

Government of India  
Ministry of Earth Sciences  
India Meteorological Department



Press Release

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

Time of Issue: 1330 hours IST

**Subject: (i) Well marked Low pressure area over southwest Bay of Bengal. Under its influence, heavy rainfall likely over Coastal Andhra Pradesh, Rayalaseema and North Tamil Nadu during 18<sup>th</sup>-20<sup>th</sup> December**

**(ii) Cold wave conditions likely to prevail over major parts of Northwest India during next 5-7 days.**

**i. Realised weather during past 24 hours till 0830 hours IST of today (Annexure I)**

- ❖ **Cold wave to severe cold conditions** observed in isolated pockets of Himachal Pradesh, Punjab, Rajasthan; **cold wave conditions** in few places over Haryana; isolated pockets over East Madhya Pradesh, Saurashtra & Kutch.
- ❖ **Cold Day** observed in isolated parts of West Rajasthan.
- ❖ **Ground frost conditions** recorded in isolated pockets of Himachal Pradesh.
- ❖ **Dense fog (50-200 m)** reported in isolated pockets of Himachal Pradesh, Haryana, Delhi, Uttar Pradesh & Odisha.
- ❖ **Visibility reported ( $\leq 200$  m)** (in meter): **East Uttar Pradesh:** Ballia 50; **Himachal Pradesh:** Bilaspur 50; **Haryana:** Karnal 100; **Odisha:** Phulbani-120; **West Uttar Pradesh:** Bareilly 200.
- ❖ **Heavy rainfall** observed in isolated pockets of Tamil Nadu, Andaman & Nicobar Islands.

**Weather Systems:**

- ❖ **Well marked Low pressure area** over southwest Bay of Bengal with associated cyclonic circulation extending upto middle tropospheric levels. It is likely to move nearly northwestwards towards north Tamil Nadu and south Andhra Pradesh coast during next 24 hours. Thereafter, it is likely to move nearly northwards along Andhra Pradesh coast in subsequent 24 hours.
- ❖ A **Western disturbance** seen as a trough in lower & middle tropospheric westerlies runs roughly along Long. 60°E to the north of Lat. 28°N with an induced circulation in the lower levels over southwest Rajasthan.

**Forecast & Warnings (upto 7 days) (Annexure II & III):**

- ❖ **Coastal Andhra Pradesh:** Isolated **heavy to very heavy rainfall** very likely on 19<sup>th</sup> December. Isolated **heavy rainfall** likely on 18<sup>th</sup> & 20<sup>th</sup> December.
- ❖ **Tamil Nadu:** Isolated **heavy rainfall** very likely on 18<sup>th</sup> December.
- ❖ **Rayalaseema:** Isolated **heavy rainfall** very likely on 18<sup>th</sup> & 19<sup>th</sup> December.

**ii. Temperature, Cold Wave and Fog Forecast:**

**Temperature Conditions during past 24 hours till 0830 hours IST of today (Annexure IV):**

Minimum temperatures were

**below 0°C** over most parts of Jammu, Kashmir & Ladakh & Himachal Pradesh;

**0-6°C** over major parts of Punjab, Haryana, north Rajasthan and isolated pockets of Madhya Pradesh, Uttar Pradesh;

**6-12°C** over remaining parts of Northwest, East, Central and West India.

Today, the **lowest minimum temperature** of **1.8°C** is reported at **Churu (West Rajasthan)** over the plains of the country.

**Minimum temperatures have fallen** by 2-4°C over most parts of West Rajasthan & risen by 2-3°C over most parts of Telangana, Odisha, Arunachal Pradesh & some parts of south Chhattisgarh & Jharkhand.

**Minimum Temperatures Departures (as on 18-12-2024):** Minimum temperatures are **appreciably above normal (3°C to 5°C)** at isolated places over Rayalaseema Nagaland, Manipur, Mizoram & Tripura; **above normal (1.6°C to 3°C)** at isolated places over Bihar, Assam & Meghalaya, Coastal Andhra Pradesh & Yanam, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe. These are **markedly below normal (-5°C or less)** at isolated places over East Madhya

Pradesh, Saurashtra & Kutch, Telangana; **appreciably below normal (-3°C to -5°C)** at a few places over West Rajasthan; at isolated places over Haryana, East Rajasthan, West Madhya Pradesh, North Interior Karnataka, Chhattisgarh; **below normal (-1°C to -3°C)** at a few places over Vidarbha; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Punjab, Uttar Pradesh, Konkan & Goa, Madhya Maharashtra, Marathwada and near normal over rest parts of the country.

#### **Forecast of temperature:**

- ❖ No significant change in minimum temperatures likely over Western Himalayan region during next 1 days and gradual fall by 2-3°C during subsequent 2-4 days.
- ❖ No significant change in minimum temperatures likely over plains of Northwest India during next 1-2 days and gradual fall by 2-3°C during the subsequent 3 days.
- ❖ Rise in minimum temperatures by 3-4°C likely over Central India & Maharashtra during the next 2 days & no significant change thereafter.
- ❖ No significant change in minimum temperatures likely over Gujarat during next 3 days and rise by 2-3 °C during the subsequent 2 days.
- ❖ Rise in minimum temperatures by 2-3°C likely over East India during next 2 days and no significant change thereafter.

#### **Cold Wave Warnings:**

**Cold wave to severe cold wave** conditions very likely to prevail in few places over Himachal Pradesh during 18<sup>th</sup> - 22<sup>nd</sup>; isolated parts of East Rajasthan during 19<sup>th</sup> -21<sup>st</sup>; West Rajasthan on 20<sup>th</sup> & 21<sup>st</sup>; Punjab during 18<sup>th</sup> -22<sup>nd</sup> December.

