



Government of India
Ministry of Earth Sciences
India Meteorological Department



Press Release

Date: 31st December, 2024

Time of Issue: 1300 hours IST

Subject: (i) Wet spell over Western Himalayan Region during next one week and over plains of northwest India during 04th to 06th January 2025.

(ii) Dense fog and cold day conditions likely to continue over parts of Northwest India during next 24 hours and improve thereafter.

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

- ❖ **Cold day to severe cold day conditions** observed in some parts of Punjab, Haryana, Chandigarh & Delhi and in isolated pockets of Himachal Pradesh and Rajasthan.
- ❖ **Cold wave conditions** observed in isolated pockets of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Himachal Pradesh.
- ❖ **Very dense fog (visibility < 50 m)** reported in isolated pockets of Chandigarh, East Rajasthan, Chhattisgarh, Sub-Himalayan West Bengal; **dense fog (visibility 50-200 m)** reported in isolated pockets of Punjab, West Uttar Pradesh, Assam & Meghalaya, Tripura.
- ❖ **Visibility reported (< 50 m)** (in meter): **Chandigarh** 00; **East Rajasthan:** Sikar 00; **Chhattisgarh:** Ambikapur 00; **Sub-Himalayan West Bengal:** Cooch Behar 00; **Punjab:** Amritsar 50; **Assam & Meghalaya:** Barapani 50, Tezpur 100; **Tripura:** Agartala 50; **West Uttar Pradesh:** Moradabad 100
- ❖ **Heavy to very heavy rainfall** recorded at isolated places over south Tamil Nadu.

Weather Systems, Forecast and warning (Annexure II & III):

- ❖ A **Western disturbance** as a cyclonic circulation over east Afghanistan in lower tropospheric levels. Another **fresh western disturbance** is likely to affect Northwest India from 4th January, 2025. It is very likely to cause
 - ✓ Light isolated to scattered rainfall/snowfall over Western Himalayan region from 01st to 03rd and scattered to fairly widespread rainfall/snowfall over the region from 04th to 06th January. **Heavy rainfall/snowfall** at isolated places also likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 05th January 2025.
 - ✓ Light isolated to scattered rainfall also likely over the plains of Northwest India during 04th to 06th January 2025.
- ❖ A **cyclonic circulation** lies over Equatorial Indian Ocean & adjoining southwest Bay of Bengal in lower tropospheric levels. It is very likely to cause light to moderate rainfall accompanied with thunderstorm, lightning very likely at a few places with **heavy rainfall** at isolated places over south Tamil Nadu on 31st 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 many parts of Jammu, Kashmir & Ladakh; **3-9°C** over many parts of Northwest India; **9-14°C** over many parts of Central India, **14-18°C** over many parts of West & East India. Today, the lowest minimum temperature of 3.5°C is reported at **Uttarlai IAF (West Rajasthan)** over the plains of the country.
- ❖ There has been a fall in minimum temperature by 1-4°C over many parts of East Madhya Pradesh, Maharashtra and Odisha, in some parts of West Rajasthan, in isolated places over Jammu-Kashmir-Ladakh during past 24 hours and rise in minimum temperature by 1-2°C over some parts of West Madhya Pradesh, in isolated places over East Rajasthan & Telangana.
- ❖ Minimum temperatures are **below normal (-1°C to -3°C)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, West Rajasthan. These are **markedly above normal (5°C or more)** at many places over Odisha; at isolated places over Bihar, Madhya Maharashtra; **appreciably above normal (3°C to 5°C)** at many

places over Telangana; at a few places over Uttar Pradesh, Vidarbha, East Madhya Pradesh; at isolated places over Marathwada, Konkan & Goa, West Madhya Pradesh, Chhattisgarh; **above normal (1°C to 3°C)** at many places over Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam; at isolated places over Rayalaseema, North Interior Karnataka, East Rajasthan, Gujarat state, Gangetic West Bengal 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 24 hours and gradual rise by 3-5°C thereafter.
- ❖ No significant change in minimum temperatures likely over plains of Northwest India during next 24 hours and gradual rise by 2-4°C thereafter.
- ❖ No significant change in minimum temperatures likely over Central India during next 5 days.
- ❖ Fall in minimum temperatures by 2-3°C likely over East India during next 24 hours and no significant change thereafter.
- ❖ Fall in minimum temperatures by 2-3°C likely over Maharashtra during next 3 days and no significant change thereafter.
- ❖ Rise in minimum temperatures by 2-3°C likely over Gujarat state during next 5 days.

Cold Wave Warnings:

Cold wave conditions very likely in isolated pockets of Himachal Pradesh on 31st December.

