

Government of India  
Ministry of Earth Sciences  
India Meteorological Department



Press Release

Date: 09<sup>th</sup> April, 2024.

Time of Issue: 1245 hours IST

**Subject: i) Light to moderate rainfall accompanied with thunderstorm over Northwest India during 13<sup>th</sup>-16<sup>th</sup> April, 2024.**

**ii) Light to moderate rainfall spell accompanied with thunderstorm, gusty winds & hail likely over Central India during 09<sup>th</sup>-10<sup>th</sup> April, 2024.**

**Realised weather during past 24 hours till 0830 hours IST of today: (details in Annexure I)**

- ❖ **Heat wave conditions** prevailed in isolated pockets over Tamil Nadu.
- ❖ **Hailstorm occurred** at isolated places over Madhya Pradesh, Vidarbha, Chhattisgarh and Telangana.
- ❖ **Light/Moderate rain** accompanied with **thunderstorm** observed over many parts of Chhattisgarh; over some parts of East Madhya Pradesh, Vidarbha, Arunachal Pradesh and at isolated places over West Madhya Pradesh, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, West Bengal & Sikkim, Jharkhand, Odisha, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe and Telangana.

**Weather Systems and Forecast & Warnings: (Annexure II)**

- ❖ A cyclonic circulation lies over central parts of Madhya Maharashtra and a trough/wind discontinuity runs from north Gujarat to south Tamil Nadu in lower tropospheric levels. Under its influence;
  - ✓ Scattered light/moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-50 kmph)** very likely over Madhya Pradesh, Chhattisgarh, Vidarbha and isolated to scattered over West Madhya Pradesh, Marathwada, Madhya Maharashtra during 09<sup>th</sup>-13<sup>th</sup> April, 2024.
  - ✓ Isolated light/moderate rainfall accompanied with **thunderstorm, lightning** very likely over Gangetic West Bengal, Jharkhand, Odisha, Bihar and Andaman & Nicobar Islands during 09<sup>th</sup>-13<sup>th</sup> April.
  - ✓ Isolated light/moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-50 kmph)** very likely over Telangana, Kerala & Mahe during next 7 days and over Coastal Andhra Pradesh-Yanam, Tamil Nadu, Puducherry-Karaikal during 11<sup>th</sup>-14<sup>th</sup> April, 2024.
  - ✓ **Hailstorm activity also very likely at isolated places over West Madhya Pradesh, Vidarbha on 09<sup>th</sup> & 10<sup>th</sup>; East Madhya Pradesh during 09<sup>th</sup>-11<sup>th</sup> and Chhattisgarh on 09<sup>th</sup> April, 2024.**
- ❖ A **Western Disturbance** as a trough in middle tropospheric westerlies runs along Long. 60°E to the north of Lat. 30°N. **An Active Western Disturbance is likely to affect Northwest India from 12<sup>th</sup> April, 2024.** Under the influence of these systems:
  - ✓ Isolated light rainfall/snowfall very likely over Jammu-Kashmir, Himachal Pradesh, Uttarakhand during 10<sup>th</sup>-12<sup>th</sup> and fairly widespread to widespread light to moderate rainfall/snowfall with **thunderstorm, lightning** over the region during 13<sup>th</sup>-16<sup>th</sup> April, 2024.
  - ✓ Scattered to fairly widespread rainfall with **thunderstorm, lightning** over Uttar Pradesh, Punjab and Haryana during 13<sup>th</sup>-15<sup>th</sup> April and isolated to scattered light to moderate rainfall with **thunderstorm, lightning** very likely over Rajasthan during 10<sup>th</sup>-15<sup>th</sup> April, 2024.
  - ✓ **Isolated heavy rainfall/snowfall very likely over Jammu & Kashmir on 13<sup>th</sup> & 14<sup>th</sup> April, 2024.**
  - ✓ **Isolated hailstorm very likely over Himachal Pradesh and Uttarakhand on 13<sup>th</sup> April, 2024.**