**Cold wave** conditions very likely in isolated pockets over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad during the next 7 days; West Rajasthan on 18<sup>th</sup>, 19<sup>th</sup> & 22<sup>nd</sup>, East Rajasthan on 18<sup>th</sup> & 22<sup>nd</sup>; Himachal Pradesh on 23<sup>rd</sup> & 24<sup>th</sup>; Haryana during 18<sup>th</sup> -22<sup>nd</sup> December.

#### **Dense Fog Warnings:**

**Dense fog conditions** very likely to prevail during late night/early morning hours in isolated pockets of Punjab, Haryana, Uttar Pradesh on 18<sup>th</sup> & 19<sup>th</sup>; East Rajasthan, Jharkhand on 20<sup>th</sup> & 21<sup>st</sup> December.

#### **Ground Frost Warnings:**

**Ground Frost** conditions very likely in isolated pockets of Himachal Pradesh & East Rajasthan during 18<sup>th</sup>-22<sup>nd</sup> December.

#### **Fishermen Warnings (Annexure V):**

Fishermen are advised not to venture into central parts of south Arabian sea and adjoining equatorial Indian ocean on 18<sup>th</sup>; Gulf of Mannar during 18<sup>th</sup>-20<sup>th</sup>; Southwest & Westcentral Bay of Bengal and Tamil Nadu coast during 18<sup>th</sup>-20<sup>st</sup>; Andhra Pradesh coast during 18<sup>th</sup>-21<sup>st</sup> December.

### **iii. Weather conditions and forecast over Delhi/NCR during 18<sup>th</sup> to 21<sup>th</sup> Dec. 2024 (Annexure VI)**

**For more details, kindly refer National Weather Bulletin:**

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

**For District wise warnings refer:** <https://mausam.imd.gov.in/responsive/districtWiseWarningGIS.php>

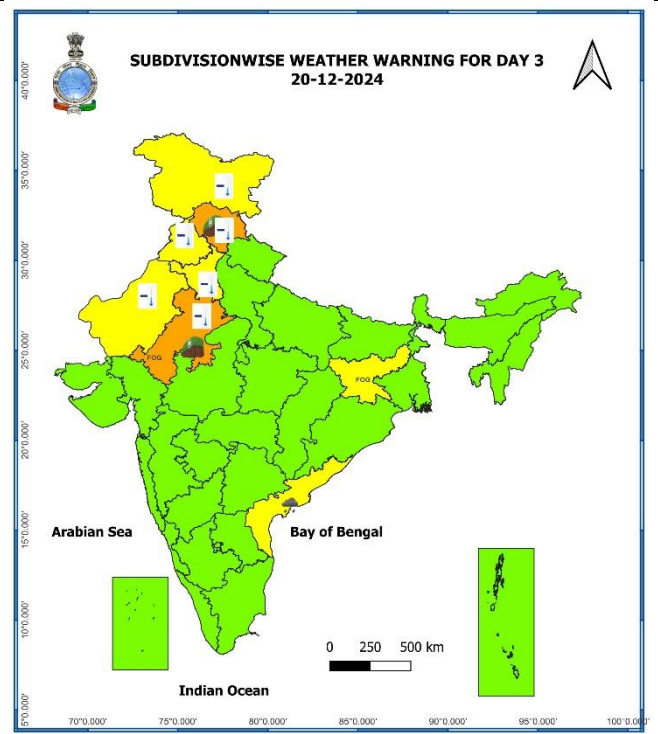
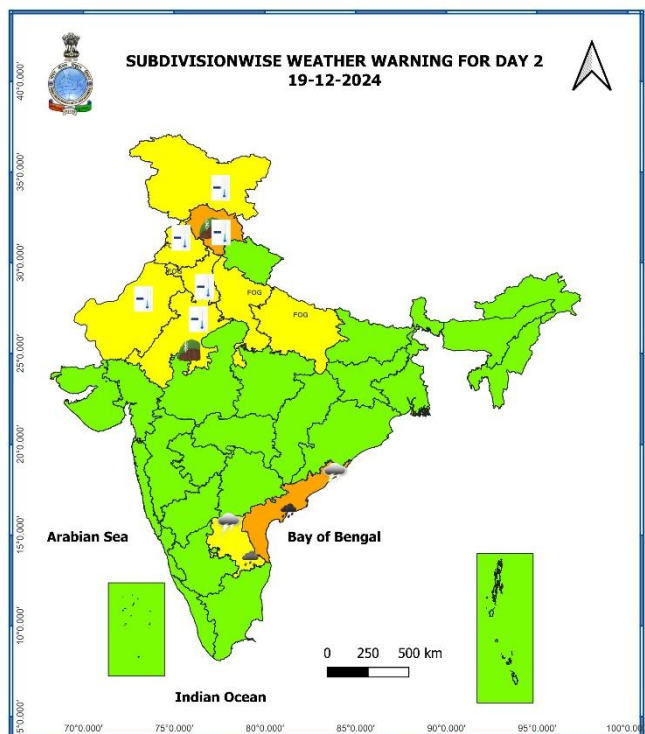
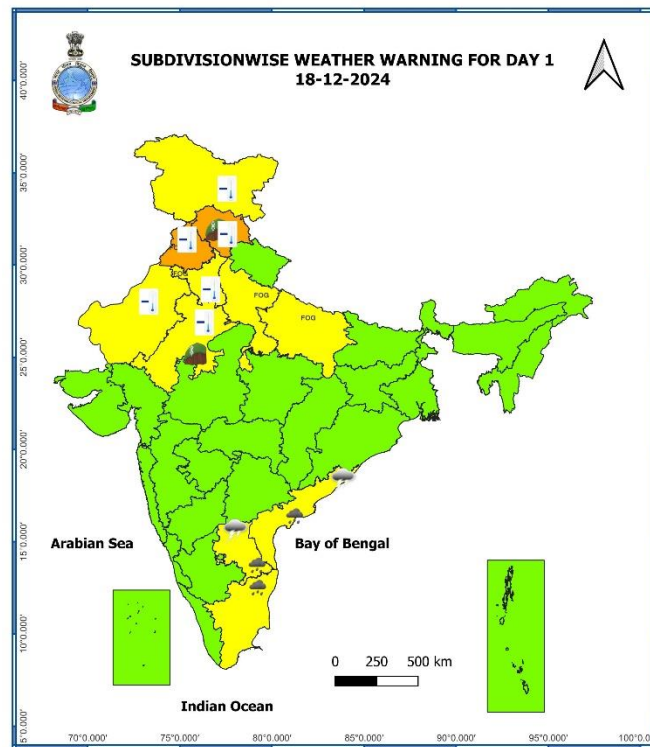
## **ANNEXURE I**

