



Government of India  
Ministry of Earth Sciences  
India Meteorological Department



Press Release  
Date: 02<sup>nd</sup> January, 2024  
Time of Issue: 1300 hours IST

**Subject: 1) 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.**

**2) Cold Day to Severe Cold Day conditions likely to continue over many parts of Punjab, Haryana, Uttar Pradesh and Rajasthan during next 3 days and decrease thereafter.**

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

- **Minimum temperatures:** The Minimum temperatures are in the range of 6-9°C over most parts of Punjab, Haryana-Chandigarh-Delhi, West Uttar Pradesh and Rajasthan and in range of 10-12°C over north Madhya Pradesh, Bihar, Jharkhand, West Bengal & Sikkim and north Chhattisgarh. **These are above normal by 2-4°C** over many parts of Punjab, Haryana-Chandigarh-Delhi, Madhya Pradesh, Chhattisgarh and Gujarat.
- **Fog: Very dense fog occurred (visibility < 50 m)** in isolated pockets of Punjab, Uttarakhand, Uttar Pradesh, North Rajasthan, West Madhya Pradesh and Odisha; **Dense fog (visibility 50-200 m)** in isolated places over Sub-Himalayan West Bengal & Sikkim, Himachal Pradesh, Meghalaya, Tripura and Bihar.
- **Visibility Recorded at 0530 hours IST ( $\leq 200$  meters):** **Uttarakhand:** Deharadun-00; **Punjab:** Patiala-00; Haryana: Ambala-200; **Uttar Pradesh:** Bareilly, Bahraich, Lucknow, Varanasi-00 each; Gorakhpur -200 each; **Rajasthan:** Bikaner, Ajmer -00 each; **West Madhya Pradesh:** Bhopal-00; **Bihar:** Purnea-200.
- **Visibility Recorded at 0830 hours IST ( $\leq 200$  meters):** **Uttar Pradesh:** Bareilly-0, Lucknow & Prayagraj-50, Gorakhpur & Varanasi-25 each, Jhansi-200; **Uttarakhand:** Pantnagar-25, Nainital-50, Dehradun-200; **Rajasthan:** Bikaner-25, Jaipur & Udaipur Dabok-50 each; **Madhya Pradesh:** Bhopal-25, Ratlam-200; **Odisha:** Dhenkanal-50; **Punjab:** Ludhiana-50; **Meghalaya:** Barapani-50; **Tripura:** Agartala-50; **Himachal Pradesh:** Una-50; **Haryana:** Ambala-200; **Sub-Himalayan West Bengal & Sikkim:** Siliguri-100, Jalpaiguri & Cooch Behar-200.
- **Cold day to severe cold day conditions** prevailed at many places over Haryana and Punjab; at some places over Rajasthan, Uttar Pradesh, north Madhya Pradesh and Bihar.

**Weather Systems and Forecast & Warnings during next 5 days: (graphics in Annexure I).**

**Weather Systems:**

- Yesterday's **Low Pressure Area** over Southeast Arabian Sea & adjoining West Equatorial Indian Ocean moved nearly northwards and lay over Southeast Arabian Sea at 0830 hours IST of today, the 2nd January, 2024 with the associated cyclonic circulation extending upto mid-tropospheric levels. It is likely to move nearly north-northeastwards and become Well Marked Low Pressure Area over Southeast Arabian Sea during next 24 hours.
- A cyclonic circulation lay over southwest Bay of Bengal off south Sri Lanka coast and extends upto mid-tropospheric levels at 0830 hours IST of today, the 2nd January, 2024.
- A trough runs from central parts of Uttar Pradesh to southwest Madhya Pradesh in lower tropospheric levels.

