

Government of India  
Ministry of Earth Sciences  
India Meteorological Department



Press Release  
Date: 07<sup>th</sup> July, 2024  
Time of Issue: 1330 hours IST

**Subject: (1) Heavy to very heavy rainfall spell with isolated extremely heavy rainfall likely over Uttarakhand today and decrease thereafter.  
(2) Heavy to very heavy rainfall spell likely along West Coast, many parts of northeast & east India and Uttar Pradesh next 5 days.**

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

- ✓ **Heavy to very heavy rainfall at a few places with extremely heavy falls** at isolated places over Konkan & Goa; **Heavy to very heavy rainfall with extremely heavy falls** at isolated places over East Uttar Pradesh, Coastal Karnataka; **Heavy to very heavy rainfall** at a few places over Uttarakhand; **Heavy to very heavy rainfall** at isolated places over West Uttar Pradesh, West Rajasthan, Bihar, Madhya Maharashtra, East Madhya Pradesh, Gujarat Region; **Heavy rainfall** at isolated places over Punjab, Haryana, East Rajasthan, Arunachal Pradesh, Odisha, West Madhya Pradesh, Vidarbha, Assam & Meghalaya, Telangana, Kerala & Mahe, Interior Karnataka and Coastal Andhra Pradesh & Yanam
- ✓ **Gusty winds/squally winds** data reported over the country is attached in [Annexure II](#).

**Weather Systems**

- ✓ Monsoon trough is active and near normal position at mean sea level.
- ✓ A cyclonic circulation lies over northeast Rajasthan extending upto middle-tropospheric levels.
- ✓ The off-shore trough at mean sea level runs along south Gujarat- north Kerala coasts.

**Forecast & Warnings (Annexure III)**

❖ **Northwest & Central India**

- ✓ Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm & lightning very likely over Uttarakhand, Uttar Pradesh and Central India; scattered to fairly widespread light to moderate rainfall over Himachal Pradesh, Haryana-Chandigarh-Delhi, East Rajasthan; isolated to scattered light to moderate rainfall over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Punjab and West Rajasthan during next 5 days.
- ✓ Isolated heavy rainfall very likely over Himachal Pradesh and Rajasthan on 07<sup>th</sup>, 10<sup>th</sup> & 11<sup>th</sup>; Uttarakhand on 08<sup>th</sup>, 10<sup>th</sup> & 11<sup>th</sup>; Punjab on 08<sup>th</sup>; Haryana-Chandigarh on 07<sup>th</sup> & 11<sup>th</sup>; Uttar Pradesh on 08<sup>th</sup> & 09<sup>th</sup>; Madhya Pradesh during 07<sup>th</sup>-11<sup>th</sup>; Vidarbha & Chhattisgarh during 07<sup>th</sup>-09<sup>th</sup> July.
- ✓ **Isolated very heavy rainfall also likely over Uttar Pradesh on 07<sup>th</sup>, 10<sup>th</sup> & 11<sup>th</sup> July.**
- ✓ **Isolated extremely heavy rainfall very likely over Uttarakhand today, the 07<sup>th</sup> July.**

❖ **East & Northeast India**

- ✓ Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm, lightning very likely over East & Northeast India during next 5 days.

- ✓ Isolated **heavy rainfall** very likely over Bihar on 07<sup>th</sup> & 08<sup>th</sup>; Odisha on 08<sup>th</sup>; Arunachal Pradesh on 07<sup>th</sup> & 11<sup>th</sup>; Assam & Meghalaya on 07<sup>th</sup>, 10<sup>th</sup> & 11<sup>th</sup>; Nagaland, Manipur, Mizoram & Tripura during 07<sup>th</sup>-11<sup>th</sup> July.
  - ✓ **Isolated very heavy rainfall also likely over Odisha on 07<sup>th</sup>; Bihar during 09<sup>th</sup>-11<sup>th</sup>; Nagaland on 08<sup>th</sup>; Arunachal Pradesh during 08<sup>th</sup>-10<sup>th</sup>; Assam & Meghalaya on 08<sup>th</sup> & 09<sup>th</sup> July; Sub-Himalayan West Bengal & Sikkim during next 5 days.**
- ❖ **West and South Peninsular India**
- ✓ Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm & lightning very likely over Konkan & Goa, Madhya Maharashtra, Kerala & Mahe, Lakshadweep, Coastal Karnataka; scattered to fairly widespread light to moderate rainfall over Marathwada, Gujarat Region, Coastal Andhra Pradesh & Yanam, Telangana and Interior Karnataka; isolated to scattered light to moderate rainfall over Tamil Nadu, Puducherry & Karaikal and Rayalaseema during next 5 days.
  - ✓ Isolated **heavy rainfall** very likely over Konkan & Goa & Madhya Maharashtra during 09<sup>th</sup>-11<sup>th</sup>; Marathwada & Coastal Andhra Pradesh & Yanam on 07<sup>th</sup>; Gujarat Region on 07<sup>th</sup> & 09<sup>th</sup>; Kerala & Mahe on 07<sup>th</sup> & 08<sup>th</sup>; Telangana on 08<sup>th</sup> & 09<sup>th</sup>; Coastal Karnataka on 09<sup>th</sup>; North Interior Karnataka on 07<sup>th</sup> & 10<sup>th</sup>; South Interior Karnataka on 08<sup>th</sup> & 10<sup>th</sup> July.
  - ✓ **Isolated very heavy rainfall also very likely over South Interior Karnataka on 07<sup>th</sup>; Ghat areas of Madhya Maharashtra on 07<sup>th</sup> & 08<sup>th</sup>; Konkan & Goa on 08<sup>th</sup>; Coastal Karnataka during 07<sup>th</sup>, 08<sup>th</sup>, 10<sup>th</sup> & 11<sup>th</sup> July.**
  - ✓ **Isolated extremely heavy rainfall also very likely over Konkan & Goa on 07<sup>th</sup> July.**

