

Government of India
Ministry of Earth Sciences
India Meteorological Department



Press Release

Date: 18th April, 2024

Time of Issue: 1300 hours IST

Subject:

- i. A fresh spell of rainfall with thunderstorms, lightning and gusty winds over Northwest India during 18th-20nd April, 2024.
- ii. Thunderstorms with lightning, gusty winds and heavy rainfall likely at isolated places over Northeast India during 18th-22nd April, 2024.
- iii. Heat wave to severe heat wave spell likely to continue over East India till 22nd and heat wave spell over parts of South Peninsular India on 18th & 19th April, 2024.

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

- ❖ Heavy rainfall observed at isolated places over Tripura.
- ❖ Duststorm & Hail observed at isolated places over Madhya Maharashtra.
- ❖ Heat Wave to Severe Heat wave conditions prevailed in isolated pockets over Saurashtra & Kutch and Heat Wave conditions in isolated pockets over Gangetic West Bengal and Odisha.
- ❖ Warm Night conditions prevailed in isolated pockets over Madhya Maharashtra.

Weather Systems and Forecast & Warnings: (Annexure II)

- ❖ A Western Disturbance as a cyclonic circulation lies over east Iran & adjoining Afghanistan in middle and upper tropospheric levels. A fresh Western Disturbance is likely to affect Northwest India from 22nd April, 2024. Under its influence:
 - ✓ Scattered to fairly widespread light to moderate rainfall/snowfall with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh during 18th-20th & 22nd and isolated to scattered rainfall over Uttarakhand during 18th-24th April, 2024.
 - ✓ Isolated to scattered rainfall with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Punjab, Haryana-Chandigarh-Delhi during 18th-22nd; West Uttar Pradesh, Rajasthan on 18th & 19th and East Uttar Pradesh on 19th April, 2024.
 - ✓ **Isolated hailstorm** very likely over Himachal Pradesh 18th & 19th April, 2024.
 - ✓ **Isolated heavy rainfall/snowfall** very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 19th April, 2024.
 - ✓ **Strong surface winds (25-35 kmph)** very likely to prevail over Haryana-Chandigarh-Delhi, Uttar Pradesh and Bihar on 18th & 19th April, 2024.
- ❖ A cyclonic circulation lies over Bangladesh & neighbourhood and another over northeast Assam in lower tropospheric levels. Under their influence:
 - ✓ Fairly widespread to widespread light to moderate rainfall/snowfall with isolated **thunderstorm & lightning & gusty winds (30-40 kmph)** very likely over Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during 18th-22nd April, 2024.

- ✓ Scattered to fairly widespread light/moderate rainfall/snowfall with isolated **thunderstorm & lightning & gusty winds (30-40 kmph)** very likely over Sub-Himalayan West Bengal & Sikkim during 18th-21st April, 2024.
- ✓ **Isolated heavy rainfall** very likely over Arunachal Pradesh during 19th-22nd; Assam & Meghalaya during 19th-21st and Nagaland, Manipur, Mizoram & Tripura during 18th-21st April, 2024. **Isolated very heavy rainfall** also very likely over Arunachal Pradesh on 20th April, 2024.
- ❖ A trough/Wind discontinuity runs from Comorin area to south Telangana in lower tropospheric levels. Under its influence:
 - ✓ Isolated light rainfall with isolated **thunderstorm & lightning** very likely over Madhya Maharashtra and Marathwada during 18th-22nd and Konkan & Goa on 18th April, 2024.
 - ✓ Isolated to scattered rainfall with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Vidarbha and Chhattisgarh during 19th-22nd and Madhya Pradesh on 20th & 21st April, 2024.
 - ✓ Scattered to fairly widespread light/moderate rainfall accompanied with isolated **thunderstorm & lightning** very likely over Kerala & Mahe during 18th-22nd and isolated rainfall with **thunderstorm & lightning & gusty winds (30-40 kmph)** over Coastal Andhra Pradesh & Yanam, Rayalaseema and Telangana during 19th-22nd; Tamil Nadu, Puducherry & Karaikal on 19th & 20th; Coastal Karnataka during 18th-20th; North Interior Karnataka during 18th-21st and South Interior Karnataka and Lakshadweep on 19th & 20th April, 2024.
 - ✓ **Isolated heavy rainfall** over Kerala & Mahe and South Interior Karnataka on 19th April, 2024.