### **Dense fog and Cold day warning:**

- **Dense to very dense fog conditions** very likely to prevail during night & morning hours in some parts over Punjab and Haryana during 02<sup>nd</sup>-05<sup>th</sup> January, 2024 and in isolated pockets thereafter for subsequent 2 days.
- **Dense to very dense fog conditions** very likely to prevail in early morning/morning hours in some parts of Rajasthan on 03<sup>rd</sup> & 04<sup>th</sup> January and in isolated pockets over north Madhya Pradesh on 03<sup>rd</sup> January, 2024.
- **Dense Fog** conditions very likely to prevail in isolated/some pockets in early morning/morning hours over Himachal Pradesh, Uttarakhand during 03<sup>rd</sup>-07<sup>th</sup>; Jammu & Kashmir, Odisha, during 03<sup>rd</sup>-05<sup>th</sup> January 2024; over Madhya Pradesh on 04<sup>th</sup>; Rajasthan on 05<sup>th</sup>; Bihar, Sub-Himalayan West Bengal & Sikkim on 03<sup>rd</sup> & 04<sup>th</sup>; Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during 03<sup>rd</sup>-06<sup>th</sup> January, 2024.
- **Cold Day to Severe Cold Day** conditions very likely to continue in many parts over Punjab and Haryana on 02<sup>nd</sup> & 03<sup>rd</sup> and in some parts on 04<sup>th</sup> and cold day conditions in isolated pockets on 05<sup>th</sup> & 06<sup>th</sup> January 2024.
- **Cold Day to Severe Cold Day** conditions very likely to continue in some parts over Rajasthan on 02<sup>nd</sup> & 03<sup>rd</sup> and in isolated pockets on 04<sup>th</sup> January, 2024.
- **Cold Day** conditions very likely to continue in isolated pockets over Uttar Pradesh on 02<sup>nd</sup> & 03<sup>rd</sup> January, 2024.

### **Rainfall Forecast:**

- Under the influence of a easterly wave and the above **Low Pressure Area**; light to moderate rainfall at some places very likely over south Tamil Nadu, south Kerala and Lakshadweep during next 3-4 days with isolated **heavy rainfall** over Lakshadweep during 03<sup>rd</sup>-05<sup>th</sup>; south Tamil Nadu and Kerala on 04<sup>th</sup> & 05<sup>th</sup> January, 2024. Isolated **very heavy rainfall** also likely over Lakshadweep on 04<sup>th</sup> January, 2023.
- Light isolated rainfall very likely over Madhya Pradesh and Chhattisgarh during 03<sup>rd</sup>-08<sup>th</sup> and over Uttar Pradesh, Bihar, Jharkhand & Odisha during 03<sup>rd</sup>-05<sup>th</sup> January, 2024.

### **Temperatures Forecast:**

- No significant change in minimum temperatures likely over East India during next 2 days and rise by 2-3°C thereafter.
- Rise by 2-3°C in minimum temperatures likely over Central India during next 3 days and no significant change thereafter.
- No significant change in minimum temperatures likely over rest parts of north India during next 5 days.

### **Fishermen Warning in association with the Low Pressure Area over Arabian Sea: (Annexure II)**

- **Day 1 (02<sup>nd</sup> Jan):** Squally weather with wind speed 40-45 kmph gusting to 55 kmph likely to prevail over Comorin area; Southwest Bay of Bengal off south Sri Lanka coast; Southeast & adjoining Southwest Arabian Sea, adjoining Lakshadweep area.
- **Day 2 (03<sup>rd</sup> Jan):** Squally weather with wind speed 40-45 kmph gusting to 55 kmph likely to prevail over Comorin area; Southwest Bay of Bengal off south Sri Lanka coast; Southeast & adjoining Eastcentral Arabian Sea and adjoining Lakshadweep area.
- **Day 3 (04<sup>th</sup> Jan):** Squally weather with wind speed 40-45 kmph gusting to 55 kmph likely to prevail over Comorin area; Southeast Arabian Sea and adjoining Eastcentral Arabian sea, adjoining Lakshadweep area.
- **Day 4 & 5 (05<sup>th</sup> & 06<sup>th</sup> Jan):** Squally weather with wind speed 40-45 kmph gusting to 55 kmph likely to prevail over Comorin area; Eastcentral and adjoining Southeast Arabian Sea.