- ✓ **Duststorm/thundersquall** (50-60 kmph gusting to 70kmph) very likely over Rajasthan on 13<sup>th</sup> April, 2024.
- ❖ A cyclonic circulation lies over northeast Assam in lower tropospheric levels. Under the influence of this system:
  - ✓ Scattered to fairly widespread light/moderate rainfall/snowfall with isolated **thunderstorm & lightning** very likely over Arunachal Pradesh; isolated to scattered light to moderate rainfall with isolated **thunderstorm, lightning & gusty winds** over Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 5 days.
  - ✓ **Isolated heavy rainfall also very likely over Arunachal Pradesh on 09<sup>th</sup> April, 2024.**

#### Maximum temperature observation and forecast for next 5 days:

- ❖ Yesterday, maximum temperatures were in the range of 42-44°C over many parts of Rayalaseema and in the range of 40-42°C over some parts of Tamil Nadu and in isolated pockets over Uttar Pradesh, West Rajasthan, Gujarat, West Madhya Pradesh, Madhya Maharashtra, Telangana and Kerala. These were above normal by 2-3 °C over the region.
- ❖ Yesterday, the maximum temperature exceeded 98<sup>th</sup> percentile over some parts of East Rajasthan, Karnataka, Rayalaseema, Kerala and Tamil Nadu and in isolated pockets over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Odisha, Marathwada and Coastal Andhra Pradesh.
- ❖ Today, Minimum temperatures are above normal by 3-5°C at isolated places over Kerala & Mahe, north Madhya Maharashtra, Marathwada, West Rajasthan and west Assam.
- ❖ Gradual rise by about 3-5°C in maximum temperatures very likely over many parts of East India during next 5 days.
- ❖ No significant change in maximum temperatures very likely over many parts of Maharashtra during next 2 days and fall by 2-4°C thereafter.
- ❖ No significant change in maximum temperatures very likely over many parts of south peninsular India during next 3 days and gradual fall by 2-3°C thereafter.
- ❖ No significant change in maximum temperatures very likely over rest parts of the country.

#### Heat wave, Warm Night and Hot & Humid weather warning for next 5 days:

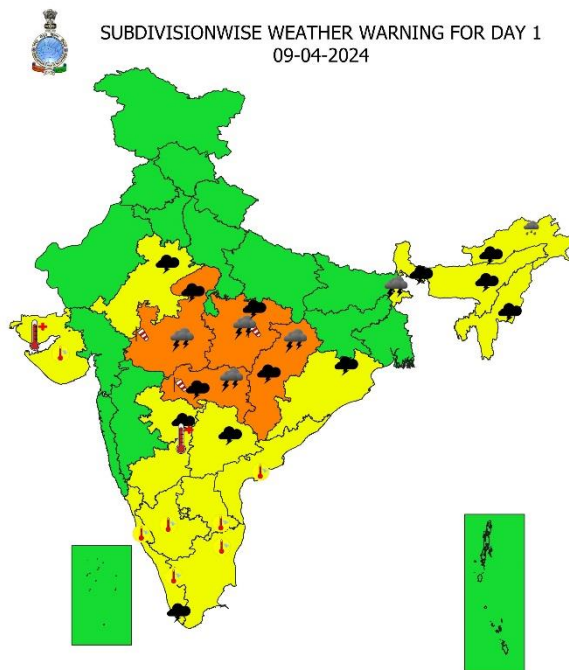
- ❖ **Heat wave conditions** very likely in isolated pockets over Saurashtra & Kutch during 09<sup>th</sup>-11<sup>th</sup> and over North Interior Karnataka on 09<sup>th</sup> April, 2024.
- ❖ **Hot and humid weather** very likely to prevail over Kerala & Mahe during 09<sup>th</sup>-13<sup>th</sup> and over Coastal Andhra Pradesh & Yanam, South Interior Karnataka, Tamil Nadu, Puducherry & Karaikal and Rayalaseema during 09<sup>th</sup>-11<sup>th</sup> April, 2024.