Maximum temperature observation and forecast for next 5 days:

- ❖ Yesterday, maximum temperatures were in the range of 42-43°C over many parts of Coastal Andhra Pradesh & Yanam, south Odisha, Rayalaseema; at a few places over Gujarat state, Madhya Maharashtra and Telangana; 40-42°C over many places over Vidarbha & Marathwada; at a few places over west Madhya Pradesh, Jharkhand, Chhattisgarh, Gangetic West Bengal at isolated pockets over Uttar Pradesh, south east Madhya Pradesh, North Interior Karnataka and interior Tamil Nadu, Puducherry & Karaikal. These were above normal by 3-5°C at many places over Saurashtra & Kutch and above normal by 2-3°C over many parts in rest of the above areas.
- ❖ Rise in maximum temperatures by 2-3°C very likely over East India during next 2 days and no significant change thereafter.
- ❖ Gradual fall in maximum temperatures by 2-3°C very likely over Gujarat during next 4-5 days.
- ❖ No significant change in maximum temperatures very likely over Maharashtra during next 24 hours and fall by 2-3°C for subsequent 4 days.
- ❖ 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:

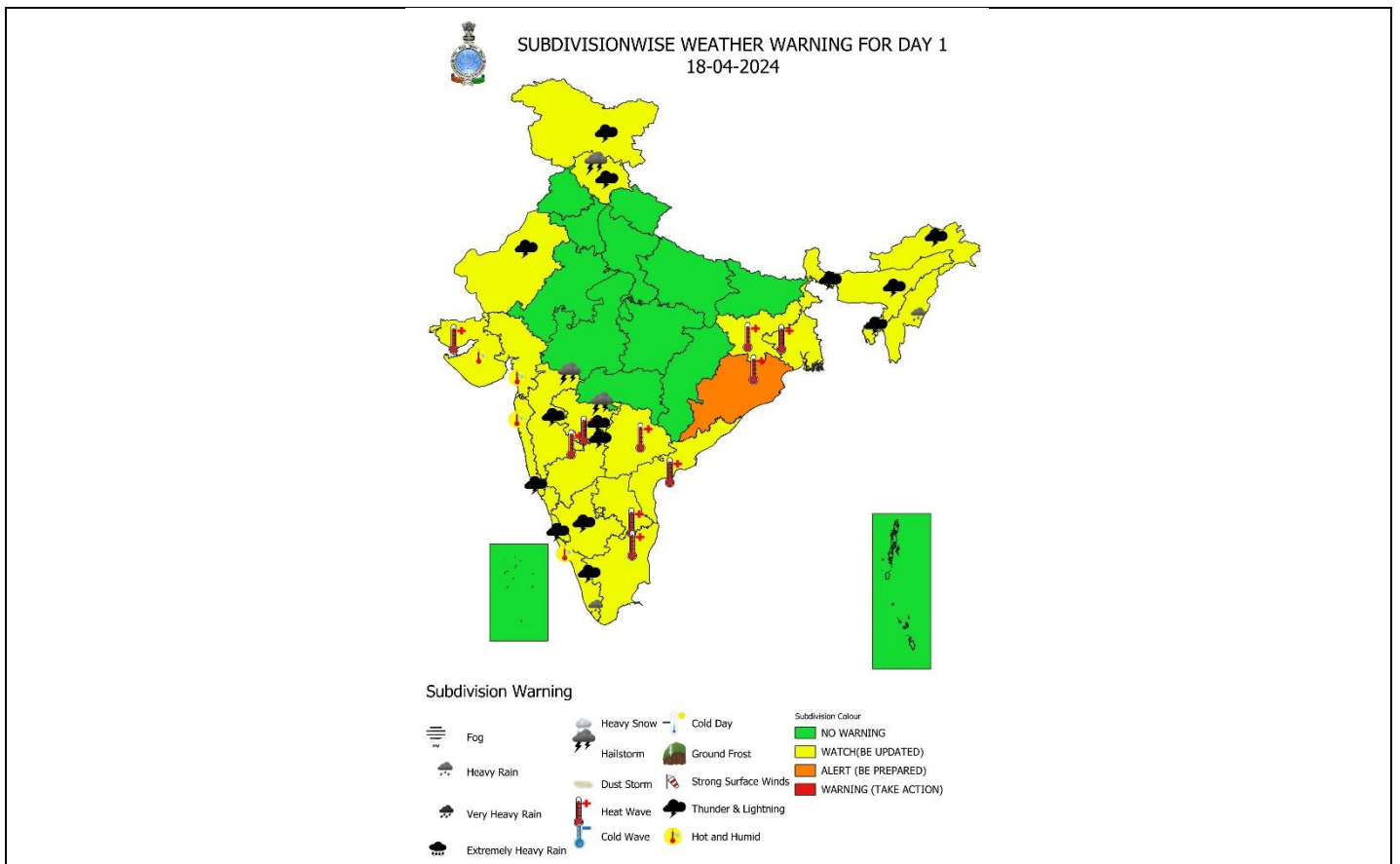
- ❖ **Heat Wave conditions** very likely to prevail in isolated/some pockets of Odisha during 18th-21st; Jharkhand and Gangetic West Bengal during 18th-22nd; Saurashtra & Kutch, Madhya Maharashtra and Marathwada on 18th; Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana and interior Tamil Nadu on 18th & 19th April, 2024. **Severe Heat Wave conditions also likely in isolated/some pockets of Odisha on 18th & 19th and Gangetic West Bengal during 19th-21st April, 2024.**
- ❖ **Hot and humid weather** very likely to prevail over Konkan & Goa on 18th & 19th; Gujarat state on 18th; Coastal Andhra Pradesh & Yanam, Rayalaseema and Telangana during 20th-22nd and Kerala & Mahe on 18th, 21st & 22nd April, 2024.
- ❖ **Warm night** very likely to prevail over Rayalaseema on 18th & 19th April, 2024.