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 north Rajasthan during next 2-3 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 in some parts over of Punjab, Haryana & Chandigarh, north Rajasthan during next 3 days.**

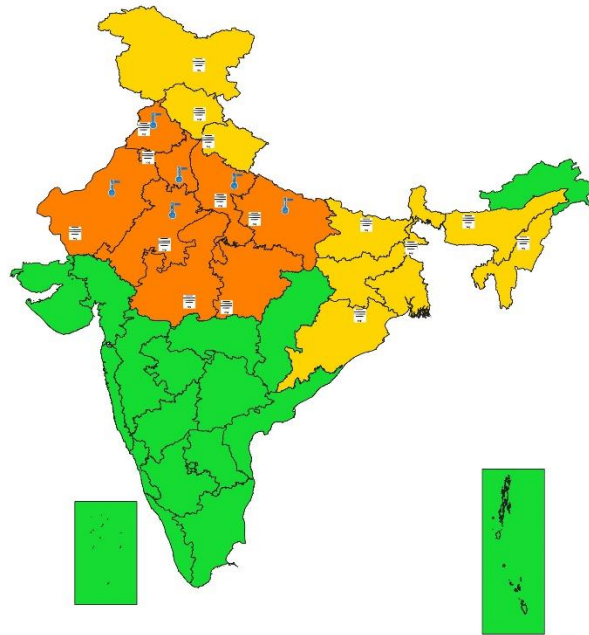
- An increased likelihood of various illnesses like flu, running/ stuffy nose or nosebleed, which usually set in or get aggravated due to prolonged exposure to cold.
- Do not ignore shivering. It is the first sign that the body is losing heat. Get Indoors.
- Frostbite can occur due to prolonged exposure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



