Hailstorm
- Dust Storm
- Strong Surface Winds
- Heat Wave
- Cold wave
- Fog

Subdivision color
- NO WARNING
- WATCH(BE UPDATED)
- ALERT (BE PREPARED)
- WARNING (TAKE ACTION)

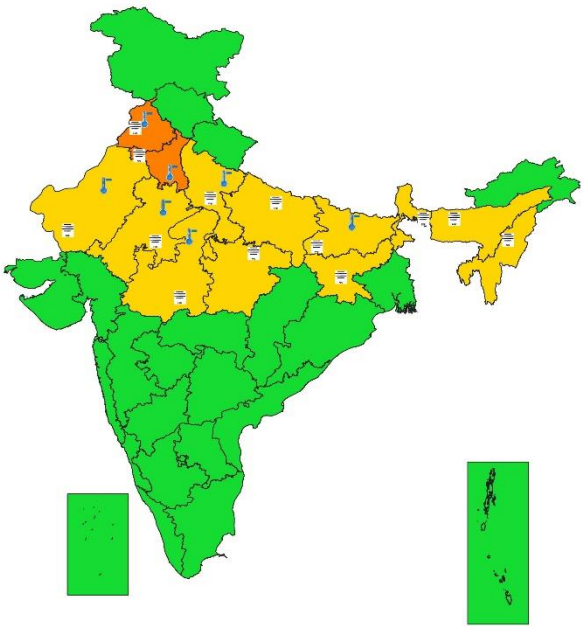
SUBDIVISIONWISE WEATHER WARNING FOR DAY 2
18-01-2024



Subdivision Warning
- Heavy Rain
- Heavy Snow
- Thunderstorms & Lightning
- Hailstorm
- Dust Storm
- Strong Surface Winds
- Heat Wave
- Cold wave
- Fog

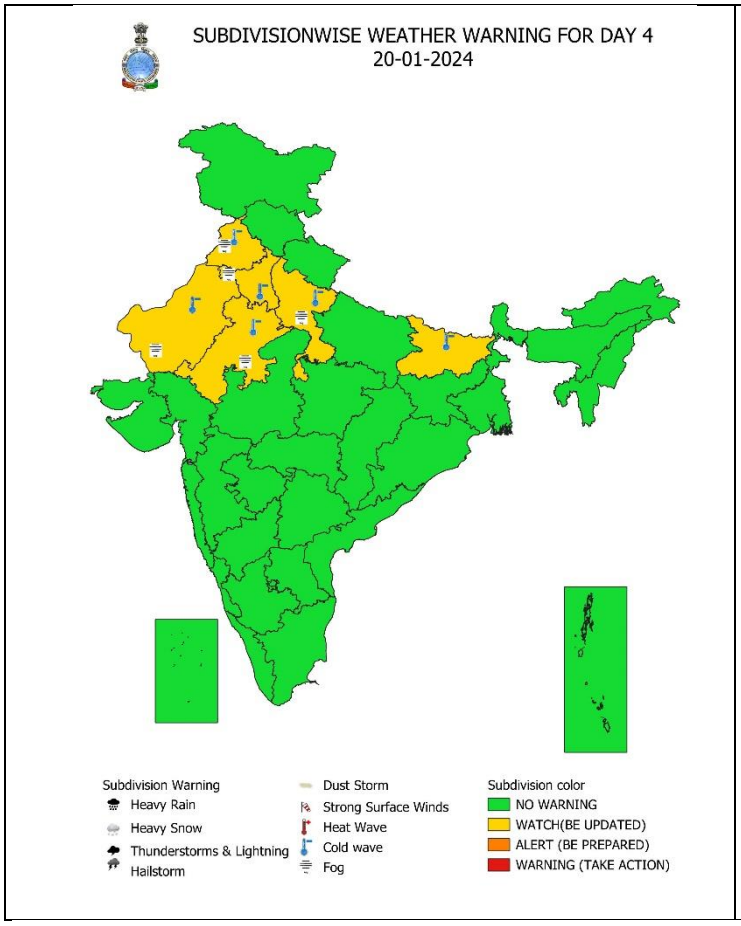
Subdivision color
- NO WARNING
- WATCH(BE UPDATED)
- ALERT (BE PREPARED)
- WARNING (TAKE ACTION)