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

- ❖ **Konkan & Goa:** Matheran (dist Raigad) 22, Ratnagiri - Imd Obsy (dist Ratnagiri) 15, Rajapur (dist Ratnagiri) 13, Panvel\_agri (dist Raigad) 12, Ponda (dist North Goa) 12, Karjat\_agri (dist Raigad) 11, Murbad (dist Thane) 11, Lanja (dist Ratnagiri) 11, Khalapur (dist Raigad) 11, Mandangad (dist Ratnagiri) 11, Sangameshwar Devrukh (dist Ratnagiri) 10, Awalegaon - Arg (dist Sindhudurg) 9, Shahapur (dist Thane) 9, Roha (dist Raigad) 8;
- ❖ **East Uttar Pradesh:** Mankapur (dist Gonda) 21, Bhanpur (dist Basti) 20, Basti Obsy (dist Basti) 20, Rudhauri (dist Basti) 19, Muhammadi (dist Kheri) 17, Nighasan (dist Kheri) 13, Bansi Tehsil (dist Siddharth Nagar) 12, Balrampur(t) (dist Balrampur) 11, Dhaurahara (dist Kheri) 11, Kaiserganj (dist Bahraich) 11, Kheri Lakhimpur (dist Kheri) 10, Ikauna (dist Shrawasti) 9, Malihabad (dist Lucknow) 9, Pharenda (dist Maharajganj) 9, Ballia Obsy (dist Ballia) 8, Domeriaganj (dist Siddharth Nagar) 8, Biswan (dist Sitapur) 8, Bahraich (dist Bahraich) 8, Lucknow ( Ap) (dist Lucknow) 7, Ghanghata (dist Sant Kabir Nagar) 7;
- ❖ **Coastal Karnataka:** Castle Rock (dist Uttara Kannada) 21, Manki (dist Uttara Kannada) 11, Kumta (dist Uttara Kannada) 9, Kadra (dist Uttara Kannada) 8, Shirali (dist Uttara Kannada) 8, Gokarna (dist Uttara Kannada) 7;
- ❖ **Bihar:** Shambhuganj (dist Banka) 19, Kishanganj (dist Kishanganj) 15, Sikta (dist West Champaran) 15, Tarapur (dist Monghyr) 15, Asarganj (dist Monghyr) 13, Sultanganj (dist Bhagalpur) 13, Laxmipur (dist Jamui) 12, Athmalgola (dist Patna) 11, Barbigaha (dist Sheikhpura) 11, Raghunathpur (dist Siwan) 11, Shahkund (dist Bhagalpur) 11, Sarmera (dist Nalanda) 11, Thakurganj (dist Kishanganj) 10, Siswan (dist Siwan) 10, Sangrampur (dist Monghyr) 10;
- ❖ **Madhya Maharashtra:** Gaganbawada (dist Kolhapur) 18, Lonavala\_agri (dist Pune) 13, Chandgad (dist Kolhapur) 9, Yaval (dist Jalgaon) 9, Ozharkheda - Fmo (dist Nashik) 7, Peth (dist Nashik) 7;
- ❖ **Uttarakhand:** Champawat (Champawat) 18, Nainital (Nainital) 16, Devprayag (Tehri Garhwal) 14, Kotdwar (Pauri Garhwal) 13, Haripur (Dehradun) 11, Banbasa (Champawat) 10, Haldwani (Nainital) 10, Khatima (Udham Singh Nagar) 10, Betalghat (Nainital) 9, Lohaghat (Champawat) 9, Almora (Almora) 7;
- ❖ **West Rajasthan:** Taranagar / Reni (dist Churu) 14, Rajgarh / Sadulpur (dist Churu) 11, Sangaria (dist Hanumangarh) 10, Ganganagar (dist Sri Ganganagar) 8, Sriganganagar Tehsil (dist Sri Ganganagar) 8, Nohar (dist Hanumangarh) 8, Bhadra (dist Hanumangarh) 7, Tibi (dist Hanumangarh) 7;
- ❖ **East Madhya Pradesh:** Mohkheda (dist Chindwara) 13, Chand (dist Chindwara) 7;
- ❖ **Gujarat Region:** Dolvan (dist Tapi) 12, Waghai (dist Dangs) 9, Dangs (dist Dangs) 7, Subir (dist Dangs) 7, Vansda (dist Navsari) 7, Dang (dist Dangs) 7, Dharampur (dist Valsad) 7;
- ❖ **West Uttar Pradesh:** Bisalpur (dist Pilibhit) 12, Shahjahanpur (t) (dist Shahjahanpur) 9, Pawayan (dist Shahjahanpur) 9, Sahabad (dist Rampur) 9, Sahaswan (dist Badaun) 9, Bisauli (dist Badaun) 8, Shahjahanpur Obsy (dist Shahjahanpur) 8, Mawana (dist Meerut) 7, Moradabad (dist Moradabad) 7, Jasrana (dist Firozabad) 7, Baheri (dist Bareilly) 7;
- ❖ **South Interior Karnataka:** Kottigehara (dist Chikkamagaluru) 11, Agumbe (dist Shivamogga) 7;
- ❖ **Telangana:** Tamsi (dist Adilabad) 11, Dharmaram (dist Peddapalle) 10, Talamadugu (dist Adilabad) 8, Sirpur (dist Kumaram Bheem) 8, Chennaraopet (dist Warangal) 7, Adilabad (dist Adilabad) 7, Tandur (dist Vikarabad) 7;
- ❖ **Vidarbha:** Tiroda (arg) (dist Gondia) 11, Mulchera (dist Gadchiroli) 9, Rajura (dist Chandrapur) 8, Korpana (dist Chandrapur) 8, Ballarpur (dist Chandrapur) 7;
- ❖ **Punjab:** Adampur (dist Jalandhar) 10;
- ❖ **West Madhya Pradesh:** Gormi (dist Bhind) 10, Mehgaon (dist Bhind) 10, Roan (dist Bhind) 9, Seodha(seondha) (dist Datia) 9, Mau (dist Bhind) 8, Narwar (dist Shivpuri) 8, Gohad (dist Bhind) 7, Mihona (dist Bhind) 7, Lahar (dist Bhind) 7;
- ❖ **North Interior Karnataka:** Londa (dist Belagavi) 10, Sedam (dist Kalaburgi) 7;
- ❖ **Haryana:** Fatehabad (dist Fatehabad) 9, Rania (dist Sirsa) 8, Sirsa (dist Sirsa) 7;
- ❖ **Assam & Meghalaya:** Dhemaaji (dist Dhemaaji) 9, Aie Nh Xing (dist Bongaigaon) 6;
- ❖ **Odisha:** Baripada (Mayurbhanj) 9, Suliapada (Mayurbhanj) 8;
- ❖ **Coastal Andhra Pradesh & Yanam:** Tadepalligudem (dist West Godavari) 8;