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)

**Significant amount of rainfall (in cm):**

- ❖ **Telangana:** Gandhari (dist Kamareddy) 5, Tadwai (dist Kamareddy) 3,
- ❖ **Odisha:** Nawapara-4, Bolangir-3, Malkangiri, Bargarh, Sonepur-2 each
- ❖ **West Madhya Pradesh:** Bankhedi (dist Narmadapuram) 4, Navibagh Aet (dist Bhopal) 1,
- ❖ **Kerala:** Konni (Pathanamthitta district) 4, Punalur (Kollam district) 3
- ❖ **Arunachal Pradesh:** Tuting (dist Upper Siang) 4, Nachu Arg (dist Upper Subansiri) 2,
- ❖ **Chhattisgarh:** Raipur (dist Raipur) 3, Labhandih (dist Raipur) 2, Mana-raipur-ap (dist Raipur) 2, Chhura (dist Gariaband) 2, Gundardehi (dist Balod) 2, Patan (dist Durg) 2, Simga (dist Baloda Bazar) 2, Berla (dist Bemetara) 2, Takhatpur (dist Bilaspur) 2, Doundi (dist Balod) 2,
- ❖ **Vidarbha:** Kuhi (dist Nagpur) 2
- ❖ **East Madhya Pradesh:** Amarkantak (dist Anuppur) 2, Karanjia (dist Dindori) 2, Mawai (dist Mandla) 2, Bajag (dist Dindori) 2, Venkatnagar (dist Anuppur) 2, Bichhia (dist Mandla) 2,
- ❖ **Sikkim:** North Sikkim-2
- ❖ **Manipur:** Jiribam\_ Aws (dist Imphal East) 2

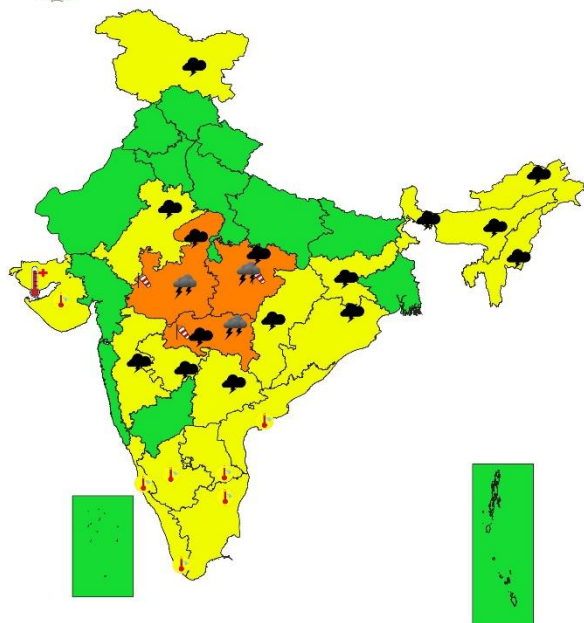
**SUBDIVISIONWISE WEATHER WARNING FOR DAY 1**  
09-04-2024



**Subdivision Warning**



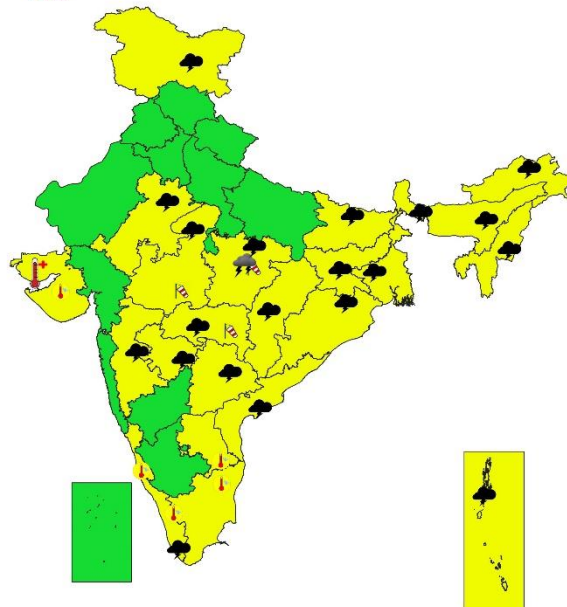
**SUBDIVISIONWISE WEATHER WARNING FOR DAY 2**  
10-04-2024