Cold Day Warnings:

Cold Day to severe cold day conditions very likely in isolated pockets of Punjab, Haryana, Chandigarh and Rajasthan on 31st December.

Cold Day conditions very likely in some parts of West Uttar Pradesh on 31st December; in isolated pockets of West Uttar Pradesh, Punjab & Haryana-Chandigarh on 01st January; Himachal Pradesh on 31st December; East Uttar Pradesh on 31st December & 01st January.

Dense Fog Warnings:

Dense fog conditions very likely to prevail during late night/early morning hours in isolated pockets of Himachal Pradesh, Uttarakhand, Punjab, Haryana-Chandigarh, Uttar Pradesh, Rajasthan, Odisha, Sub-Himalayan West Bengal & Sikkim till 01st January; Assam & Meghalaya & Nagaland, Manipur, Mizoram & Tripura till 05th January.

Ground Frost Warnings:

Ground Frost conditions very likely in isolated pockets of Arunachal Pradesh, Assam & Meghalaya & Nagaland, Manipur, Mizoram & Tripura on 31st December & 01st January.

Fishermen Warnings (Annexure V):

Fishermen are advised not to venture into Gulf of Mannar & adjoining Comorin area during 31st December-04th January; southwest Bay of Bengal & along and off Sri Lanka coast on 31st December & 01st January; adjoining parts of southeast Bay of Bengal on 31st December; Maldives area during 01st-04th January; southern parts of southeast Arabian sea on 03rd & 04th January.

iii. Weather conditions and forecast over Delhi/NCR during 31st Dec. 2024 to 03rd Jan. 2025 (Annexure VI)

For more details, kindly refer National Weather Bulletin:

https://mausam.imd.gov.in/responsive/all_india_forecast_bulletin.php

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

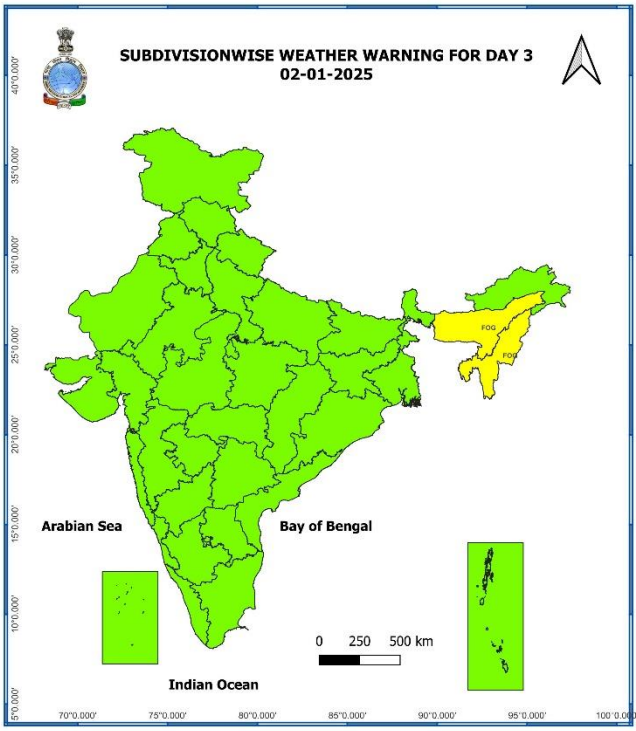
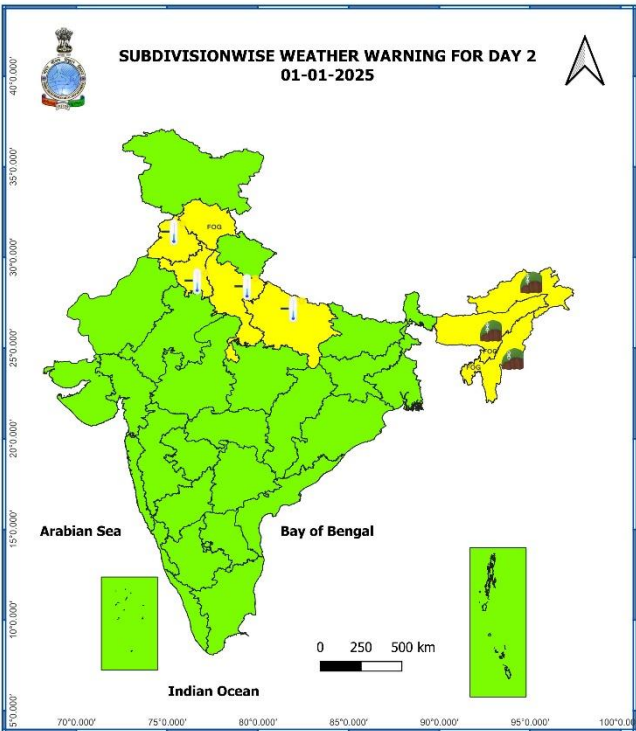
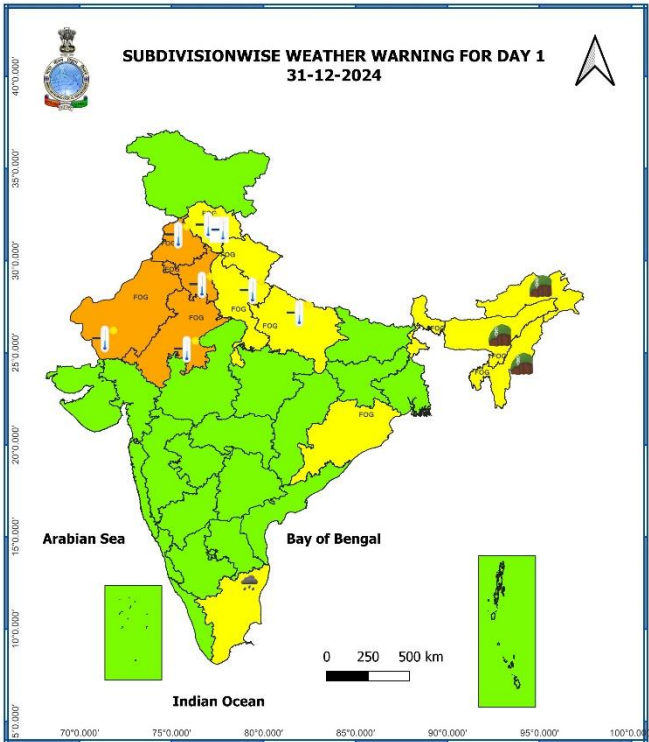
ANNEXURE I