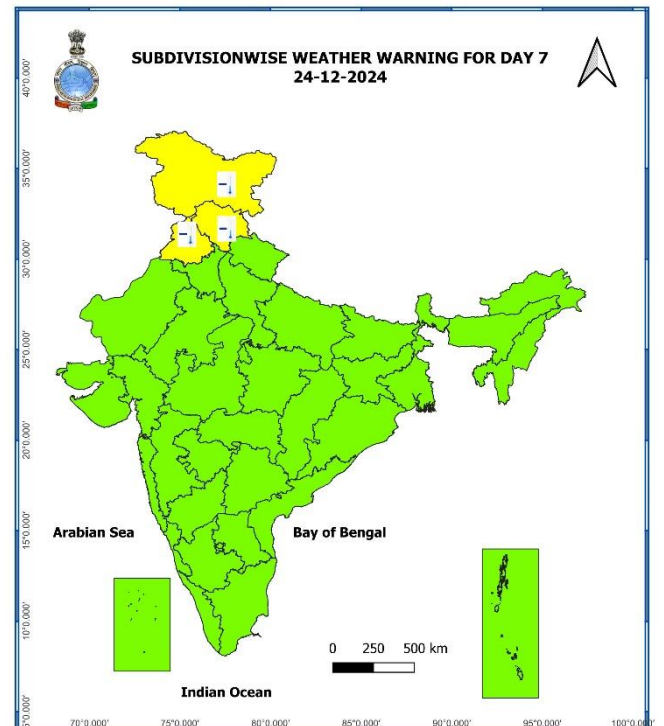
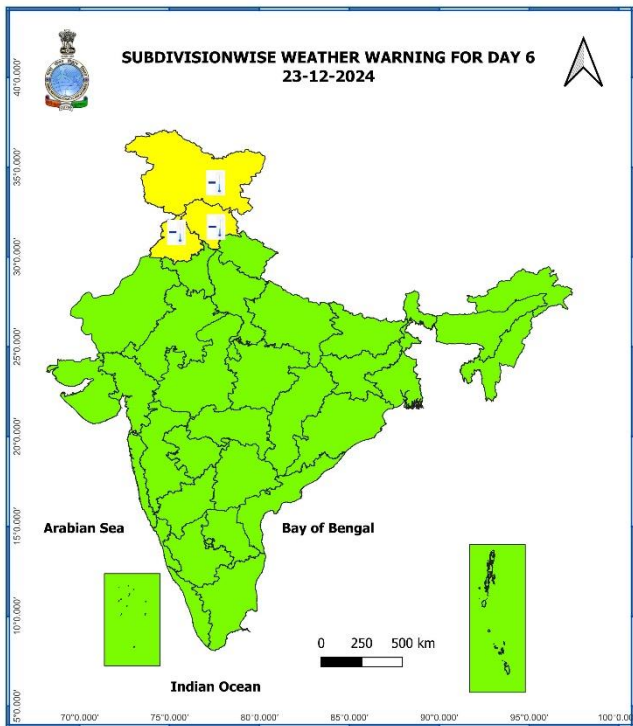
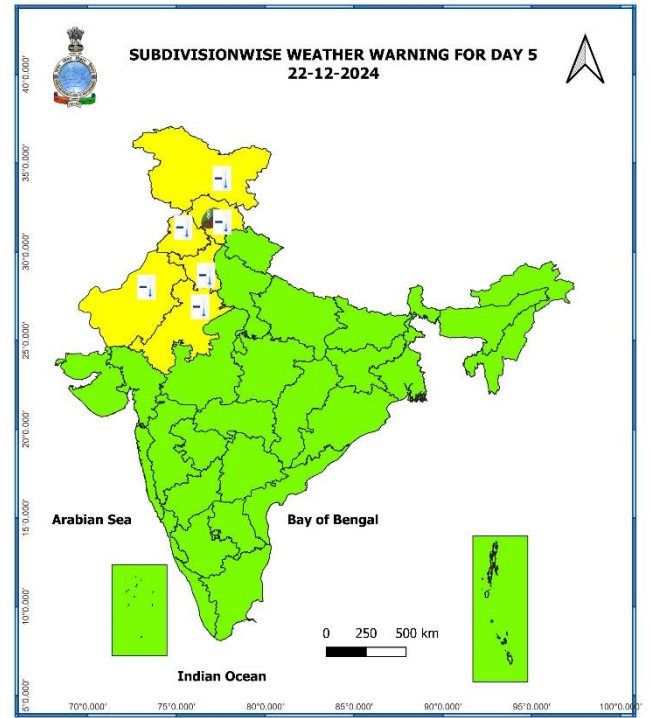
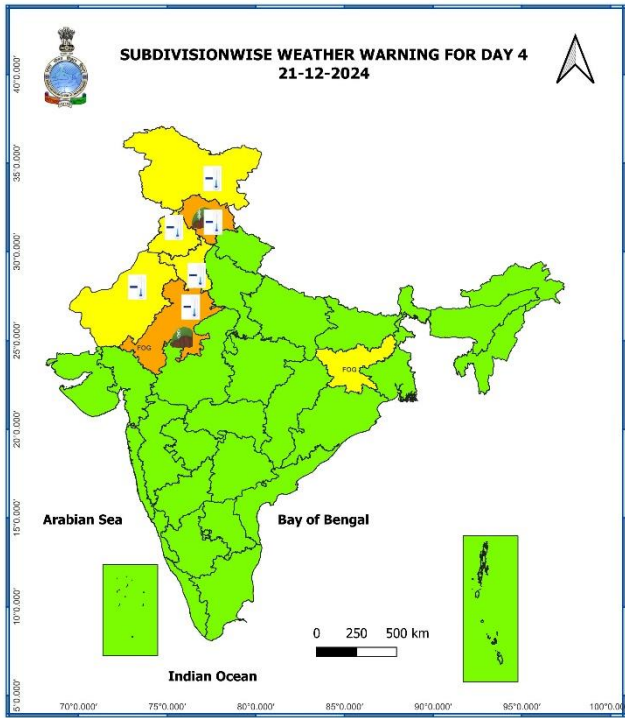
### **Significant Rainfall recorded during past 24 hours till 0830 hours IST of today 18.12.2024 (in cm):**