**Subdivision Warning**

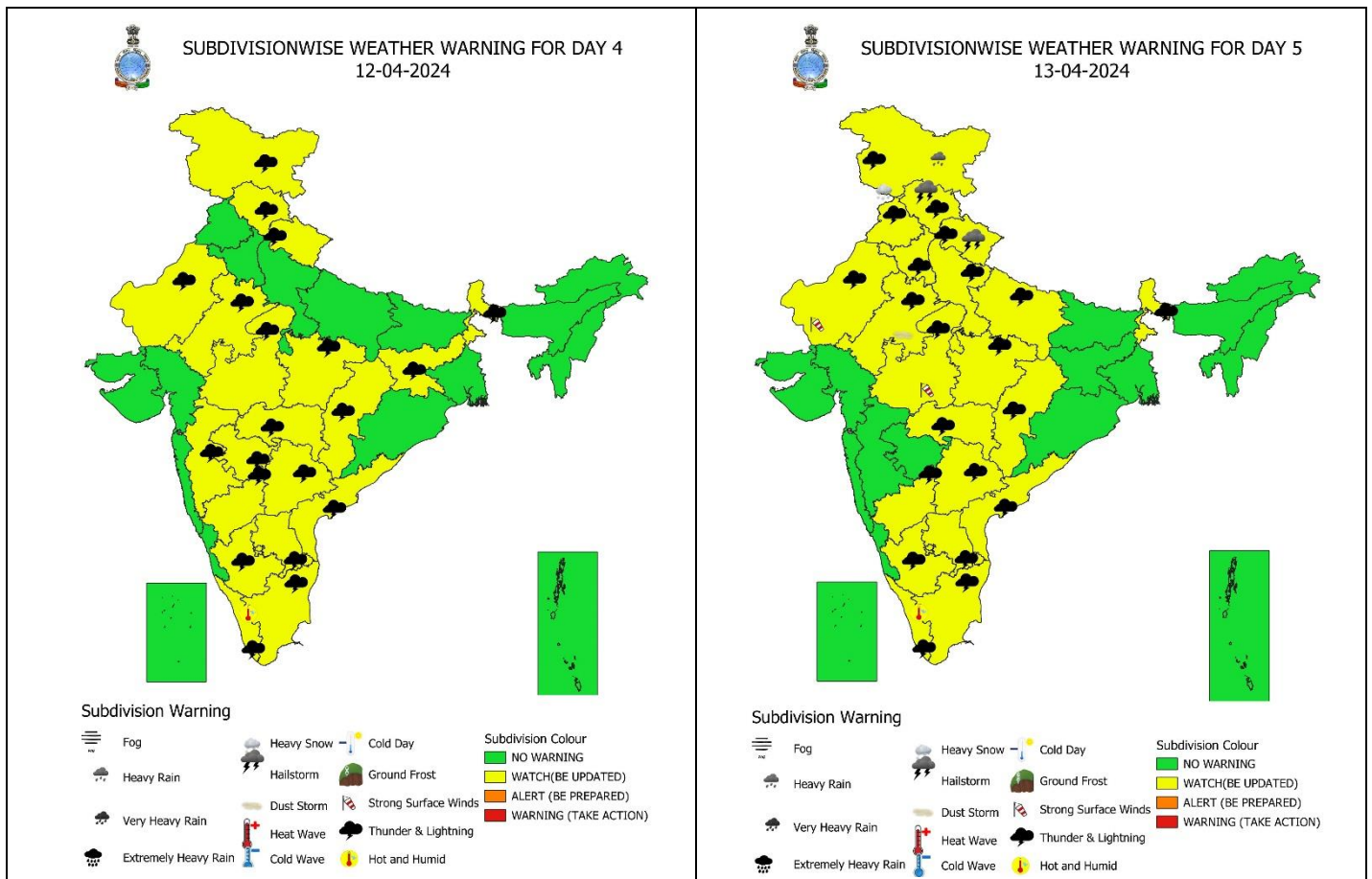


**SUBDIVISIONWISE WEATHER WARNING FOR DAY 3**  
11-04-2024



**Subdivision Warning**





**Impact expected and action suggested due to thunderstorm accompanied with lightning/gusty winds & Hailstorm over Central India during 09<sup>th</sup>-11<sup>th</sup> April.**