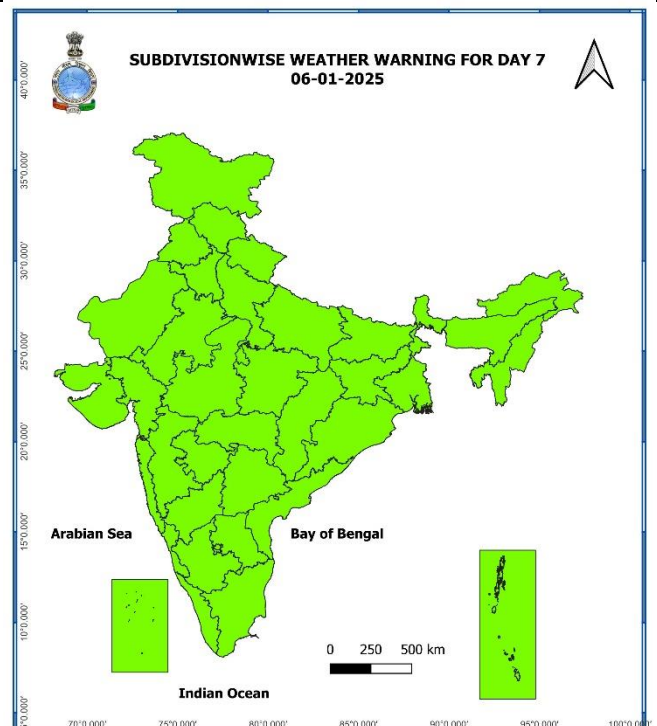
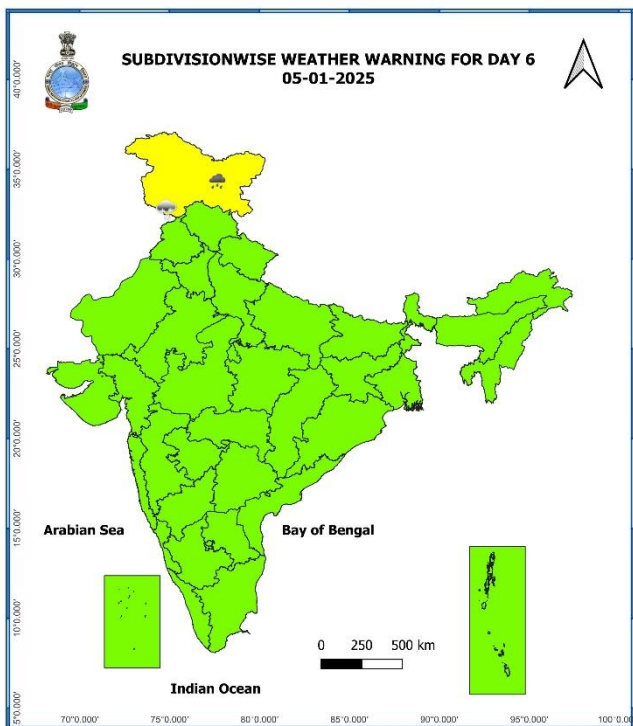
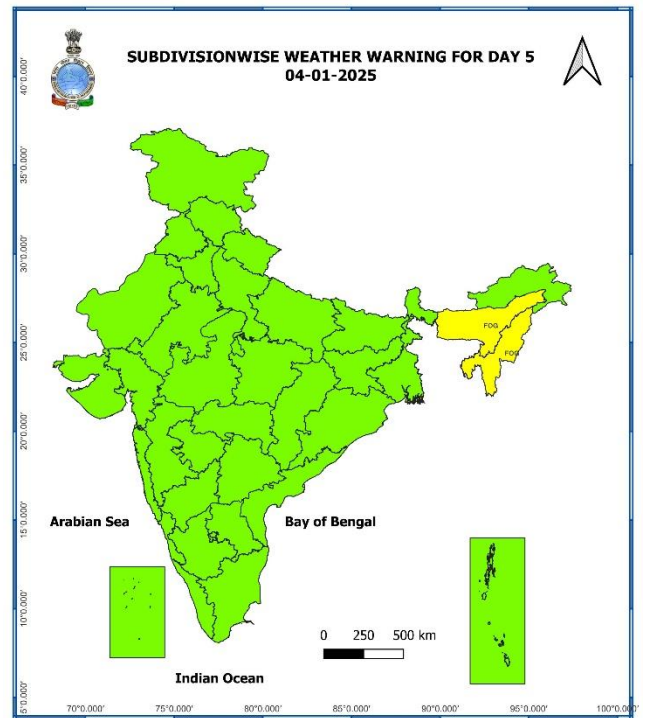
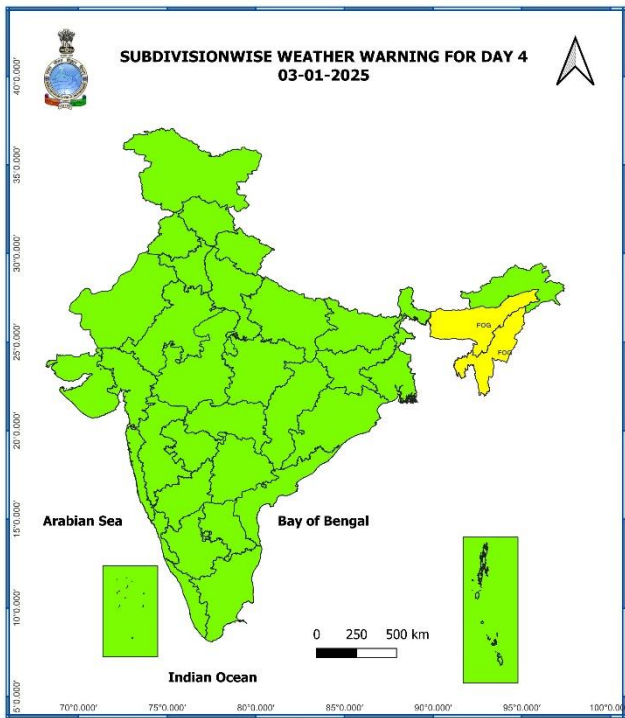
Significant Rainfall recorded during past 24 hours till 0830 hours IST of today 31.12.2024 (in cm):

