Government of India
Ministry of Earth Sciences
India Meteorological Department

Press Release
Date: 13th January, 2024
Time of Issue: 1230 hours IST

Subject:

(i) Dense to very dense fog conditions likely to continue to prevail over North India during next 4-5 days.

(ii) Cold day to severe cold day conditions likely over plains of Northwest India during next 4 days and reduction thereafter.

(iii) Cold wave to severe cold wave conditions likely over plains of Northwest India during next 3 days and improve thereafter.

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 3-7°C over most parts of Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, north Madhya Pradesh and in some parts Rajasthan and in isolated pockets of Bihar; in the range of 8-10°C over many Parts of south Rajasthan. These are below normal by 1.0°C to 2.0°C in many parts of North & adjoining Central India except over Punjab, Haryana and Rajasthan where these are normal to above normal. **Today, the lowest minimum temperature of 3.0°C reported at Narnaul (Haryana), Ayanagar (Delhi) & Kanpur (East Uttar Pradesh).**
- Today, **Cold wave to severe cold wave conditions** prevailed in some parts of Punjab, Haryana & West Uttar Pradesh; in isolated pockets of East Rajasthan & East Uttar Pradesh and **cold wave conditions** in some parts of Delhi.
- Yesterday, **Cold day to severe cold day conditions** prevailed in most parts of Punjab; in many parts of Haryana & Chandigarh; in some parts of West Uttar Pradesh; in isolated pockets of Himachal Pradesh, West Rajasthan & Uttarakhand**. Cold day conditions** prevailed in some parts of Bihar.
- **Fog conditions observed** (at 0530 & 0830 hours IST of today): **Dense to Very Dense fog** reported in most parts of Punjab, Haryana; in many parts of West Uttar Pradesh; in some parts of East Uttar Pradesh; isolated pockets of northwest Madhya Pradesh and Sub-Himalayan West Bengal; **Dense fog** in many parts of Uttarakhand; in some parts of Bihar; in isolated pockets of Odisha, Assam & northwest Rajasthan.

Weather Systems and Forecast & Warnings during next 5 days:

- Conditions are becoming favourable for cessation of Northeast Monsoon rains over Tamilnadu, Puducherry & Karaikal, Kerala & Mahe and adjoining areas of Coastal Andhra Pradesh & Yanam, Rayalaseema and South Interior Karnataka around 15th January, 2024.
- The Western Disturbance as a trough in middle tropospheric westerlies runs roughly along Long. 62°E to the north of Lat. 32°N. Under its influence; Light rainfall/snowfall at isolated places very

likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Himachal Pradesh on 13th January, 2024.

- A fresh Western Disturbance is likely to affect Western Himalayan Region from 16th January, 2024. Under its influence; Light rainfall/snowfall at isolated places very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh on 16th & 17th and Uttarakhand on 17th & 18th January.

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 in some/many parts of Punjab and Haryana, Chandigarh & Delhi during 13th-16th and **dense fog** in isolated pockets on 17th January, 2024.
- **Dense to very dense fog** conditions very likely to prevail for a few hours in night/morning in some/many parts of Uttar Pradesh during 13th-15th and **dense fog** in isolated pockets on 16th & 17th January, 2024.
- **Dense to very dense fog** conditions very likely to prevail for a few hours in morning in some parts of Himachal Pradesh & Uttarakhand during 13th-14th and **dense fog** in isolated pockets on 15th January, 2024.
- **Dense fog** conditions very likely to prevail for a few hours in morning in some parts of north Rajasthan & Sub-Himalayan West Bengal during 13th-14th; over Bihar, Assam & Meghalaya and Mizoram & Tripura during 13th-15th; over north Madhya Pradesh and Odisha on 13th January, 2024.
- **Cold Day to Severe Cold Day** conditions very likely to continue in some/many parts of Punjab, Haryana-Chandigarh during 13th-15th and in isolated pockets on 16th January, 2024.
- **Cold Day to Severe Cold Day** conditions very likely to continue in some parts of Uttar Pradesh on 13th & 14th and **Cold Day** in isolated pockets of West Uttar Pradesh on 15th January, 2024.
- **Cold Day** conditions very likely in isolated pockets of Bihar on 13th & 14th 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 2-3°C thereafter for subsequent 3 days.
- Fall by 2-3°C in minimum temperatures very likely over many parts of Central India during next 2 days and no significant change thereafter for subsequent 3 days.
- **Cold wave to Severe Cold wave** conditions very likely to continue in some parts of Punjab, Haryana-Chandigarh-Delhi during 13th-15th and **cold wave** conditions in isolated pockets on 16th January, 2024.
- **Cold wave** conditions very likely in isolated pockets of West Uttar Pradesh & East Rajasthan during 13th -15th; over East Uttar Pradesh on 13th and over West Rajasthan on 14th & 15th January.
- **Ground frost conditions** very likely over Himachal Pradesh, Uttarakhand, Punjab, Haryana-Chandigarh-Delhi, East Rajasthan on 13th & 14th and over West Rajasthan on 14th 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 12-17°C over most parts of plains of Uttarakhand, Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh & west Bihar which were below normal by 4-6°C.