- ❖ **Andaman & Nicobar Islands:** Carnicobar \_IAF 10; Nancowry 5,
- ❖ **Tamil Nadu, Puducherry & Karaikal:** Rajapalayam (dist Virudhunagar) 9, Srivilliputhur (dist Virudhunagar) 7,

7 Days Rainfall Forecast								
S. No.	Subdivision	18-Dec	19-Dec	20-Dec	21-Dec	22-Dec	23-Dec	24-Dec
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1	ANDAMAN & NICOBAR ISLANDS	FWS	FWS	SCT	FWS	FWS	FWS	FWS
2	ARUNACHAL PRADESH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
3	ASSAM & MEGHALAYA	DRY	DRY	DRY	ISOL	ISOL	DRY	DRY
4	NAGALAND, MANIPUR, MIZORAM & TRIPURA	DRY	DRY	ISOL	SCT	SCT	ISOL	ISOL
5	SUB-HIMALAYAN WEST BENGAL & SIKKIM	DRY	DRY	ISOL	ISOL	DRY	DRY	DRY
6	GANGETIC WEST BENGAL	DRY	DRY	SCT	ISOL	DRY	DRY	DRY
7	ODISHA	ISOL	SCT	SCT	ISOL	DRY	DRY	DRY
8	JHARKHAND	DRY	DRY	ISOL	DRY	DRY	DRY	DRY
9	BIHAR	DRY	DRY	DRY	DRY	DRY	DRY	DRY
10	EAST UTTAR PRADESH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
11	WEST UTTAR PRADESH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
12	UTTARAKHAND	DRY	DRY	DRY	DRY	DRY	DRY	DRY
13	HARYANA CHANDIGARH & DELHI	DRY	DRY	DRY	DRY	DRY	DRY	DRY
14	PUNJAB	DRY	DRY	DRY	DRY	DRY	DRY	DRY
15	HIMACHAL PRADESH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
16	JAMMU & KASHMIR AND LADAKH	DRY	DRY	DRY	ISOL	ISOL	DRY	DRY
17	WEST RAJASTHAN	DRY	DRY	DRY	DRY	DRY	DRY	DRY
18	EAST RAJASTHAN	DRY	DRY	DRY	DRY	DRY	DRY	DRY
19	WEST MADHYA PRADESH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
20	EAST MADHYA PRADESH	DRY	DRY	DRY	ISOL	DRY	DRY	DRY
21	GUJARAT REGION	DRY	DRY	DRY	DRY	DRY	DRY	DRY
22	SAURASHTRA & KUTCH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
23	KONKAN & GOA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
24	MADHYA MAHARASHTRA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
25	MARATHAWADA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
26	VIDARBHA	DRY	DRY	ISOL	DRY	DRY	DRY	DRY
27	CHHATTISGARH	DRY	ISOL	ISOL	ISOL	ISOL	DRY	DRY
28	COASTAL ANDHRA PRADESH & YANAM	FWS	FWS	FWS	SCT	ISOL	ISOL	ISOL
29	TELANGANA	DRY	ISOL	ISOL	DRY	DRY	DRY	DRY
30	RAYALASEEMA	SCT	SCT	SCT	ISOL	ISOL	ISOL	ISOL
31	TAMILNADU PUDUCHERRY & KARAIKAL	ISOL	SCT	ISOL	ISOL	ISOL	ISOL	ISOL
32	COASTAL KARNATAKA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
33	NORTH INTERIOR KARNATAKA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
34	SOUTH INTERIOR KARNATAKA	DRY	DRY	ISOL	DRY	DRY	ISOL	ISOL
35	KERALA & MAHE	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
36	LAKSHADWEEP	SCT	SCT	SCT	DRY	DRY	DRY	DRY

- As the lead period increases forecast accuracy decreases.





- Action may be taken based on ORANGE AND RED COLOUR warnings.
- Vulnerable regions likely urban and hilly areas action may be initiated for heavy rainfall warning.
- As the lead period increases forecast accuracy decreases.