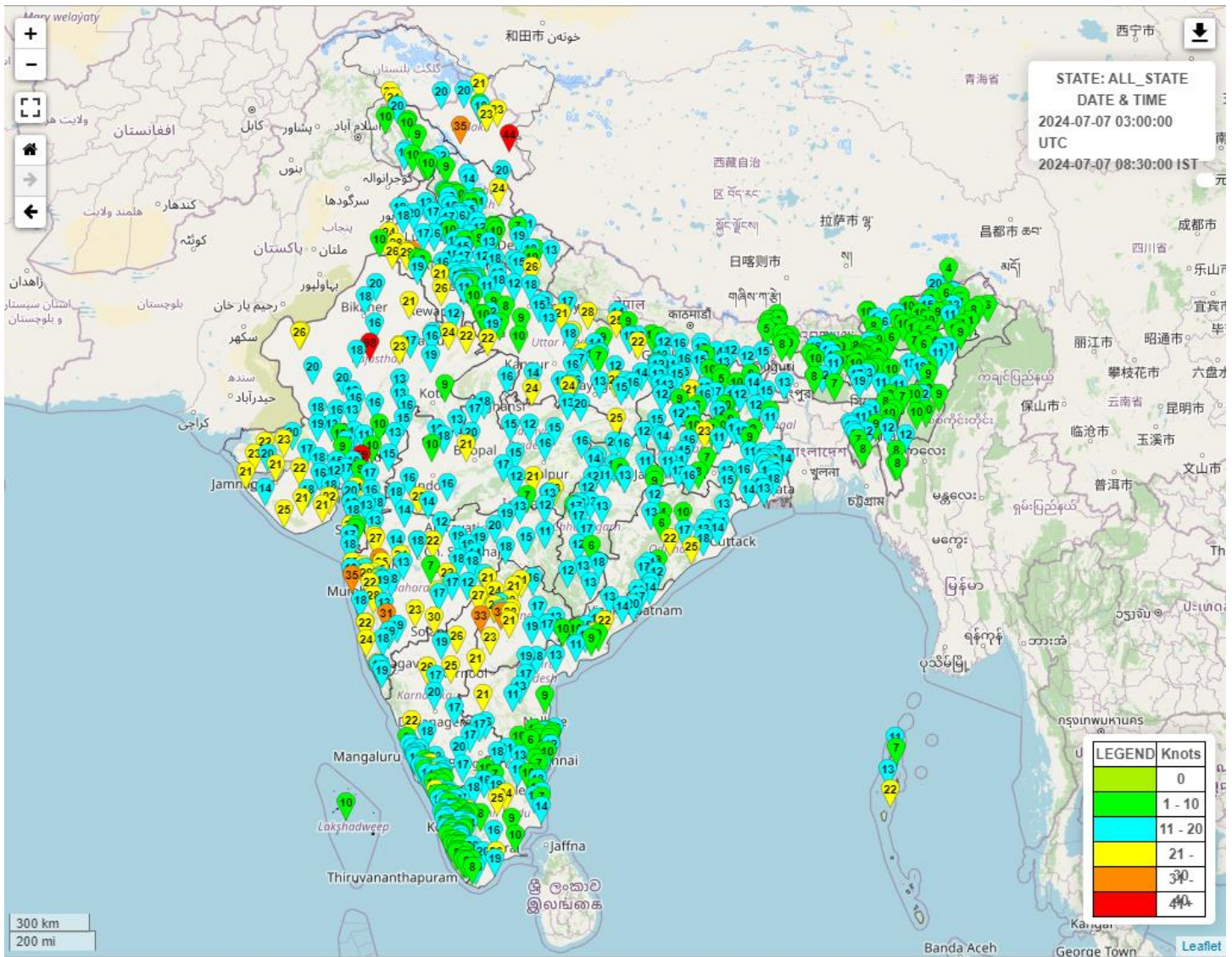
- ❖ **East Rajasthan:** Mahwa (dist Dausa) 7;
- ❖ **Kerala & Mahe:** Kannur (dist Cannur) 7, Kudulu (dist Kasargod) 7;
- ❖ **Arunachal Pradesh:** Naharlagun (dist Papumpara) 7;