- ❖ **Tamilnadu, Puducherry& Karaikal:** Oothu (dist Tirunelveli) 14, Nalumukku (dist Tirunelveli) 13, Kakkachi (dist Tirunelveli) 12, Manjolai (dist Tirunelveli) 10

7 Days Rainfall Forecast								
S. No.	Subdivision	31-Dec	01-Jan	02-Jan	03-Jan	04-Jan	05-Jan	06-Jan
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1	ANDAMAN & NICOBAR ISLANDS	SCT	ISOL	ISOL	ISOL	ISOL	SCT	FWS
2	ARUNACHAL PRADESH	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
3	ASSAM & MEGHALAYA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
4	NAGALAND, MANIPUR, MIZORAM & TRIPURA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
5	SUB-HIMALAYAN WEST BENGAL & SIKKIM	DRY	DRY	DRY	DRY	DRY	DRY	DRY
6	GANGETIC WEST BENGAL	DRY	DRY	DRY	DRY	DRY	DRY	DRY
7	ODISHA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
8	JHARKHAND	DRY	DRY	DRY	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	ISOL
12	UTTARAKHAND	DRY	DRY	DRY	DRY	DRY	SCT	SCT
13	HARYANA CHANDIGARH & DELHI	DRY	DRY	DRY	DRY	DRY	SCT	SCT
14	PUNJAB	DRY	DRY	DRY	DRY	ISOL	SCT	SCT
15	HIMACHAL PRADESH	ISOL	ISOL	ISOL	ISOL	SCT	WS	FWS
16	JAMMU & KASHMIR AND LADAKH	ISOL	SCT	SCT	SCT	FWS	WS	SCT
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	DRY	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	DRY	DRY	DRY	DRY	DRY
27	CHHATTISGARH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
28	COASTAL ANDHRA PRADESH & YANAM	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY
29	TELANGANA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
30	RAYALASEEMA	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY
31	TAMILNADU PUDUCHERRY & KARAİKAL	ISOL	ISOL	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	DRY	DRY	DRY	DRY	DRY
35	KERALA & MAHE	ISOL	ISOL	DRY	DRY	DRY	DRY	ISOL
36	LAKSHADWEEP	SCT	SCT	DRY	DRY	DRY	DRY	SCT