Fig. 1: Maximum Temperatures

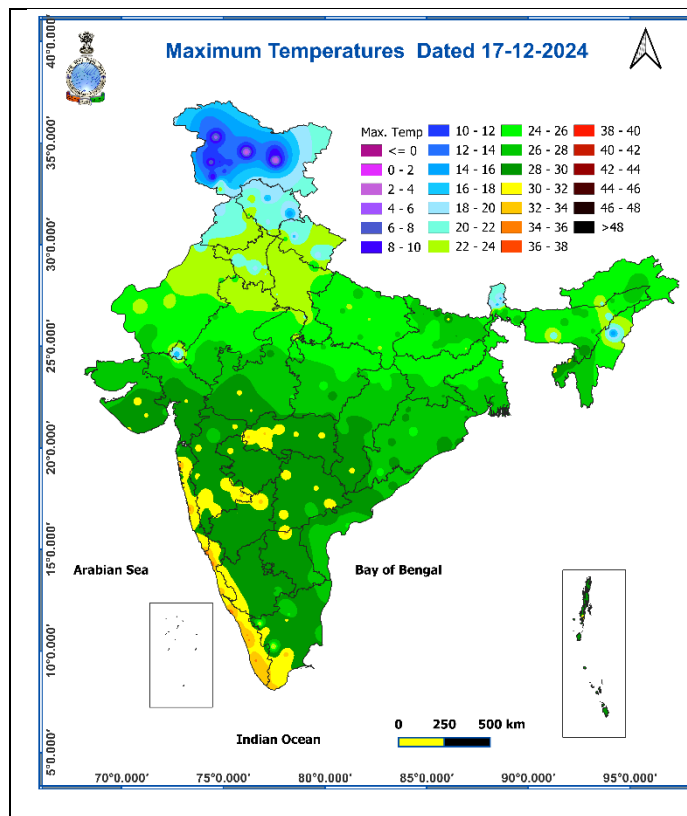


Fig. 2: Departure of Maximum Temperatures

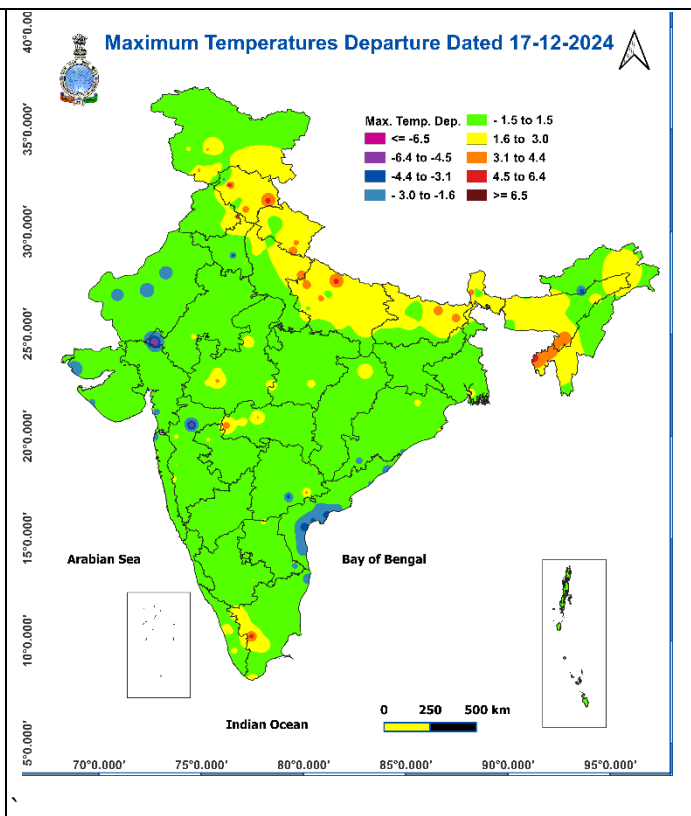


Fig. 3: Minimum Temperatures

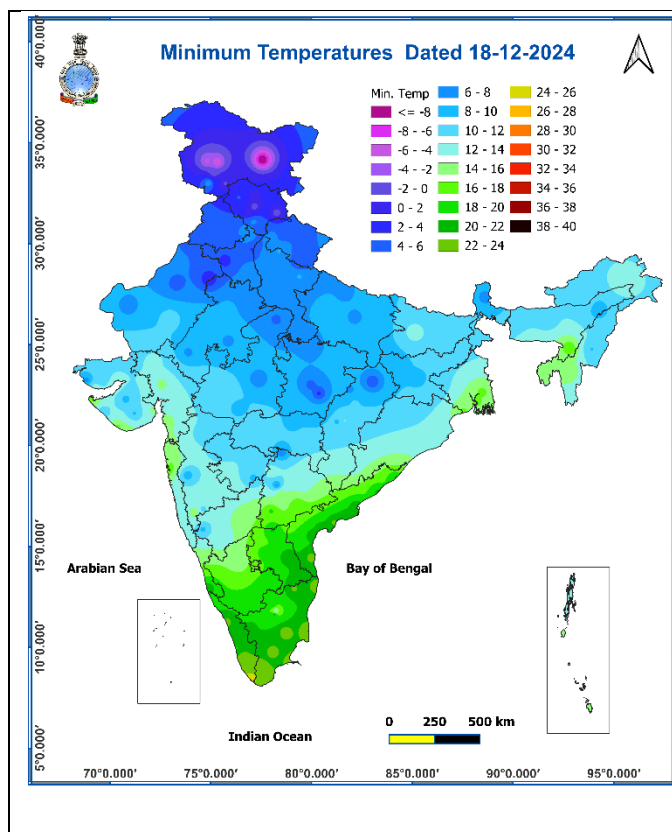
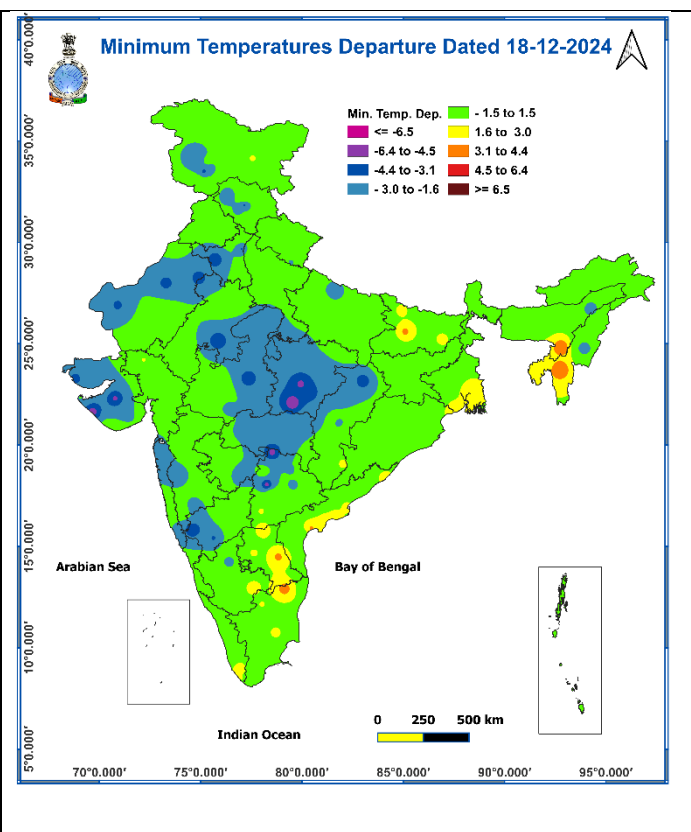