**ANNEXURE II**

**Reported maximum wind speed (in kmph) during past 24 hours till 0830 hours IST of today:**

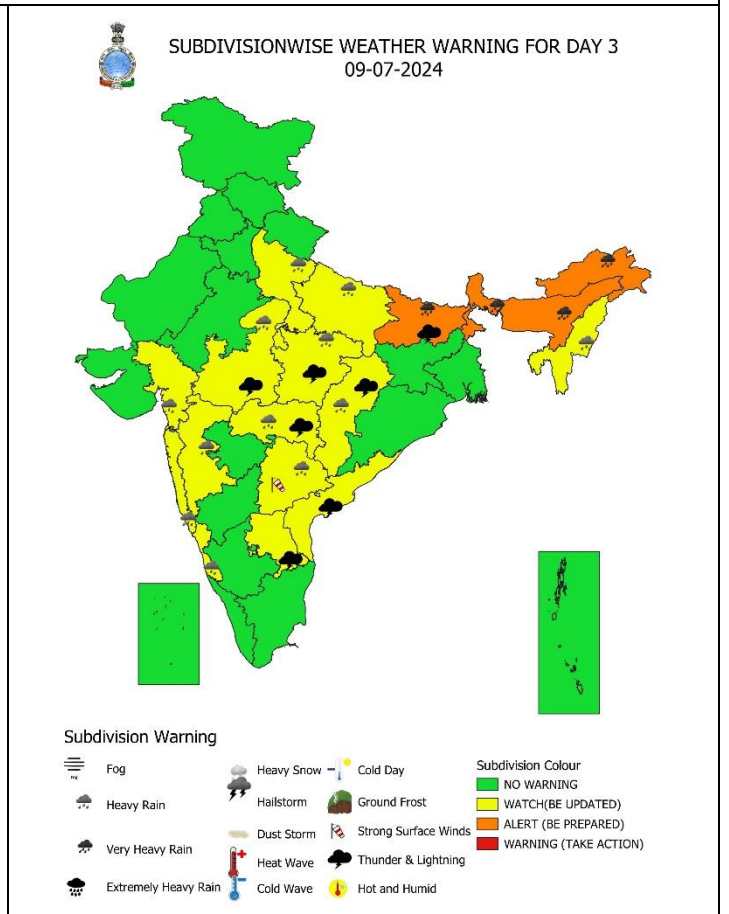
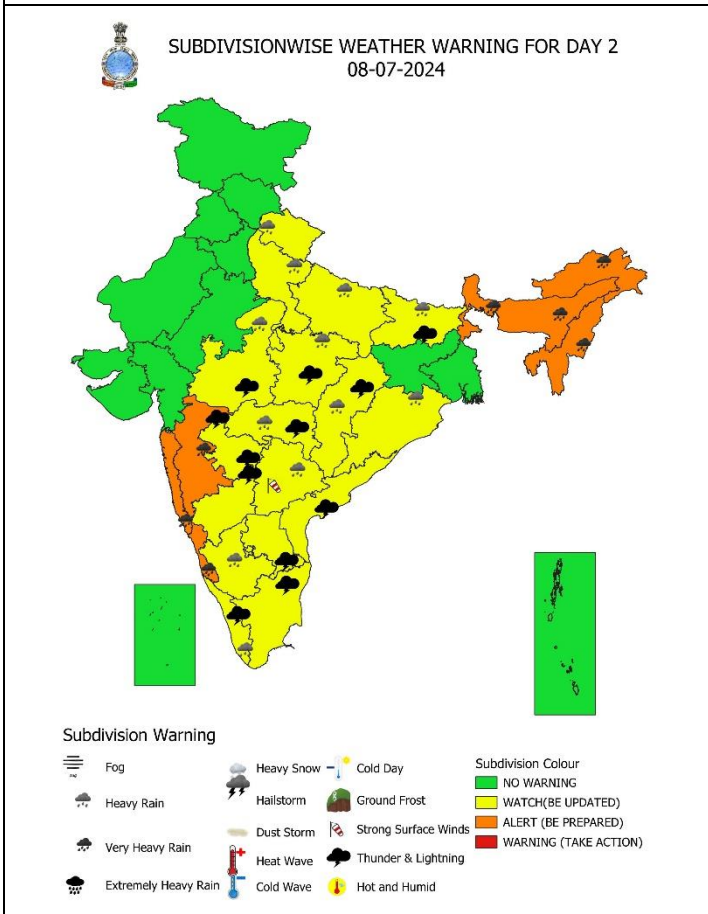
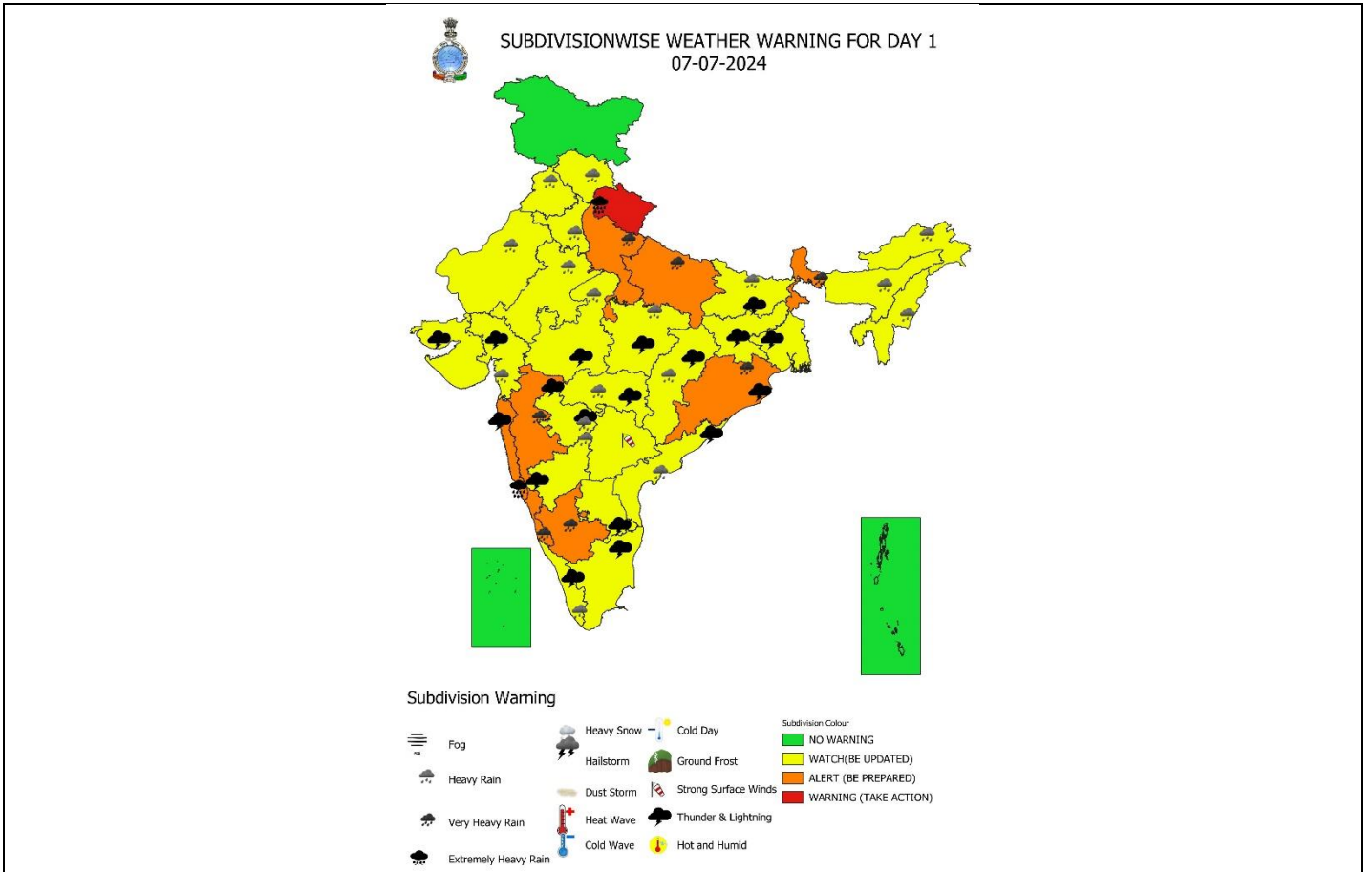
- ❖ **Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad:** Leh 81, Kargil 65;
- ❖ **Haryana:** Sirsa 72, Mahendragarh 48;
- ❖ **Maharashtra:** Raigad 65, Pune 33, Satara 57;
- ❖ **Telangana:** Vikarabad 61, Ranga Reddy 59;
- ❖ **Rajasthan:** Hanumangarh 51, Jaisalmer 48;
- ❖ **Uttar Pradesh:** Baharaich 51, Siddharth Nagar 46;
- ❖ **Uttarakhand:** Udham Singh Nagar 48;
- ❖ **Odisha:** Puri 46