- 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

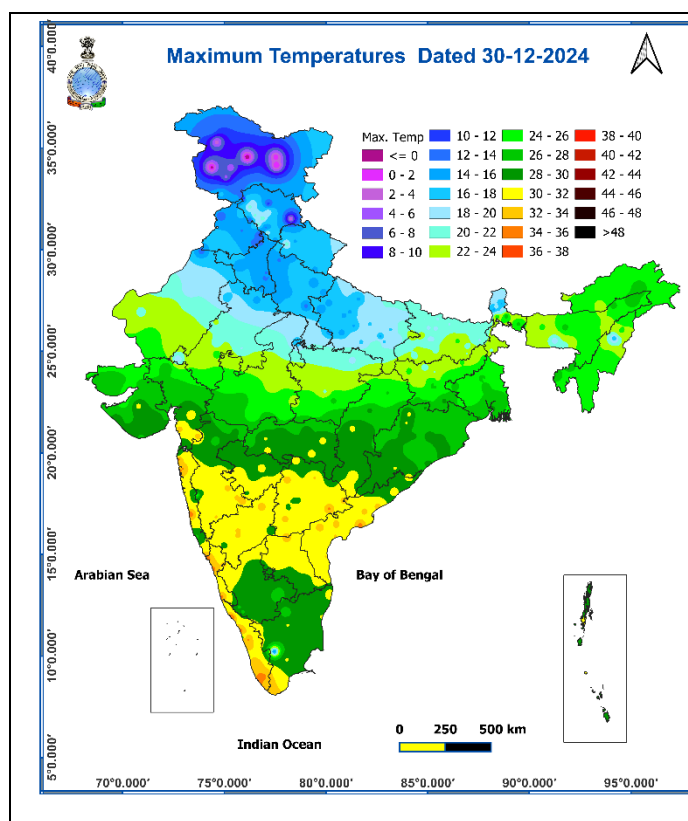


Fig. 2: Departure of Maximum Temperatures