- **Visibility recorded** (at 0530 hours IST of today) (≤200 metres): **Punjab:** Amritsar-25; **Haryana-Delhi:** Hissar-50, Palam (Delhi) & Safdarjung (Delhi)-200 each; **Uttar Pradesh:** Lucknow & Varanasi(Babatpur)-25 each, Gorakhpur & Bahraich-200 each; **Bihar:** Purnea & Gaya -50 each; **northwest Madhya Pradesh:** Gwalior-200; **Gangetic West Bengal:** Diamond Harbour- 50; **Assam:** Tezpur, North Lakhimpur & Dibrugarh-50 each.

- **Visibility** recorded (at 0830 hours IST of today) (≤200 metres): **West Uttar Pradesh**: Agra-0; **West Madhya Pradesh:** Gwalior-0; **East Uttar Pradesh:** Bahraich & Gorakhpur-25 each, Prayagraj-50, Lucknow-200; **Punjab**: Bhatinda, Amritsar & Patiala-50 each; **Delhi:** Ridge-50, Palam-200; **northwest Rajasthan:** Ganganagar-50; **Bihar:** Patna-50, Gaya-200; **Sub-Himalayan West Bengal:** Siliguri, Jalpaiguri & Cooch Behar-50 each; **Assam:** Dhubri-50, Tezpur & Dibrugarh-200 each; **Jammu Division:** Jammu-100; **Haryana:** Ambala & Karnal-200 each.

Impact expected due to dense to very dense fog in the night/morning hours over Punjab, Haryana, Chandigarh and Uttar Pradesh during 13th-16th 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:

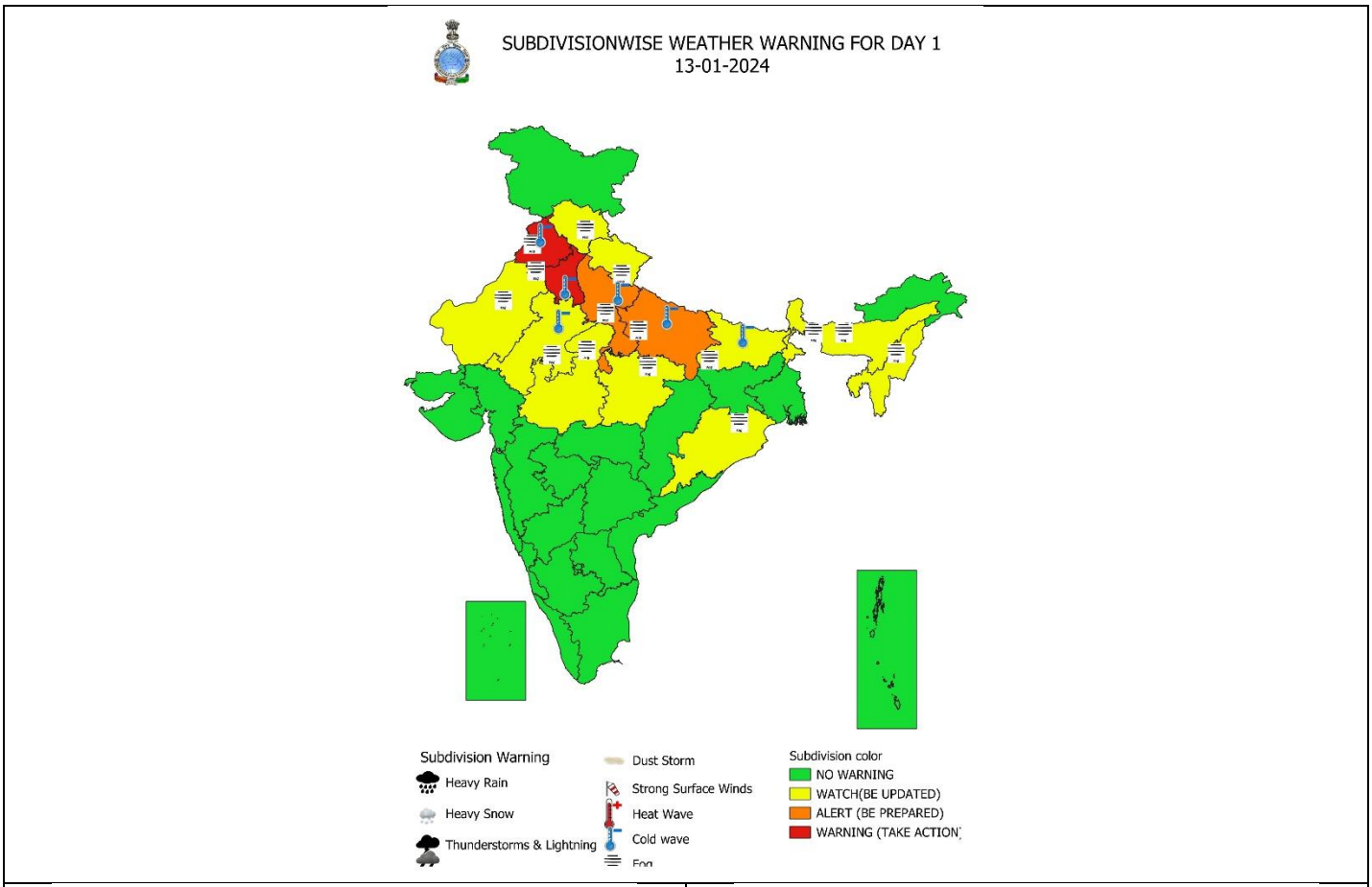
- **Transport and Aviation:**
  - Be careful while driving or outing through any transport.
  - Use fog lights during driving.
  - Be in touch with airlines, railways and state transport for schedule of your journey.
- **Power Sector:**
  - To keep ready Maintenance Team
  - Human Health: To avoid outing until unless emergency and to cover the face.

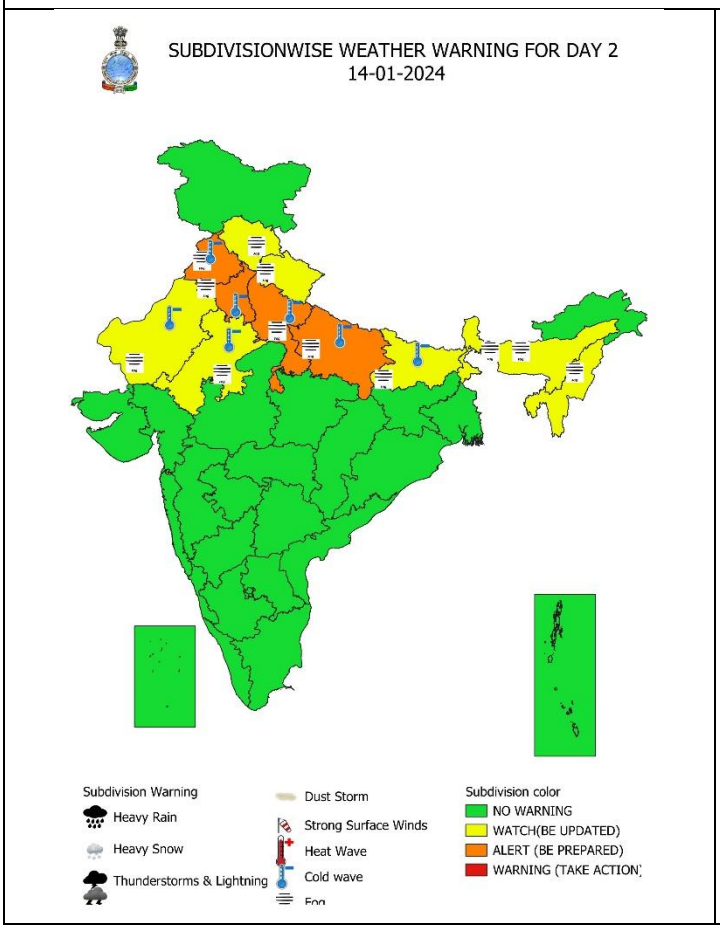
Impact expected due to Cold Day/Severe Cold Day conditions and Cold Wave/Severe Cold Wave conditions over Punjab, Haryana, Chandigarh & Delhi during 13th-16th January, 2024.