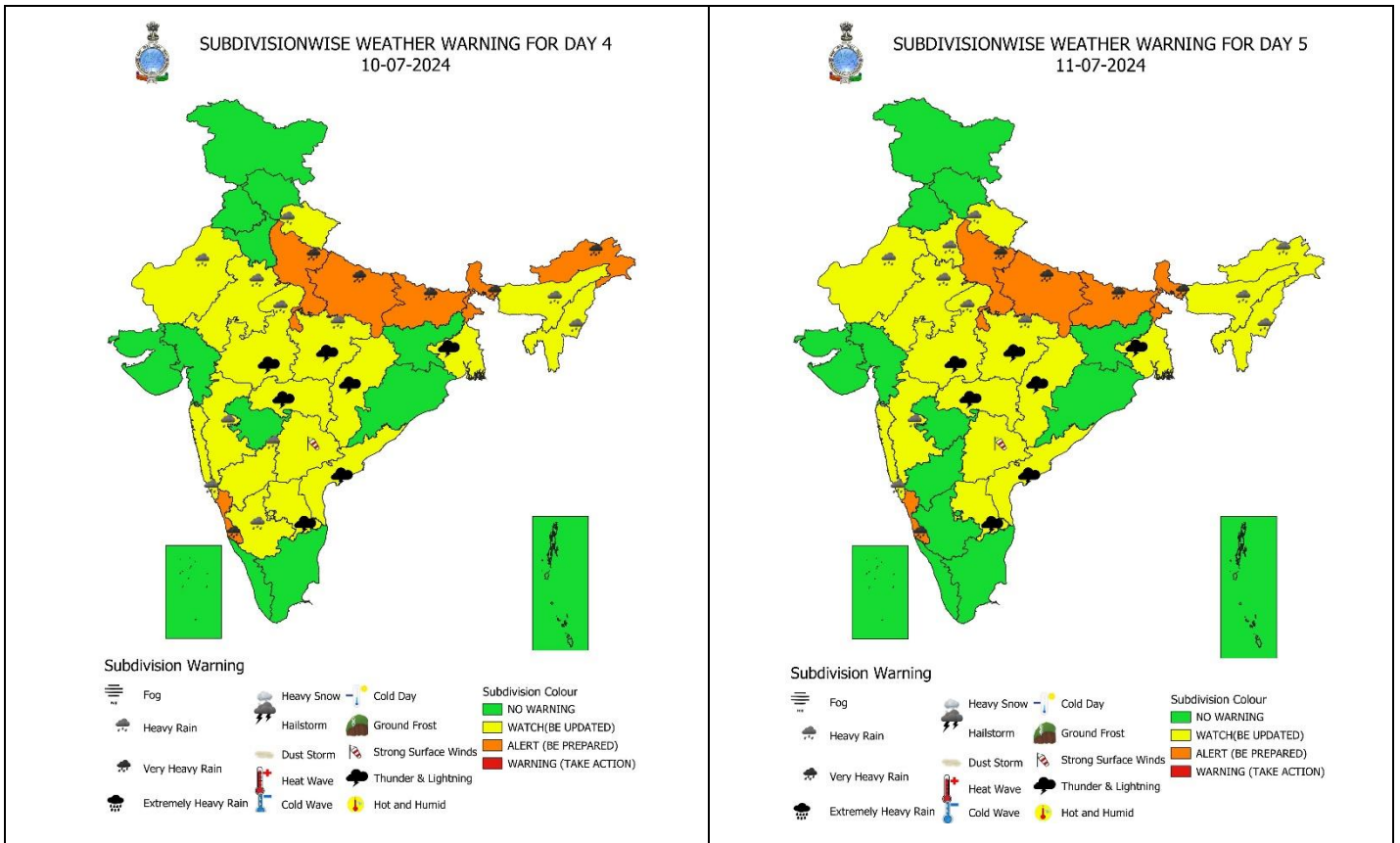
**Fig.: Gusty winds reported over the country (in knots, 1 Knot = 1.85 kmph) from 0830 hrs IST of 06.07.2024 to 0830 hrs IST of 07.07.2024**