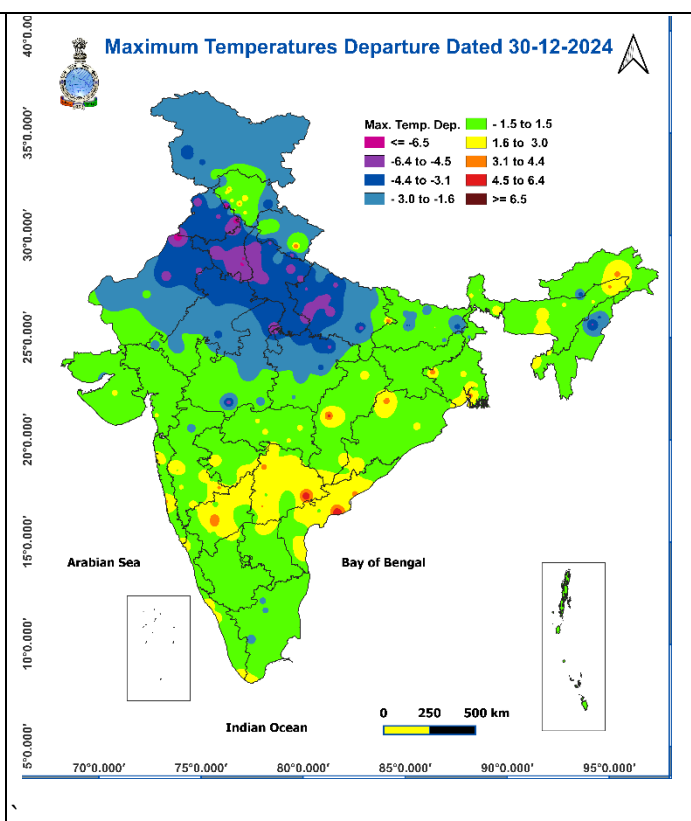


Fig. 3: Minimum Temperatures

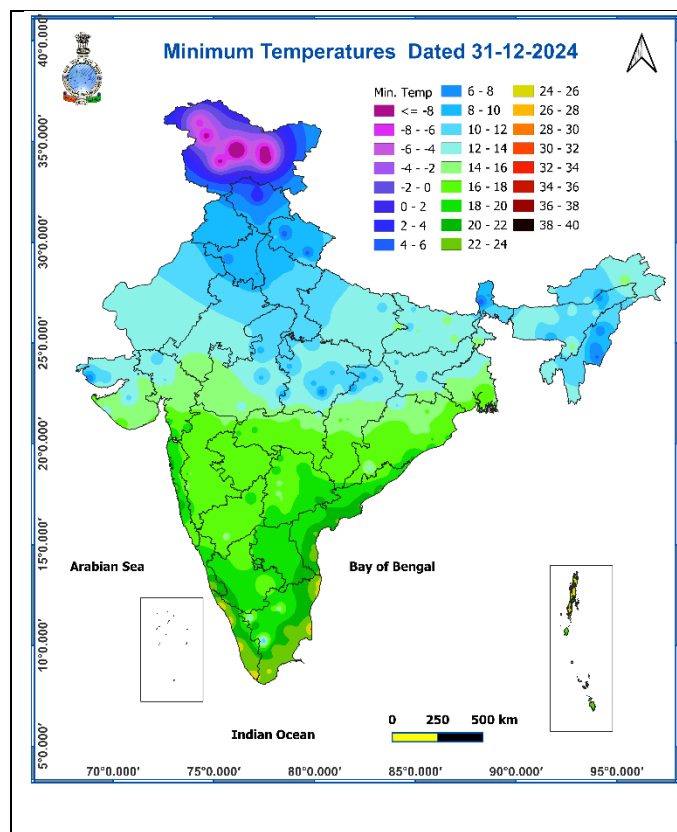
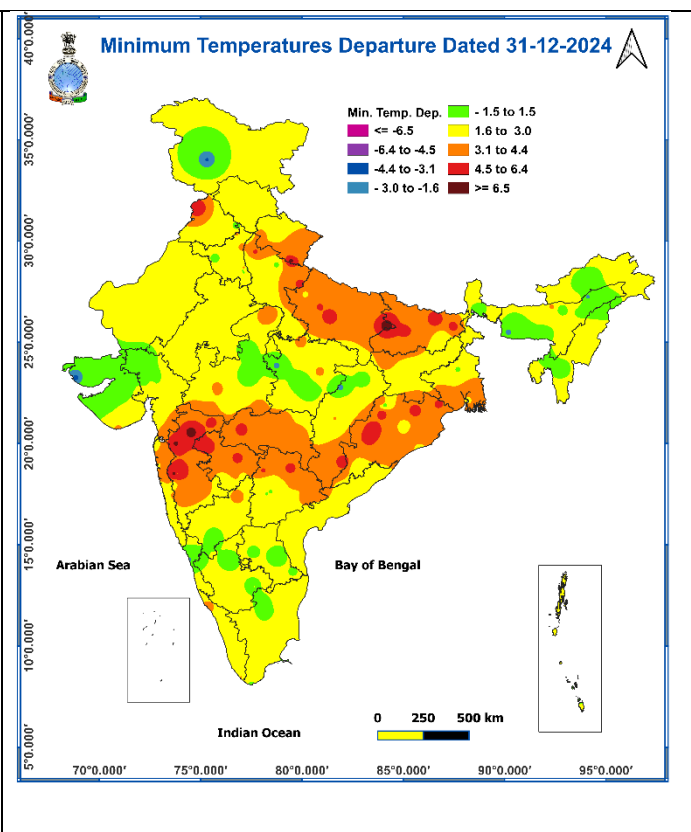