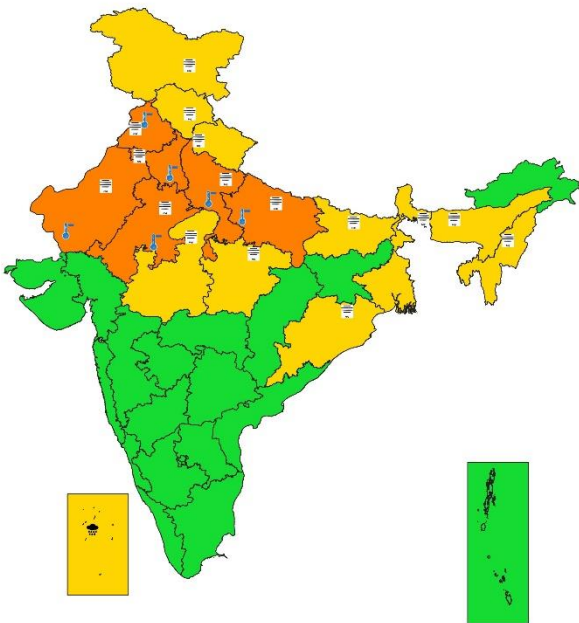
SUBDIVISIONWISE WEATHER WARNING FOR DAY 1  
02-01-2024



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



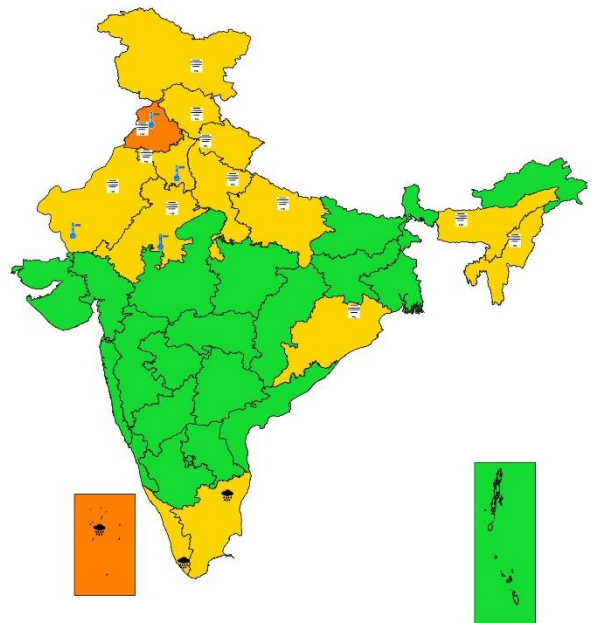
SUBDIVISIONWISE WEATHER WARNING FOR DAY 2  
03-01-2024



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



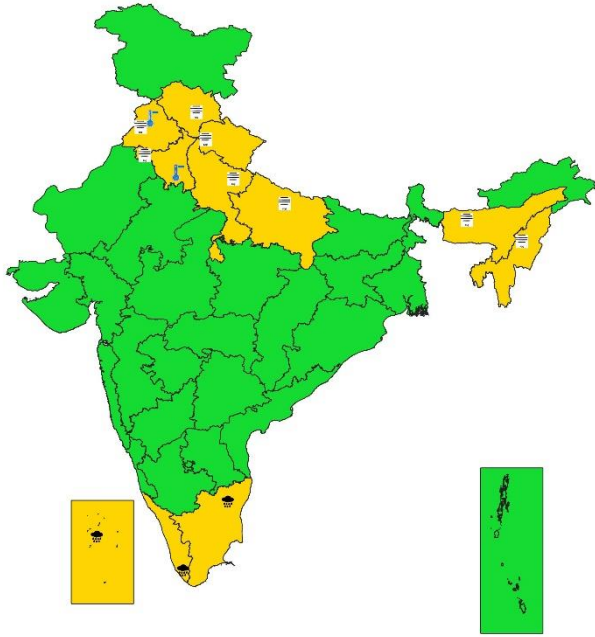
SUBDIVISIONWISE WEATHER WARNING FOR DAY 3  
04-01-2024



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



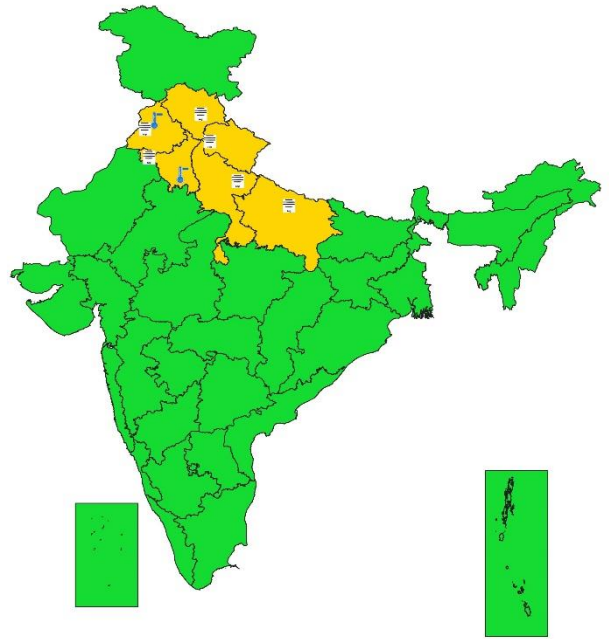
**SUBDIVISIONWISE WEATHER WARNING FOR DAY 4**  
05-01-2024