For more details, kindly refer: <http://aws.imd.gov.in:8091/>







**IMPACT & ACTION SUGGESTED due to**

- ✓ **Isolated extremely heavy rainfall very likely over Uttarakhand and Konkan & Goa on 07<sup>th</sup> July.**
- ✓ **Isolated very heavy rainfall very likely over Uttar Pradesh on 07<sup>th</sup>, 10<sup>th</sup> & 11<sup>th</sup>; Odisha on 07<sup>th</sup>; Bihar during 09<sup>th</sup>-11<sup>th</sup>; Nagaland on 08<sup>th</sup>; Arunachal Pradesh during 08<sup>th</sup>-10<sup>th</sup>; Assam & Meghalaya on 08<sup>th</sup> & 09<sup>th</sup>; South Interior Karnataka on 07<sup>th</sup>; Ghat areas of Madhya Maharashtra on 07<sup>th</sup> & 08<sup>th</sup>; Konkan & Goa on 08<sup>th</sup> July; Sub-Himalayan West Bengal & Sikkim and Coastal Karnataka during next 5 days.**

- 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 kutcha roads.
- Possibilities of damage to vulnerable structure.
- Localized Landslides/Mudslides/landslips/mud slips/landsinks/mudsinks.
- 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)

**Action Suggested**

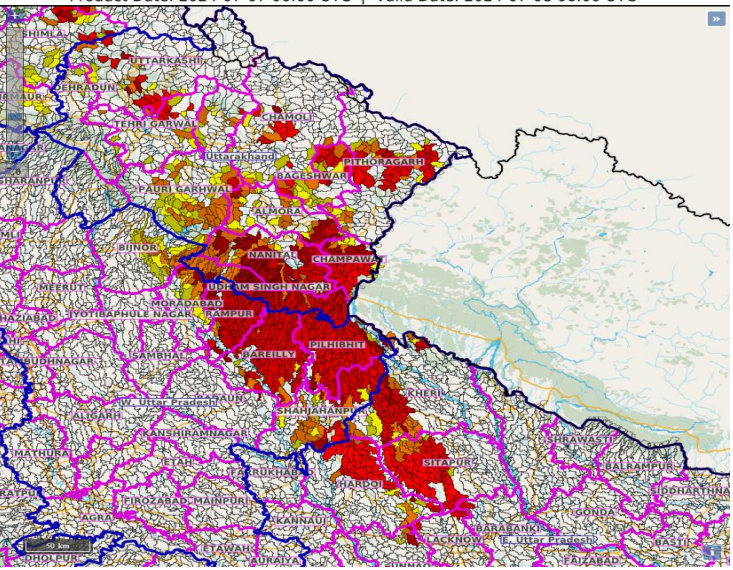
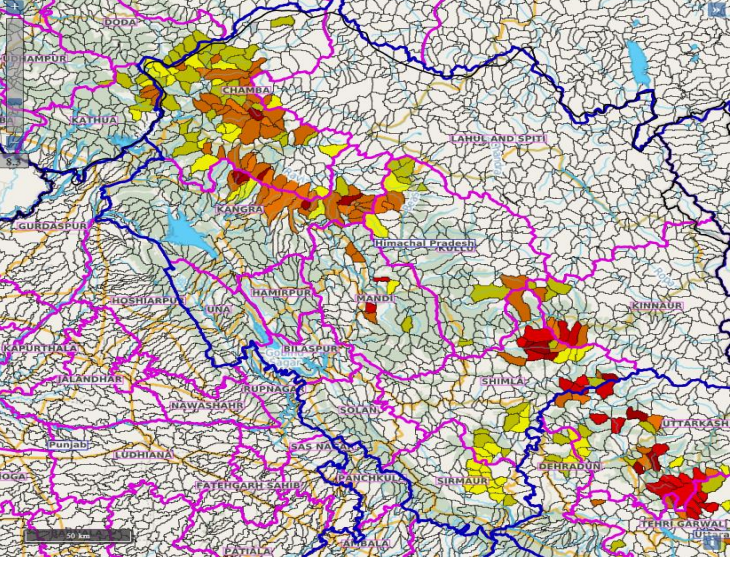
- Check for traffic congestion on your route before leaving for your destination.
- Follow any traffic advisories that are issued in this regard.
- Avoid going to areas that face the water logging problems often.
- Avoid staying in vulnerable structure.



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

- Make provision for draining out excess water from crop fields to avoid water stagnation in North Eastern States, Sub-Himalayan West Bengal & Sikkim, Odisha, Bihar, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Uttar Pradesh, Rajasthan, Madhya Pradesh, Chhattisgarh, Maharashtra, Gujarat region, Kerala, Karnataka, Coastal Andhra Pradesh and Telangana.
- Postpone sowing of maize and soybean in Uttarakhand.
- Provide mechanical support to horticultural crops & staking to vegetables.