For more details, kindly refer: https://mausam.imd.gov.in/responsive/all_india_forecast_bulletin.php

- ❖ **Light to moderate rainfall/snowfall** with isolated thunderstorm & lightning observed at most places over Arunachal Pradesh; at a few places over Sub-Himalayan West Bengal & Sikkim.
- ❖ **Light rainfall/snowfall** at a few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad.
- ❖ **Light/Moderate rainfall** with thunderstorm & lightning observed most places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura; at isolated places over Odisha, Madhya Maharashtra, Marathwada, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Telangana and Interior Karnataka.

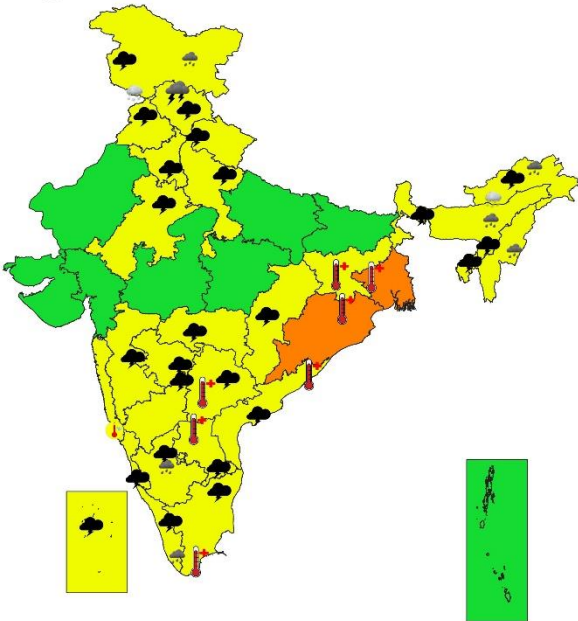
Significant amount of rainfall (in cm):