**Impact expected:**

- ❖ Strong wind/hail may damage plantation, horticulture and standing crops.
- ❖ Hail may injure people and cattle at open places.
- ❖ Partial damage to vulnerable structures due to strong winds.
- ❖ Minor damage to kutcha houses/walls and huts.
- ❖ Loose objects may fly.

**Action suggested:**

- ❖ Stay indoors, close windows & doors and avoid travel if possible.
- ❖ Take safe shelters; do not take shelter under trees.
- ❖ Do not lie on concrete floors and do not lean against concrete walls.
- ❖ Unplug electrical/ electronic appliances.
- ❖ Immediately get out of water bodies.
- ❖ Keep away from all the objects that conduct electricity.

**Impact & Action Suggested due to heavy rainfall over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 13<sup>th</sup> & 14<sup>th</sup> April, 2024.**

**Impacts Expected for Rain/Snow**

- ❖ Disruption of Electricity.
- ❖ Landslide, rock fall and mudslides, Blocking/washout of roads/highways/bridges Nallahs.
- ❖ Disruption of traffic flow.
- ❖ Damage to Kuccha and unsecured structures.

**Suggested Actions**

- ❖ Avoid roadway underpasses, drainage ditches, low lying areas and areas where water collects – they can unexpectedly flood or overflow.
- ❖ Stay away from power lines or electrical wires.
- ❖ Don't stay in kuccha houses during heavy rainfall as it may collapse anytime soon.
- ❖ Drive carefully.

**IMPACT & ACTION SUGGESTED due to Heat Wave Conditions:**

**Yellow alert Areas (Saurashtra & Kutch and North Interior Karnataka)**

- ❖ Moderate temperature & heat is tolerable for general public but moderate health concern likely for vulnerable people e.g. infants, elderly, people with chronic diseases.
- ❖ Avoid heat exposure.
- ❖ Wear lightweight, light colour, loose, cotton clothes.
- ❖ Cover your head, use a cloth, hat or umbrella.

**Agromet advisories for Heavy Rainfall, Gusty Winds, Hailstorm and Heat Wave likely over various parts of the country**














- Harvest the matured crops, fruits and vegetables at the earliest and keep the harvested produce at safer places or cover the heaps of harvested produce in the fields with tarpaulin sheets.
- Use hail nets or hail caps in fruit orchards to protect them from mechanical damage and provide mechanical support to horticultural crops & staking to vegetables in Madhya Pradesh, Chhattisgarh, Vidarbha and Sikkim.
- Drain out excess water from crop fields to avoid water stagnation in Arunachal Pradesh and postpone fresh sowing of rice, soybean, vegetables and maize in Jhum and cover the already-sown crops with farm residues or paddy straw.
- Apply light and frequent irrigation to standing crops to avoid heat stress; provide mulching to conserve soil moisture and minimise evaporation in Saurashtra & Kutch and North Interior Karnataka.



## 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; **dist:** District; **NH:** National Highway; **KVK:** Krishi Vigyan Kendra; **DVC:** Damodar Valley Corporation; **PTO:** Part Time Office.
- ❖ **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	 Strong Surface Winds	 NO WARNING
 Heavy Snow	 Heat Wave	 WATCH(BE UPDATED)
 Thunderstorms & Lightning	 Cold wave	 ALERT (BE PREPARED)
 Hailstorm	 Fog	 WARNING (TAKE ACTION)

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

## LEGENDS

### WARNING

WARNING (TAKE ACTION)
ALERT ( BE PREPARED)
WATCH (BE UPDATED)
NO WARNING ( NO ACTION)

### Probabilistic Forecast

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



**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 Storm: Wind speed  $> 220$  kmph ( $> 119$  knots)