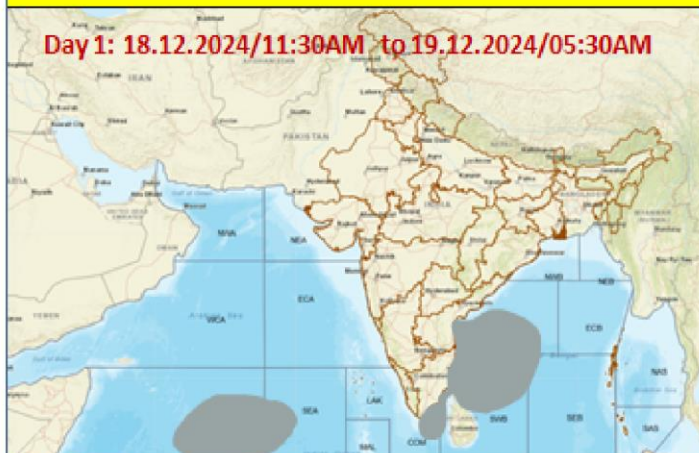
Fig. 4: Departure of Minimum Temperatures





## Fishermen Warning Graphics

**Day 1: 18.12.2024/11:30AM to 19.12.2024/05:30AM**



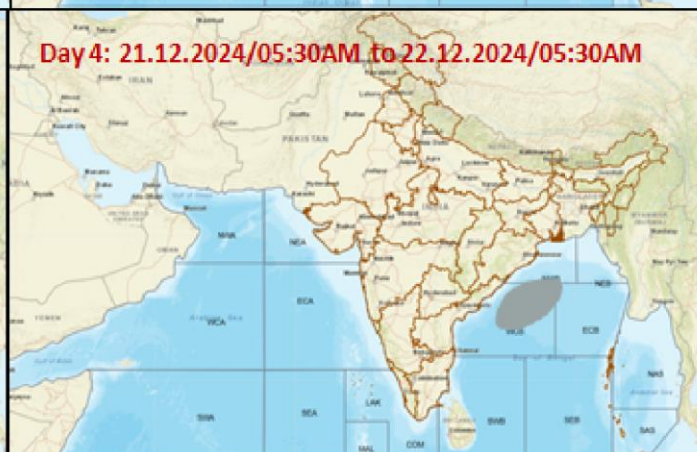
**Day 2: 19.12.2024/05:30AM to 20.12.2024/05:30AM**



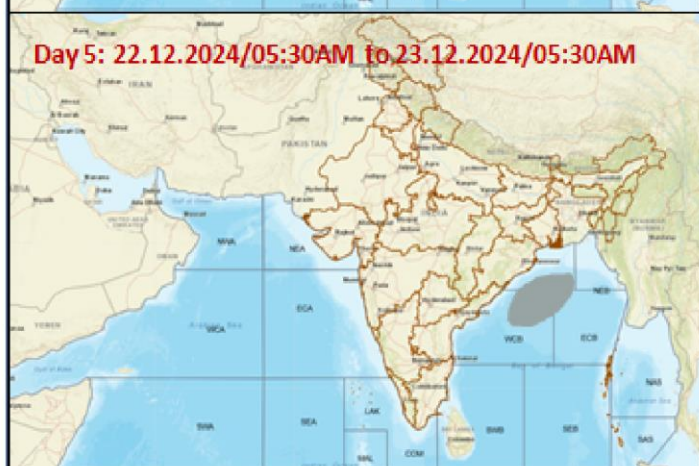
**Day 3: 20.12.2024/05:30AM to 21.12.2024/05:30AM**



**Day 4: 21.12.2024/05:30AM to 22.12.2024/05:30AM**



**Day 5: 22.12.2024/05:30AM to 23.12.2024/05:30AM**



**Squally Weather with wind speed 35-45 kmph gusting to 55 kmph**

**Squally wind with speed 45-55 kmph gusting to 65 kmph**

**Fishermen are advised not to venture into the marked areas.**

## Weather Realised (past 24 hours) & forecast (during 18<sup>th</sup> Dec. to 21<sup>th</sup> Dec. 2024) over Delhi/NCR

### Past Weather:

There has been a rise in minimum temperature upto 02°C over Delhi/NCR during past 24hr. The Maximum and Minimum temperature over Delhi is in the range of 21 to 24°C and 05 to 08°C respectively. The minimum temperature was below normal upto 01 to 03°C and maximum temperature was above normal upto 02°C over most places. Dense fog reported at Safdarjung airport. Safdarjung airport recorded lowest visibility 50m during 0630 hours to 0700 hours IST which improved thereafter becoming 100m at 0730 hours IST. Palam airport recorded lowest visibility 300 m during 0600 hours to 0930 hours IST which improved thereafter becoming 400m at 1000 hours IST. Mainly smog/ dense fog condition with predominant surface wind from variable direction with wind speed reaching 04 to 06 kmph prevailed during past 24hr. Mainly smog condition with wind speed less than 06 kmph variable direction prevailed over the region in the forenoon today.

### Weather Forecast:

**18.12.2024:** Mainly clear sky. The predominant surface wind is likely to be variable direction with wind speed less than 06 kmph till evening. It would decrease thereafter becoming less than 04 kmph from variable direction during night. Smog/shallow fog is likely in the evening/night.