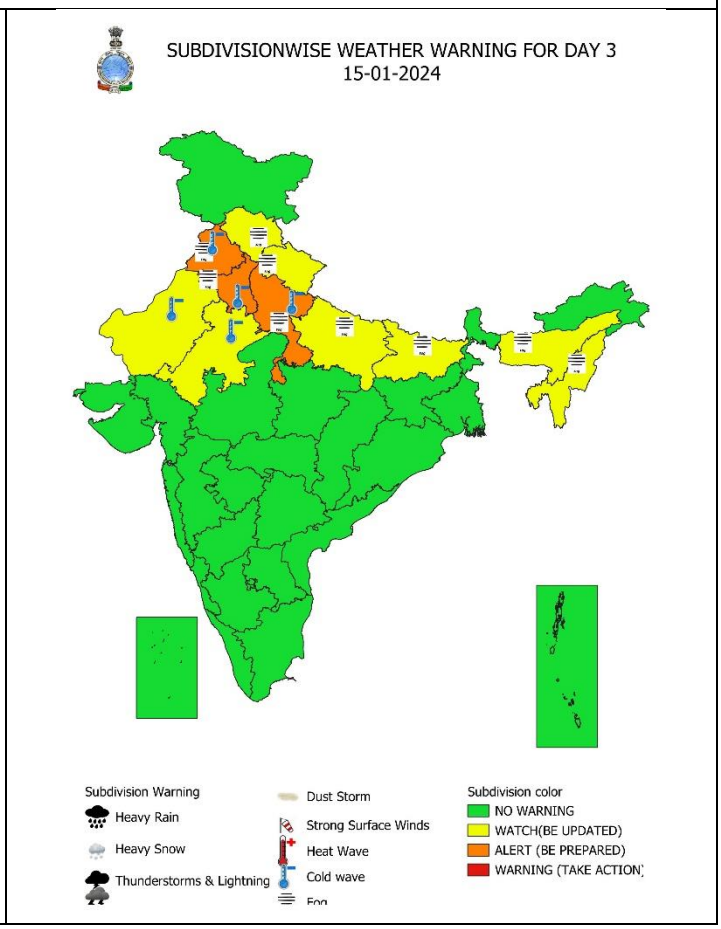
- An increased likelihood of various illnesses like flu, running/ stuffy nose or nosebleed, which usually set in or get aggravated due to prolonged exposure to cold.
- Do not ignore shivering. It is the first sign that the body is losing heat. Get Indoors.
- Frostbite can occur due to prolonged exposure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