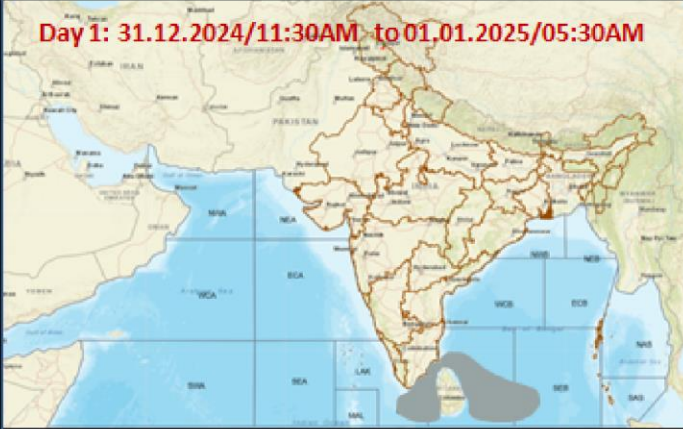
Fig. 4: Departure of Minimum Temperatures



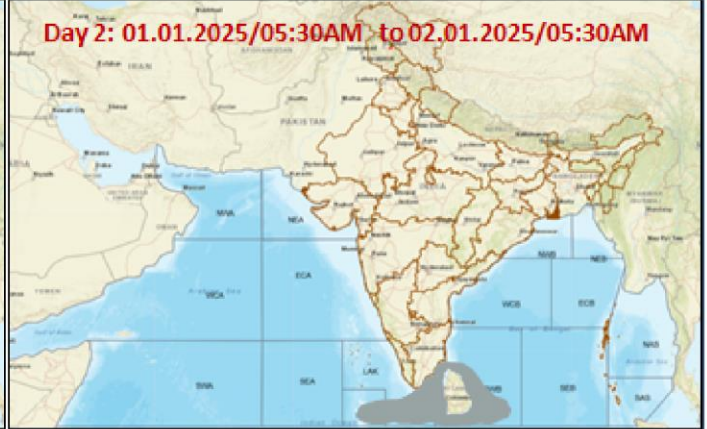


Fishermen Warning Graphics

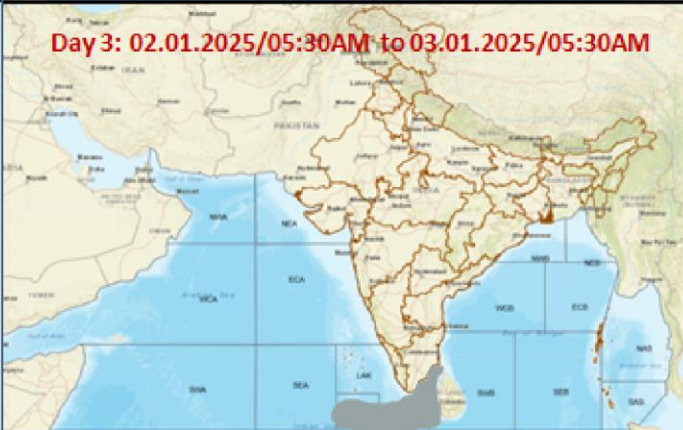
Day 1: 31.12.2024/11:30AM to 01.01.2025/05:30AM



Day 2: 01.01.2025/05:30AM to 02.01.2025/05:30AM



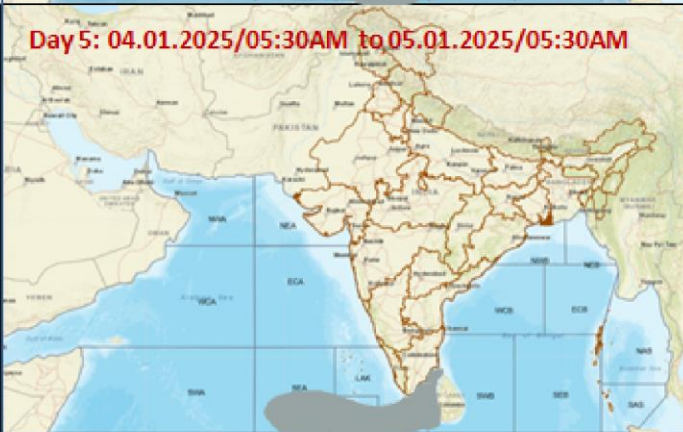
Day 3: 02.01.2025/05:30AM to 03.01.2025/05:30AM



Day 4: 03.01.2025/05:30AM to 04.01.2025/05:30AM



Day 5: 04.01.2025/05:30AM to 05.01.2025/05:30AM



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

Fishermen are advised not to venture into the marked areas.