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



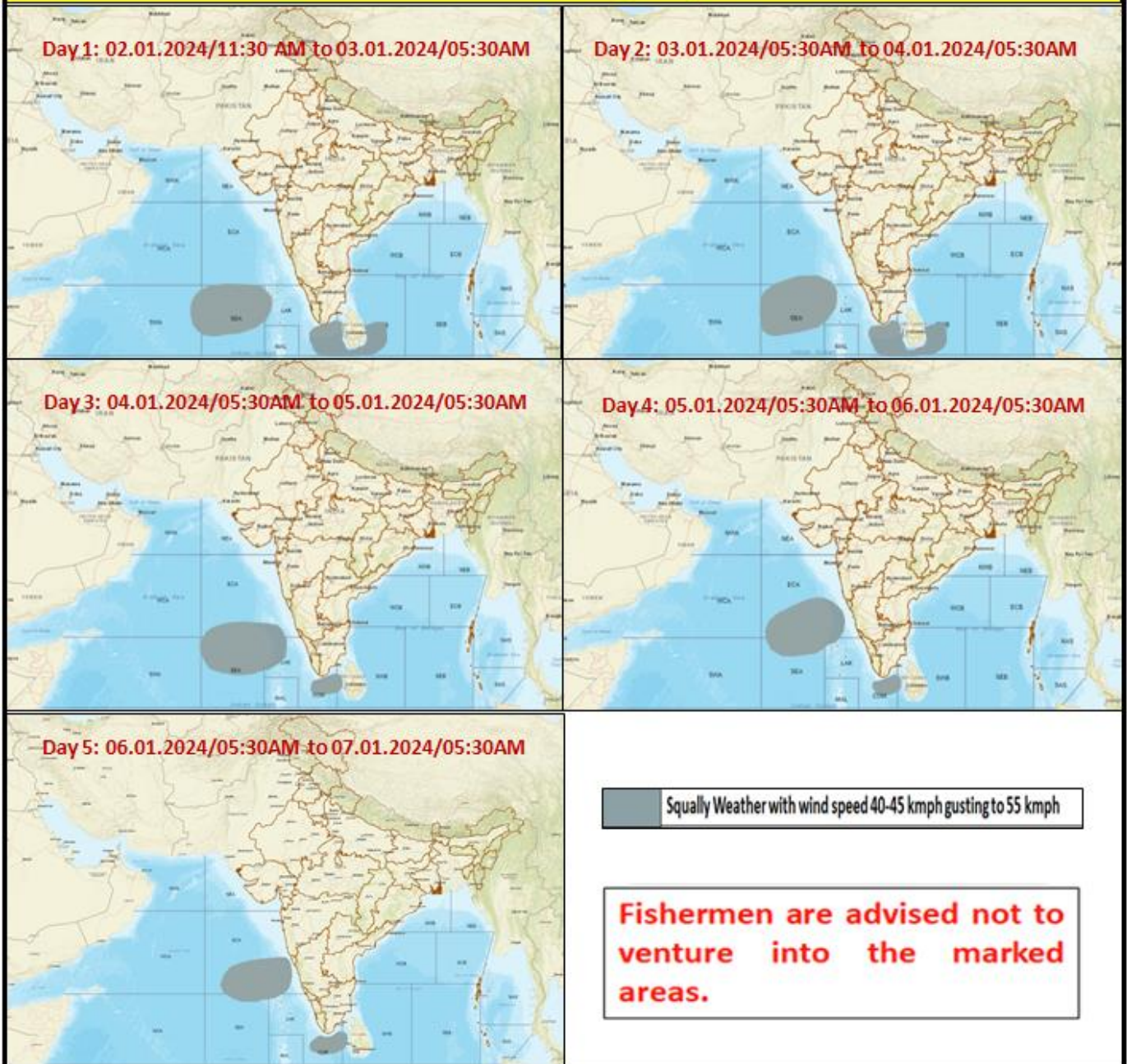
**SUBDIVISIONWISE WEATHER WARNING FOR DAY-5**  
06-01-2024