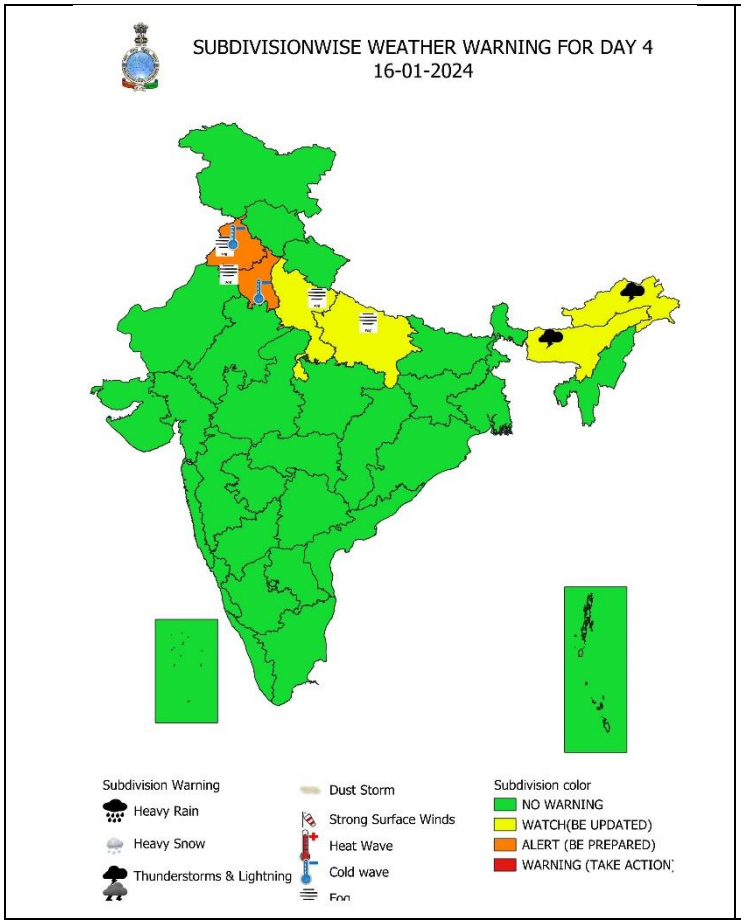
Action suggested:

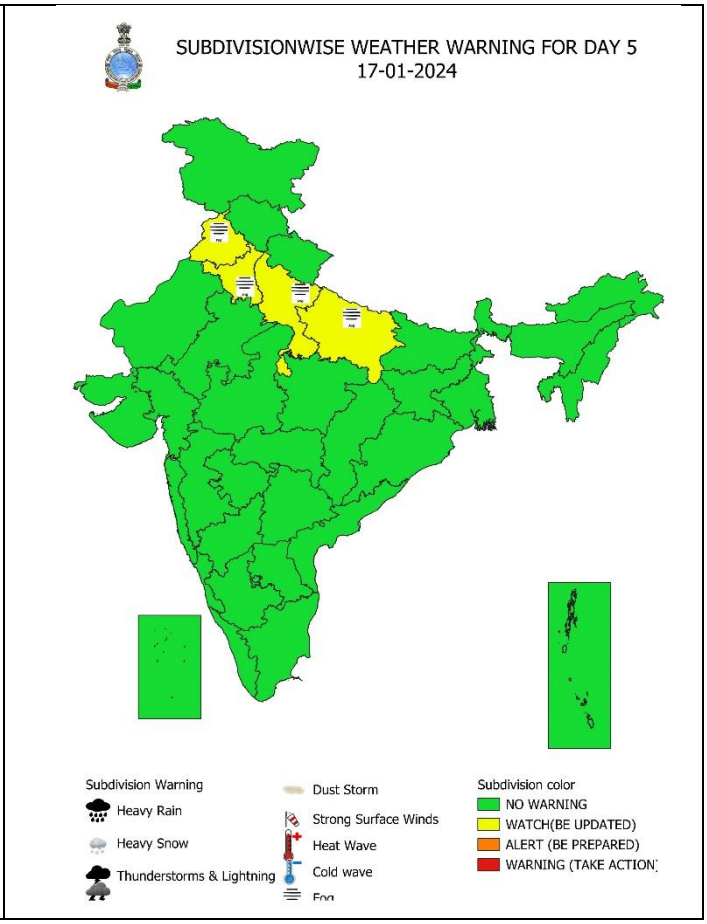
- Wear several layers of loose fitting, light weight; warm woolen clothing.
- Cover your head, neck, hands and toes adequately as majority of heat loss occurs through these body parts. Wear several layers of loose fitting, light weight; warm woolen clothing rather than one layer of heavy cloth.
- Eat 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
13-01-2024
Subdivision Warning
Heavy Rain
Heavy Snow
Thunderstorms & Lightning
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
14-01-2024
Subdivision Warning
Heavy Rain
Heavy Snow
Thunderstorms & Lightning
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
15-01-2024
Subdivision Warning
Heavy Rain
Heavy Snow
Thunderstorms & Lightning
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
16-01-2024
Subdivision Warning
Heavy Rain
Heavy Snow
Thunderstorms & Lightning
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
17-01-2024
Subdivision Warning
Heavy Rain
Heavy Snow
Thunderstorms & Lightning
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