Weather forecast over Delhi/NCR during 31st Dec. 2024 to 03rd Jan. 2025**Past Weather:**

There has been a slight fall in minimum temperature and fall in maximum temperature upto 03°C over Delhi/NCR during past 24hr. The Maximum and Minimum temperatures over Delhi are in the range of 13 to 15°C and 7 to 10°C, respectively. The minimum temperature was above normal upto 01 to 03°C and the maximum temperature was below normal up to 05 to 07°C over most places. Shallow fog was reported at Safdarjung and Palam airports. Safdarjung airport recorded the lowest visibility 900 m at 0230 hours IST which thereafter improved becoming 1000m at 0700 hours IST. Palam airport recorded the lowest visibility of 800 m from 0900 hours to 1030 hours IST. Mainly shallow fog conditions with predominant surface wind from the west direction with wind speed reaching 10 to 14 mph prevailed during past 24 hr. Mainly mist conditions with wind speed less than 08 kmph west direction prevailed over the region in the forenoon today.

Weather Forecast:

31.12.2024: Mainly clear sky and cold day conditions at isolated places. The predominant surface wind will likely be in the northwest direction with a wind speed of less than 10 kmph till evening. It would decrease thereafter becoming less than 06 kmph from the northwest direction during the night. Smog/shallow fog is likely in the evening/night.

01.01.2025: Mainly clear sky. The predominant surface wind is likely to be from the northwest direction with a speed of less than 06 kmph during morning hours. Smog/ shallow fog in most of the places and moderate fog in isolated places is likely in the morning. The wind speed will gradually increase becoming 16-20 kmph from the northwest direction during the afternoon. It will decrease thereafter becoming less than 10 kmph from the northwest direction during evening and night. Smog/shallow fog is likely in the evening/night.

02.01.2025: Partly cloudy sky. The predominant surface wind is likely to be from the northwest direction with a wind speed less than 08 kmph during morning hours. Smog/ shallow fog in most of the places and moderate fog in isolated places is likely in the morning. The wind speed will increase thereafter becoming 14-18 kmph from northwest direction during afternoon. It will gradually decrease becoming less than 08 kmph from northwest direction during evening and night. Smog/shallow fog is likely in the evening/night.

03.01.2025: Partly cloudy sky. The predominant surface wind is likely to be from northwest direction with wind speed less than 08 kmph during morning hours. Smog/ shallow fog in most of the places and moderate fog in isolated places is likely in the morning. The wind speed will increase thereafter becoming 12-16 kmph from northwest direction during afternoon. It will gradually decrease becoming less than 08 kmph from northwest direction during evening and night. Smog/shallow fog is likely in the evening/night.

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 Day/Severe Cold day conditions

- ❖ 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 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 likely impact of Heavy Rainfall / Cold Wave/ Ground Frost

- Drain out excess water from rice, sugarcane, cotton, turmeric, vegetables, and other standing crop fields, as well as coconut and banana orchards in **Tamil Nadu**.
- Keep the harvested produce in safer places or cover the produce with tarpaulin sheets in the fields.
- In **Arunachal Pradesh, Meghalaya, Nagaland** and **Himachal Pradesh**, apply light and frequent irrigation to the standing crops in the evening to protect them 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

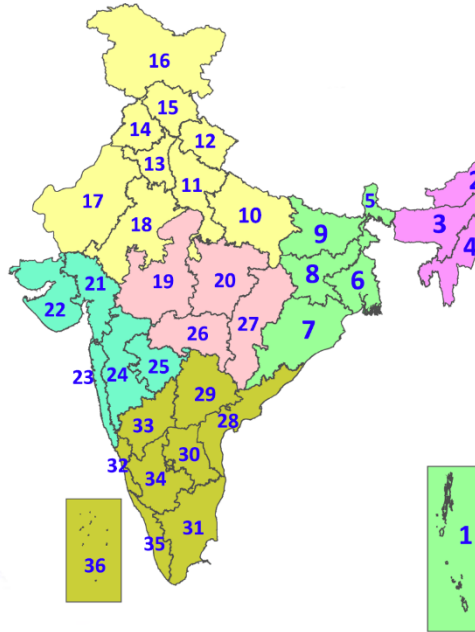
- Keep the animals inside the shed during heavy rainfall/ hailstorms and provide them with balanced feed.
- Store feed and fodder in a safe place to prevent spoilage.
- To protect from cold, keep cattle inside the sheds during night and provide dry bedding. Also keep the chicks warm by providing artificial 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

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(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°C to 6.4°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°C

Warm Night: When minimum temperature departure 4.5°C to 6.4°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°C to -6.4°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°C to -6.4°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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