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



### Fishermen Warning Graphics



**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	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:

 <b>Cold Wave</b>	<p>When minimum temperature of a station <math>\leq 10^{\circ}\text{C}</math> for plains and <math>\leq 0^{\circ}\text{C}</math> for hilly regions.</p> <p><b>(a) Based on departure</b></p> <table border="1"><tr><td><b>Cold Wave:</b> Minimum Temperature Departure from normal <math>-4.5^{\circ}\text{C}</math> to <math>-6.4^{\circ}\text{C}</math>.</td></tr><tr><td><b>Severe Cold Wave:</b> Minimum Temperature Departure from normal <math>\leq -6.5^{\circ}\text{C}</math></td></tr></table> <p><b>(b) Based on actual Minimum Temperature (for Plains only)</b></p> <table border="1"><tr><td><b>Cold Wave :</b> When Minimum Temperature is <math>\leq 4.0^{\circ}\text{C}</math></td></tr><tr><td><b>Severe Cold Wave:</b> When Minimum Temperature is <math>\leq 2.0^{\circ}\text{C}</math></td></tr></table> <p><b>(c) For Coastal Stations</b></p> <p>When Minimum Temperature departure is <math>\leq -4.5^{\circ}\text{C}</math> &amp; actual Minimum Temperature is <math>\leq 15^{\circ}\text{C}</math></p>	<b>Cold Wave:</b> Minimum Temperature Departure from normal $-4.5^{\circ}\text{C}$ to $-6.4^{\circ}\text{C}$ .	<b>Severe Cold Wave:</b> Minimum Temperature Departure from normal $\leq -6.5^{\circ}\text{C}$	<b>Cold Wave :</b> When Minimum Temperature is $\leq 4.0^{\circ}\text{C}$	<b>Severe Cold Wave:</b> When Minimum Temperature is $\leq 2.0^{\circ}\text{C}$
<b>Cold Wave:</b> Minimum Temperature Departure from normal $-4.5^{\circ}\text{C}$ to $-6.4^{\circ}\text{C}$ .					
<b>Severe Cold Wave:</b> Minimum Temperature Departure from normal $\leq -6.5^{\circ}\text{C}$					
<b>Cold Wave :</b> When Minimum Temperature is $\leq 4.0^{\circ}\text{C}$					
<b>Severe Cold Wave:</b> When Minimum Temperature is $\leq 2.0^{\circ}\text{C}$					
 <b>Cold Day</b>	<p>When minimum temperature of a station <math>\leq 10^{\circ}\text{C}</math> for plains and <math>\leq 0^{\circ}\text{C}</math> for hilly regions</p> <p><b>Based on departure</b></p> <table border="1"><tr><td><b>Cold Day:</b> Maximum Temperature Departure from normal <math>-4.5^{\circ}\text{C}</math> to <math>-6.4^{\circ}\text{C}</math>.</td></tr><tr><td><b>Severe Cold Day:</b> Maximum Temperature Departure from normal <math>\leq -6.5^{\circ}\text{C}</math></td></tr></table>	<b>Cold Day:</b> Maximum Temperature Departure from normal $-4.5^{\circ}\text{C}$ to $-6.4^{\circ}\text{C}$ .	<b>Severe Cold Day:</b> Maximum Temperature Departure from normal $\leq -6.5^{\circ}\text{C}$		
<b>Cold Day:</b> Maximum Temperature Departure from normal $-4.5^{\circ}\text{C}$ to $-6.4^{\circ}\text{C}$ .					
<b>Severe Cold Day:</b> Maximum Temperature Departure from normal $\leq -6.5^{\circ}\text{C}$					
 <b>Fog</b>	<p><b>Phenomenon of small droplets suspended in air and the horizontal visibility &lt; 1km</b></p> <table border="1"><tr><td><b>Moderate Fog:</b> When the visibility between 500-200 metres</td></tr><tr><td><b>Dense Fog:</b> when the visibility between 50- 200 metres</td></tr><tr><td><b>Very Dense Fog:</b> when the visibility &lt; 50 metres</td></tr></table>	<b>Moderate Fog:</b> When the visibility between 500-200 metres	<b>Dense Fog:</b> when the visibility between 50- 200 metres	<b>Very Dense Fog:</b> when the visibility < 50 metres	
<b>Moderate Fog:</b> When the visibility between 500-200 metres					
<b>Dense Fog:</b> when the visibility between 50- 200 metres					
<b>Very Dense Fog:</b> when the visibility < 50 metres					