**FLASH FLOOD GUIDANCE:**

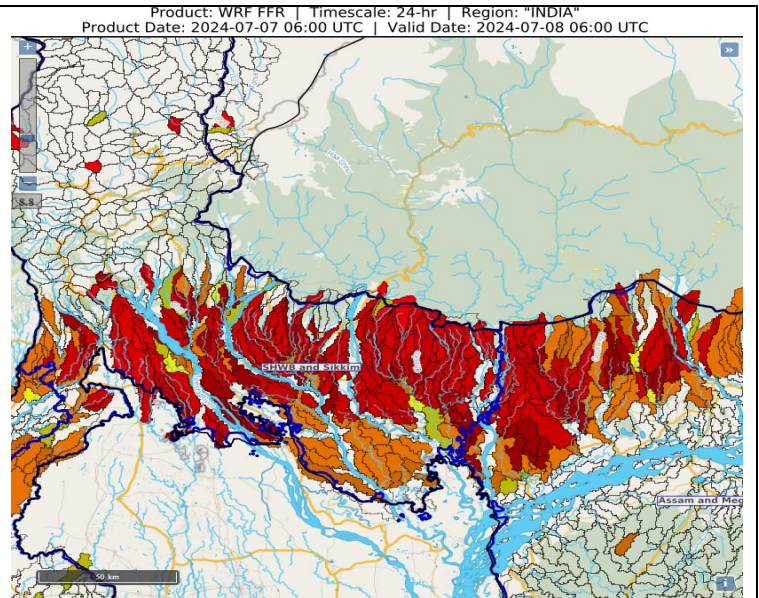
<p>24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 08-07-2024 :</p> <p>High flash flood risk likely over few watersheds &amp; neighbourhoods of Uttarakhand and adjoining West Uttar Pradesh Met Sub-divisions during next 24 hours.</p> <p>Moderate to High flash flood risk likely over few watersheds &amp; neighbourhoods of Western parts of East Uttar Pradesh Met Sub-divisions during next 24 hours.</p> <p>Surface runoff/ Inundation may occur at some fully saturated soils &amp; low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.</p>	<p>Product: WRF FFR   Timescale: 24-hr   Region: "INDIA" Product Date: 2024-07-07 06:00 UTC   Valid Date: 2024-07-08 06:00 UTC</p> 
<p>24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 08-07-2024 :</p> <p>Low to Moderate flash flood risk likely over few watersheds &amp; neighbourhoods of Himachal Pradesh Met Sub-divisions during next 24 hours.</p> <p>Surface runoff/ Inundation may occur at some fully saturated soils &amp; low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.</p>	<p>Product: WRF FFR   Timescale: 24-hr   Region: "INDIA" Product Date: 2024-07-07 06:00 UTC   Valid Date: 2024-07-08 06:00 UTC</p> 



24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 08-07-2024 :

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of SHWB & Sikkim and adjoining Assam & Meghalaya Met Sub-divisions during next 24 hours.

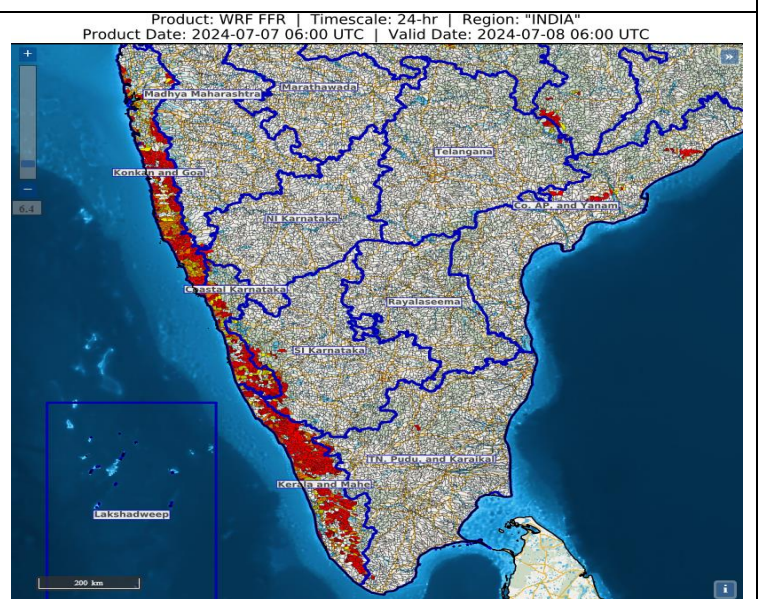
Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.



24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 08-07-2024 :

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of Konkan & Goa, Coastal Karnataka and Kerala & Mahe Met Sub-divisions during next 24 hours.

Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.





**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, **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.

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 Rain  
 Very Heavy Rain  
 Extremely Heavy Rain

 Heavy Snow  
 Hailstorm  
 Dust Storm  
 Heat Wave  
 Cold Wave

 Cold Day  
 Ground Frost  
 Strong Surface Winds  
 Thunder & Lightning  
 Hot and Humid

Subdivision Colour

NO WARNING

WATCH(BE UPDATED)

ALERT (BE PREPARED)

WARNING (TAKE ACTION)

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

## LEGENDS

### WARNING

<b>WARNING (TAKE ACTION)</b>
<b>ALERT ( BE PREPARED)</b>
<b>WATCH (BE UPDATED)</b>
<b>NO WARNING ( NO ACTION)</b>

### 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)	
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**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)	