

#### National Weather Forecasting Centre India Meteorological Department Ministry of Earth Sciences

Wednesday, April 24, 2024 Time of Issue: 0745 hours IST (MORNING)

#### ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

## **Significant Weather Features:**

#### **Weather Systems and Forecast & Warnings:**

- ❖ A cyclonic circulation lies over Sub-Himalayan West Bengal and a trough runs from this cyclonic circulation to north Bay of Bengal in lower tropospheric levels. Another cyclonic circulation lies over northeast Assam in lower tropospheric levels. Under their influence:
  - ✓ Fairly widespread to widespread light to moderate rainfall/snowfall accompanied with isolated **thunderstorm & lightning & gusty winds (30-40 kmph)** very likely over Arunachal Pradesh, and isolated to scattered rainfall over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during 24<sup>th</sup> -29<sup>th</sup> April, 2024.
  - ✓ Isolated light to moderate rainfall accompanied with isolated **thunderstorm & lightning & gusty winds (30-40 kmph)** very likely over Sub-Himalayan West Bengal & Sikkim during 24<sup>th</sup>-26<sup>th</sup>; Odisha on 24<sup>th</sup> April, 2024.
  - ✓ Isolated heavy rainfall very likely over Arunachal Pradesh on 24th, 27th & 28th April, 2024
- ❖ A fresh Western Disturbance is likely to affect northwest India from 26<sup>th</sup> April, 2024. Under its influence:
  - ✓ Scattered to fairly widespread light to moderate rainfall/snowfall accompanied with **thunderstorm**, **lightning** very likely over the same region during 26<sup>th</sup>-28<sup>th</sup> April, 2024 with possibility of **hailstorm over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 26<sup>th</sup>**, **Himachal Pradesh & Uttarakhand on 27**<sup>th</sup> & 28<sup>th</sup> April, 2024.
  - ✓ Isolated **Heavy rainfall** likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 27<sup>th</sup> April, 2024.
  - ✓ Isolated rainfall accompanied with **thunderstorm**, **lightning & gusty winds (30-40 kmph)** very likely over Punjab and Haryana-Chandigarh-Delhi on 26<sup>th</sup>, 27<sup>th</sup> & 28<sup>th</sup>; East Rajasthan on 26<sup>th</sup> April, 2024.
  - ✓ Isolated **Hailstorm** very likely over Punjab & Haryana on 26<sup>th</sup> & 27<sup>th</sup> April, 2024.
- ❖ A trough/wind discontinuity runs from Madhya Maharashtra to Kerala across Karnataka in lower tropospheric levels. Under its influence:
  - ✓ Isolated light rainfall accompanied with thunderstorm, lightning & gusty winds (30-50 kmph) very likely over Madhya Maharashtra and Marathwada on 24<sup>th</sup> & 25<sup>th</sup> April, 2024.
  - ✓ Isolated to scattered light to moderate rainfall accompanied with isolated thunderstorm & lightning very likely over Kerala & Mahe during 24th -28th; Interior Karnataka, Telangana and Tamil Nadu on 24th 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 isolated pockets over south Coastal Andhra Pradesh & Yanam and north Tamil Nadu. These were in the range of 40-42°C over many parts of Telangana, Tamil Nadu, Telangana, Gangetic West Bengal, Bihar; some parts of Coastal Andhra Pradesh, south Coastal Andhra Pradesh & Yanam, Odisha, East Madhya Pradesh, Jharkhand, East Uttar Pradesh; at isolated pockets over Madhya Maharashtra, southwest Madhya Pradesh and Vidarbha. These were above normal by 3-5°C over many parts of Gangetic West Bengal and Sikkim; at isolated pockets over coastal Odisha, Coastal Andhra Pradesh & Yanam, Tamil Nadu, Puducherry & Karaikal, northeast Jharkhand and east Bihar.