- ❖ **Nagaland, Manipur, Mizoram & Tripura:** Cti Arg (dist Sipahijala) 11, Gokulpur_aws (dist Gomati) 9, Kailashahar Aero (dist Unakoti) 6, Aizwal (dist Aizawl) 6, Kolasib Agri (dist Kolasib) 5, Kailashahar Aws (dist Unakoti) 5, Lengpui (dist Aizawl) 5, Arundhutinagar (dist West Tripura) 5, Dm Office Arg (dist West Tripura) 5, Kanchanpur (dist North Tripura) 5, Kolasib_aws (dist Kolasib) 5, Dharmanagar/ Panisagar (dist North Tripura) 4, Bagafa (dist South Tripura) 4, Sabroom (dist South Tripura) 4, Kvk South (dist South Tripura) 4;
- ❖ **Assam & Meghalaya:** Gharmura (dist Hailakandi) 4, Shella (dist East Khasi Hills) 3, Margherita (dist Tinsukia) 2, Amraghat (dist Cachar) 2, Dholai (dist Cachar) 2, Dholla Bazar (dist Tinsukia) 2, Jiagaon (dist Tinsukia) 2, Dhansiri Arg (dist Karbi Anglong) 2, Udaipur (dist Tinsukia) 2, Dhansiri (dist Karbi Anglong) 2;
- ❖ **Sub-Himalayan West Bengal & Sikkim:** Gangtok (dist East Sikkim) 4, Murti (dist Jalpaiguri) 4;
- ❖ **Kerala & Mahe:** Keerampara ARG (Ernakulam district) 5;
- ❖ **Madhya Maharashtra:** Sangli - Imd Obsy (dist Sangli) 3, Phaltan (dist Satara) 1, Khandala Bavda (dist Satara) 1, Satara - Imd Obsy (dist Satara) 1, Tasgaon (dist Sangli) 1;
- ❖ **Arunachal Pradesh:** Hawaii (dist Anjaw) 2, Basar (dist West Siang) 2, Basar_ Aws (dist West Siang) 2, Kibithu (dist Anjaw) 1, Anini_aws (dist Dibang Valley) 1, Tezu (dist Lohit) 1, Namsai (dist Lohit) 1, Bameng Circle Aws (dist East Kameng) 1, Miao (dist Changlang) 1, Namsai Kvk Aws (dist Lohit) 1, Seppa (dist East Kameng) 1, Roing (dist Lower Dibang Valley) 1, Pasighat_ Aero (dist East Siang) 1;
- ❖ **Marathawada:** Beed (dist Beed) 1, Deoni (dist Latur) 1;
- ❖ **Telangana:** Kamareddy (dist Kamareddy) 1, Kamareddy(arg) (dist Kamareddy) 1;
- ❖ **North Interior Karnataka:** Bhalki (dist Bidar) 1.





SUBDIVISIONWISE WEATHER WARNING FOR DAY 2
19-04-2024

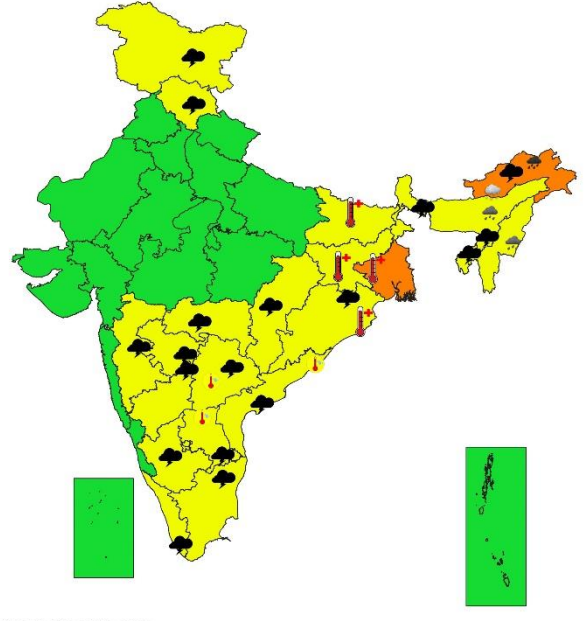


Subdivision Warning

Fog	Heavy Snow	Cold Day	Subdivision Colour
Heavy Rain	Hailstorm	Ground Frost	NO WARNING
Very Heavy Rain	Dust Storm	Strong Surface Winds	WATCH (BE UPDATED)
Extremely Heavy Rain	Heat Wave	Thunder & Lightning	ALERT (BE PREPARED)
	Cold Wave	Hot and Humid	WARNING (TAKE ACTION)