**19.12.2024:** Mainly clear sky. The predominant surface wind is likely to be from southeast direction with speed less than 04 kmph during morning hours. Dense fog over most of the places with very dense fog isolated places is likely in the morning hours. The wind speed will increase thereafter becoming less than 06 kmph from southeast direction during afternoon. It will decrease thereafter becoming less than 04 kmph from east direction during evening and night. Smog/shallow fog is likely in the evening/night.

**20.12.2024:** Mainly clear sky. The predominant surface wind is likely to be from southeast direction with speed less than 04 kmph during morning hours. Dense fog over most of the places with very dense fog isolated places is likely in the morning hours. The wind speed will gradually increase becoming 04-06 kmph from north direction during afternoon. It will decrease thereafter becoming less than 04 kmph from variable direction during evening and night. Smog/shallow fog is likely in the evening/night.

**21.12.2024:** Mainly clear sky. The predominant surface wind is likely to be from north direction with wind speed less than 04 kmph during morning hours. Smog/moderate to dense fog is likely in the morning. The wind speed will increase thereafter becoming 08-10 kmph from northwest direction during afternoon. It will gradually decrease becoming less than 06 kmph from northwest direction during evening and night. Smog/shallow is likely in the evening/night.

### Impact & Action Suggested due to

- ❖ **Isolated heavy to very heavy rainfall** over Tamil Nadu & Rayalaseema on 18<sup>th</sup> and Coastal Andhra Pradesh & Yanam on 18<sup>th</sup> & 19<sup>th</sup> December.

#### Impact Expected

- ❖ Localized Flooding of roads, water logging in low lying areas and closure of underpasses mainly in urban areas of the above region.
- ❖ Occasional reduction in visibility due to heavy rainfall.
- ❖ Disruption of traffic in major cities due to water logging in roads leading to increased travel time.
- ❖ Minor damage to kutchha roads.
- ❖ Possibilities of damage to vulnerable structure.
- ❖ Localized Landslides/Mudslides
- ❖ Damage to horticulture and standing crops in some areas due to inundation.
- ❖ It may lead to riverine flooding in some river catchments (for riverine flooding please visit Web page of CWC).

### B. Action Suggested



- ❖ Check for traffic congestion on your route before leaving for your destination.
- ❖ Follow any traffic advisories that are issued in this regard.
- ❖ Avoid going to areas that face the water logging problems often.
- ❖ Avoid staying in vulnerable structure.

#### **Impact expected due to dense/very dense fog in the night /morning hour:**

- ❖ 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 wave/severe cold wave conditions over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Punjab, Haryana, Chandigarh, Rajasthan, Madhya Pradesh and Telangana**

- 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 wollen 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.

#### **Agromet advisories for Heavy Rainfall / Cold Wave likely over various parts of the country**

- Drain out excess water from rice, sugarcane, cotton, turmeric, vegetables, and other standing crop fields, as well as coconut and banana orchards in north **Tamil Nadu**; from rice nurseries, pigeon pea, green gram, black gram, sesame and other standing crop fields and vegetables in **South Coastal Andhra Pradesh** and **Rayalaseema**.
- Keep the harvested produce in safer places or cover the produce with tarpaulin sheets in the fields.
- Provide mechanical support to horticultural crops and staking to vegetables.
- In **Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana** and **Rajasthan** apply light and frequent irrigation to the standing crops in the evening to protect the crops from low-temperature stress or cold injuries. Use mulching and cover vegetable nurseries and young fruit plants with straw/polythene sheets to maintain optimum soil temperature.

#### **Livestock and Fishery**

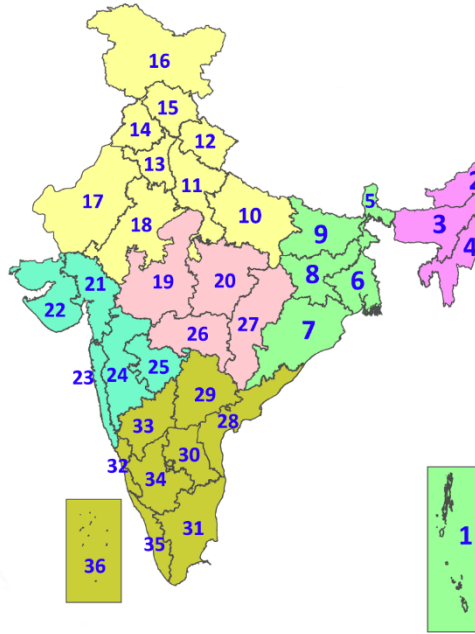
- Keep the animals inside the shed during heavy rainfall and provide balanced feed.
- Store the feed and fodder at safer place to avoid spoilage from rainfall.
- Check and disinfect poultry houses to prevent disease outbreaks due to dampness.
- Check the huts and other weaker structures before relocation of the animals.
- Remove excess water from fish ponds to avoid losses of fish (if feasible).
- To protect from cold, keep cattle inside the sheds during night and provide dry bedding. Also keep the chicks warm by providing artificial light in the poultry sheds.

#### **Legends & abbreviations:**

- ❖ **Heavy Rain:**64.5-115.5mm; **Very Heavy Rain:**115.6-204.4mm; **Extremely Heavy Rain:** >204.4mm.
- ❖ **Obsy:** Observatory; **AWS:** Automatic Weather Station; **ARG:** Automatic Rain Gauge; **dist:** District; **NH:** National Highway; **KVK:** Krishi Vigyan Kendra; **DVC:** Damodar Valley Corporation; **PTO:** Part Time Office, **Aero:** Aerodrome, **IAF:** Indian Air Force.
- ❖ **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 Marathawada.
  - **South India:** Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, Coastal Karnataka, North Interior Karnataka, South Interior Karnataka, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal and Lakshadweep.