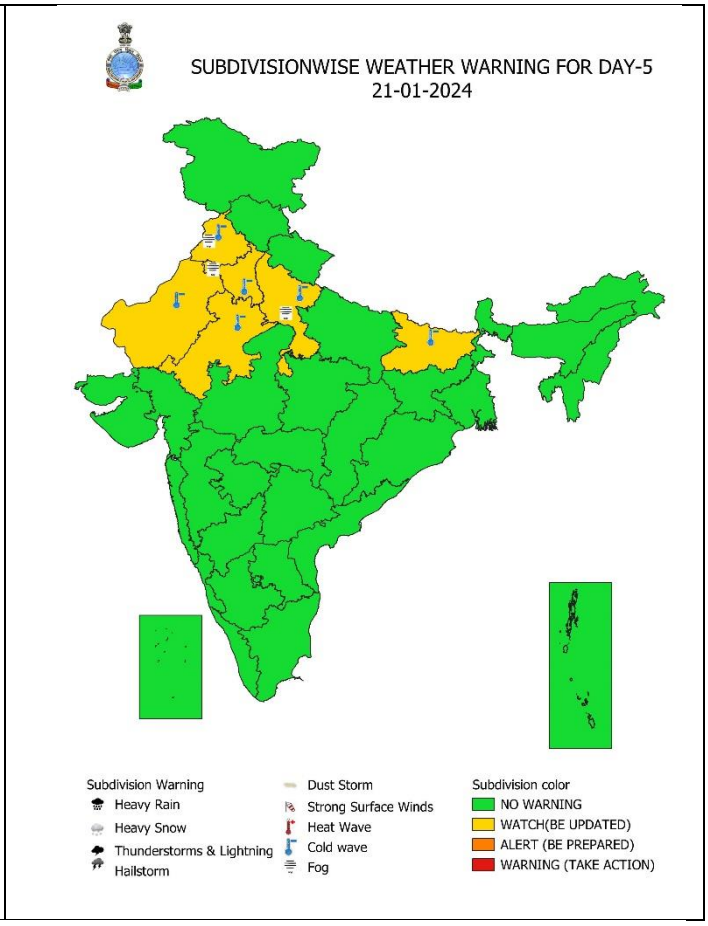
SUBDIVISIONWISE WEATHER WARNING FOR DAY 3
19-01-2024



Subdivision Warning
- Heavy Rain
- Heavy Snow
- Thunderstorms & Lightning
- Hailstorm
- Dust Storm
- Strong Surface Winds
- Heat Wave
- Cold wave
- Fog

Subdivision color
- NO WARNING
- WATCH(BE UPDATED)
- ALERT (BE PREPARED)
- WARNING (TAKE ACTION)


SUBDIVISIONWISE WEATHER WARNING FOR DAY 4
20-01-2024
Subdivision Warning
Heavy Rain
Heavy Snow
Thunderstorms & Lightning
Hailstorm
Dust Storm
Strong Surface Winds
Heat Wave
Cold wave
Fog
Subdivision color
NO WARNING
WATCH(BE UPDATED)
ALERT (BE PREPARED)
WARNING (TAKE ACTION)


SUBDIVISIONWISE WEATHER WARNING FOR DAY-5
21-01-2024
Subdivision Warning
Heavy Rain
Heavy Snow
Thunderstorms & Lightning
Hailstorm
Dust Storm
Strong Surface Winds
Heat Wave
Cold wave
Fog
Subdivision color
NO WARNING
WATCH(BE UPDATED)
ALERT (BE PREPARED)
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 Widespred (FWS/ Many Places)	1-25	Isolated (ISOL)

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

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 ≤10°C for plains and ≤0°C for hilly regions.

(a). Based on departure

- **Cold Wave:** Minimum Temperature Departure from normal -4.5 °C to -6.4 °C.
- **Severe Cold Wave:** Minimum Temperature Departure from normal ≤ -6.5 °C

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

- **Cold Wave :** When Minimum Temperature is ≤ 4.0 °C
- **Severe Cold Wave:** When Minimum Temperature is ≤ 2.0 °C

(c) For Coastal Stations

When Minimum Temperature departure is ≤-4.5 °C & actual Minimum Temperature is ≤ 15 °C

Cold Day

When minimum temperature of a station ≤10°C for plains and ≤0°C for hilly regions

Based on departure

- **Cold Day:** Maximum Temperature Departure from normal -4.5 °C to -6.4 °C.
- **Severe Cold Day:** Maximum Temperature Departure from normal ≤ -6.5 °C

Fog

Phenomenon of small droplets suspended in air and the horizontal visibility < 1km

- **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