SUBDIVISIONWISE WEATHER WARNING FOR DAY 3
20-04-2024

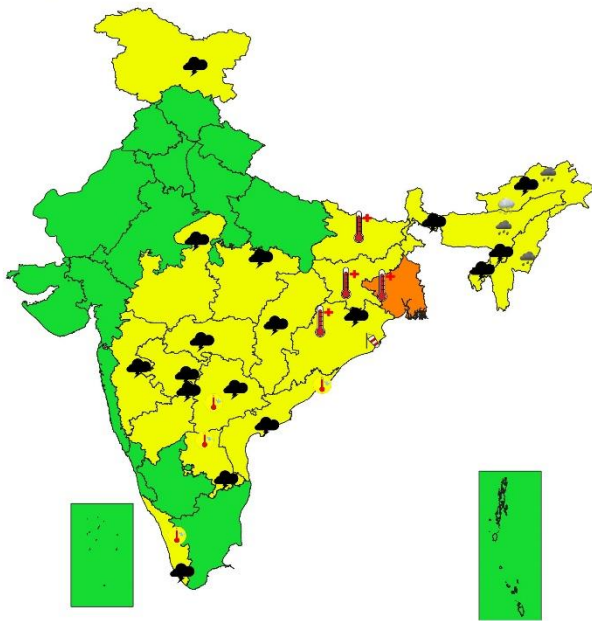


Subdivision Warning

Fog	Heavy Snow	Cold Day	Subdivision Colour
Heavy Rain	Hailstorm	Ground Frost	NO WARNING
Very Heavy Rain	Dust Storm	Strong Surface Winds	WATCH (BE UPDATED)
Extremely Heavy Rain	Heat Wave	Thunder & Lightning	ALERT (BE PREPARED)
	Cold Wave	Hot and Humid	WARNING (TAKE ACTION)



SUBDIVISIONWISE WEATHER WARNING FOR DAY 4
21-04-2024

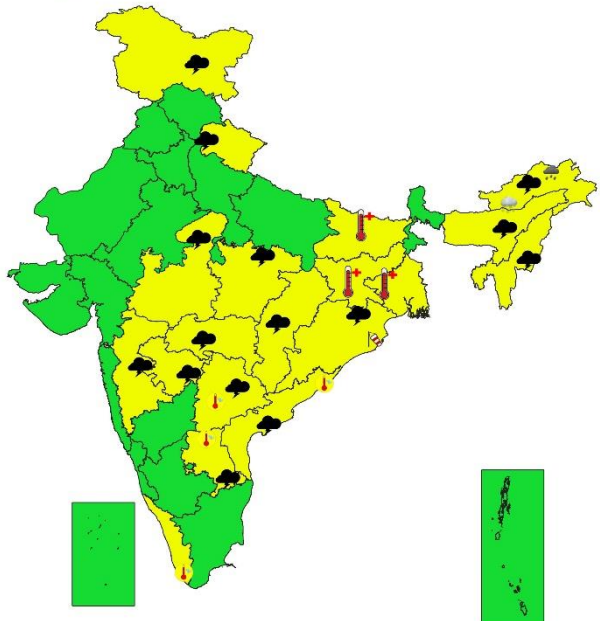


Subdivision Warning

Fog	Heavy Snow	Cold Day	Subdivision Colour
Heavy Rain	Hailstorm	Ground Frost	NO WARNING
Very Heavy Rain	Dust Storm	Strong Surface Winds	WATCH (BE UPDATED)
Extremely Heavy Rain	Heat Wave	Thunder & Lightning	ALERT (BE PREPARED)
	Cold Wave	Hot and Humid	WARNING (TAKE ACTION)



SUBDIVISIONWISE WEATHER WARNING FOR DAY 5
22-04-2024



Subdivision Warning

Fog	Heavy Snow	Cold Day	Subdivision Colour
Heavy Rain	Hailstorm	Ground Frost	NO WARNING
Very Heavy Rain	Dust Storm	Strong Surface Winds	WATCH (BE UPDATED)
Extremely Heavy Rain	Heat Wave	Thunder & Lightning	ALERT (BE PREPARED)
	Cold Wave	Hot and Humid	WARNING (TAKE ACTION)

Impact expected and action suggested due to thunderstorm accompanied with lightning/gusty winds & Hailstorm over Himachal Pradesh on 18th & 19th April, 2024.

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 kutchha 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/snowfall over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 19th 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 kuchcha houses during heavy rainfall as it may collapse anytime soon.
- ❖ Drive carefully.

IMPACT & ACTION SUGGESTED due to Heat Wave Conditions:

Orange alert Areas (Odisha & Gangetic West Bengal)

- ❖ 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– keep cool. Avoid dehydration.
- ❖ Drink sufficient water- even if not thirsty.
- ❖ Use ORS, homemade drinks like lassi, torani (rice water), lemon water, buttermilk, etc. to keep yourself hydrated

Yellow alert Areas (Jharkhand, Saurashtra & Kutch, Madhya Maharashtra, Marathwada, Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana and interior Tamil Nadu)

- ❖ 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.






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 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)

Subdivision Warning

-  Heavy Rain
-  Heavy Snow
-  Thunderstorms & Lightning
-  Hailstorm

-  Dust Storm
-  Strong Surface Winds
-  Heat Wave
-  Cold wave
-  Fog

Subdivision color

-  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

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°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 < 1km
 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)