## LEGENDS

1. अंडमान और निकोबार द्वीपसमूह
2. अरुणाचल प्रदेश
3. असम और मेघालय
4. नागालैंड, मणिपुर, मिजोरम और त्रिपुरा
5. उप-हिमालयी पश्चिम बंगाल और सिक्किम
6. गंगीय पश्चिम बंगाल
7. ओडिशा
8. झारखंड
9. बिहार
10. पूर्वी उत्तर प्रदेश
11. पश्चिम उत्तर प्रदेश
12. उत्तराखंड
13. हरियाणा, चंडीगढ़ और दिल्ली
14. पंजाब
15. हिमाचल प्रदेश
16. जम्मू और कश्मीर और लद्दाख
17. पश्चिम राजस्थान
18. पूर्वी राजस्थान
19. पश्चिम मध्य प्रदेश
20. पूर्वी मध्य प्रदेश
21. गुजरात
22. सौराष्ट्र
23. कोंकण और गोवा
24. मध्य महाराष्ट्र
25. मराठवाड़ा
26. विदर्भ
27. छत्तीसगढ़
28. तटीय आंध्र प्रदेश और यनम
29. तेलंगाना
30. रायलसीमा
31. तमिलनाडु, पुडुचेरी और कराईकल
32. तटीय कर्नाटक
33. आंतरिक उत्तरी कर्नाटक
34. आंतरिक दक्षिणी कर्नाटक
35. केरल और माहे
36. लक्षद्वीप



1. Andaman & Nicobar Islands
2. Arunachal Pradesh
3. Assam & Meghalaya
4. Nagaland, Manipur, Mizoram & Tripura
5. Sub-Himalayan West Bengal & Sikkim
6. Gangetic West Bengal
7. Odisha
8. Jharkhand
9. Bihar
10. East Uttar Pradesh
11. West Uttar Pradesh
12. Uttarakhand
13. Haryana, Chandigarh & Delhi
14. Punjab
15. Himachal Pradesh
16. Jammu & Kashmir and Ladakh
17. West Rajasthan
18. East Rajasthan
19. West Madhya Pradesh
20. East Madhya Pradesh
21. Gujarat
22. Saurashtra
23. Konkan & Goa
24. Madhya Maharashtra
25. Marathwada
26. Vidarbha
27. Chhattisgarh
28. Coastal Andhra Pradesh & Yanam
29. Telangana
30. Rayalaseema
31. Tamilnadu, Puducherry & Karaikal
32. Coastal Karnataka
33. North Interior Karnataka
34. South Interior Karnataka
35. Kerala & Mahe
36. 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)



Fog



Heavy Snow



Cold Wave



Heavy Rain



Dust Storm



Cold Day



Very Heavy Rain



Heat Wave



Ground Frost



Extremely Heavy Rain



Warm Night



Thunder & Lightning



Hot Day



Hailstorm



Hot & Humid



Dust Raising Winds



Strong Surface Winds

### COLOUR CODED WARNING

No Warning (No Action)
Watch (Be Aware)
Alert (Be Prepared To Take Action)
Warning (Take Action)

### Probabilistic Forecast

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

\* Red colour warning does not mean "Red Alert", Red colour warning means "Take Action".  
Forecast and Warning for any day is valid from 0830 hours IST of day till 0830 hours IST of next day.  
For more details, kindly visit <https://mausam.imd.gov.in> or contact: 011-2434-4599  
(Service to the Nation since 1875)

## DEFINITION/CRITERIA

### Rain/ Snow \*

Heavy: 64.5 to 115.5 mm/cm \*  
Very Heavy: 115.6 to 204.4 mm/cm\*  
Extremely Heavy: > 204.4 mm/cm \*

### Heat Wave

When maximum temperature of a station reaches  $\geq 40^{\circ}\text{C}$  for plains and  $\geq 30^{\circ}\text{C}$  for hilly regions  
(a) Based on Departure from normal

Heat Wave: Maximum Temperature Departure from normal  $4.5^{\circ}\text{C}$  to  $6.4^{\circ}\text{C}$ .

Severe Heat Wave: Maximum Temperature Departure from normal  $\geq 6.5^{\circ}\text{C}$

(b). Based on Actual maximum temperature

Heat Wave: When actual maximum temperature  $\geq 45^{\circ}\text{C}$ .

Severe Heat Wave: When actual maximum temperature  $\geq 47^{\circ}\text{C}$

(c) Criteria for heat wave for coastal stations

When maximum temperature departure is  $> 4.5^{\circ}\text{C}$  from normal. Heat Wave may be described provided maximum temperature  $\geq 37^{\circ}\text{C}$

### Warm Night

When maximum temperature remains  $40^{\circ}\text{C}$

Warm Night: When minimum temperature departure  $4.5^{\circ}\text{C}$  to  $6.4^{\circ}\text{C}$ .

Severe Warm Night: When minimum temperature departure  $> 6.4^{\circ}\text{C}$ .

### 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

### Thunderstorm

Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)

### Dust/Sand Storm

An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.

### Frost

Ice deposits on ground

Air temperature  $\leq 4^{\circ}\text{C}$  ( over Plains)

### Squall

A strong wind that rises suddenly, lasts for atleast 1 minute.

Moderate: Wind speed 52-61 kmph

Severe: Wind speed 62-87 kmph

Very Severe: Wind speed  $> 87$  kmph

### Sea State

Effect of various waves in the sea over specific area

Rough to very rough: Wind speed 41-62 kmph (22-33 knots) & Wave height 2.5-6 metre

High to very high: Wind speed 63-117 kmph ( 34-63 knots) & Wave height 6-14 metre

Phenomenal: Wind speed  $> 117$  kmph ( $> 63$  knots) & Wave height  $> 14$  metre

### Cyclone

Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)

Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)

Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots)

Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots)

Super Cyclone Strom: Wind speed  $> 220$  kmph ( $> 119$  knots)

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