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

- ❖ Heat Wave to severe heat wave conditions very likely to prevail in some pockets over Gangetic West Bengal & in isolated pockets over coastal Odisha during next 5 days. Heat wave conditions in isolated pockets over Tamil Nadu on 24<sup>th</sup>; Konkan on 27<sup>th</sup> and Interior Karnataka, Rayalaseema, Sub-Himalayan West Bengal & Sikkim, Jharkhand, Bihar, Telangana, West Uttar Pradesh and Coastal Andhra Pradesh & Yanam during 24<sup>th</sup>-28<sup>th</sup> April, 2024.
- ❖ Hot and humid weather very likely to prevail over Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal, Coastal Karnataka during 24<sup>th</sup>-28<sup>th</sup>; Konkan & Goa, Assam & Meghalaya, Tripura during 24<sup>th</sup>-26<sup>th</sup>; Coastal Andhra Pradesh & Yanam and Rayalaseema on 24<sup>th</sup> April, 2024.
- **❖ Warm night conditions** with day maximum temperature exceeding 40°C very likely to prevail over Odisha during 25<sup>th</sup> 28<sup>th</sup> April, 2024.







## **Main Weather Observations:**

- ❖ Rainfall/snowfall distribution (from 0830 hours IST of today to 1730 hours IST of yesterday): at isolated places over Himachal Pradesh and Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad.
- ❖ Rainfall distribution (from 0830 hours IST of today to 1730 hours IST of yesterday): at isolated places over Assam & Meghalaya, Punjab, Haryana-Chandigarh-Delhi, Marathwada, Vidarbha, East Madhya Pradesh, Chhattisgarh, Kerala & Mahe.
- ❖ **Significant amount of rainfall** (from 0830 hours IST of today to 1730 hours IST of yesterday): (in cm): **Kerala**: Punalur-3.
- **❖ Hailstorm** observed (from 0830 hours IST of today to 1730 hours IST of yesterday): at isolated places over Madhya Pradesh and Vidarbha.
- ❖ Gusty winds (in kmph) (from 0830 hours IST of today to 1730 hours IST of yesterday) reported in Madhya Pradesh: Chhindwara-85, Mandla-63 kmph, Shahdol-58, Betul-56.
- ❖ Yesterday, **Heat Wave to severe heat wave conditions prevailed** in isolated pockets over coastal Odisha and Gangetic West Bengal. **Heat wave conditions are prevailing over Odisha since 15**<sup>th</sup> **and over Gangetic West Bengal since 17**<sup>th</sup> **April.**
- ❖ Minimum Temperature Departures (as on 23-04-2024): Minimum temperatures were appreciably above normal (3.1°C to 5.0°C) at isolated places over Sub-Himalayan West Bengal & Sikkim; above normal (1.6°C to 3.0°C) at many places over Bihar and Assam & Meghalaya; at a few places over Jharkhand; at isolated places over Arunachal Pradesh, Uttar Pradesh, East Madhya Pradesh, Odisha, Gangetic West Bengal, Madhya Maharashtra, South Interior Karnataka, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe. These were below normal (-1.6°C to -3.0°C) at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Rajasthan, Chhattisgarh, Vidarbha and near normal over rest parts of the country. Yesterday, the lowest minimum temperature of 18.0°C was reported at Sikar (East Rajasthan) over the plains of the country.
- ❖ Maximum Temperature Departures (as on 23-04-2024): Maximum temperatures were markedly above normal(5.1°C or more) at many places over Sub-Himalayan West Bengal & Sikkim; at isolated places over Bihar; appreciably above normal (3.1°C to 5.0°C) at a few places over Gangetic West Bengal; at isolated places over Nagaland, Manipur, Mizoram & Tripura and Jharkhand; above normal (1.6°C to 3.0°C) at many places over Assam & Meghalaya; at isolated places over Arunachal Pradesh, East Uttar Pradesh and Odisha. These were appreciably below normal (-3.1°C to -5.0°C) at isolated places over Himachal Pradesh, Punjab and Haryana; below normal (-1.6°C to -3.0°C) at isolated places over Uttarakhand, East Rajasthan, Vidarbha, Chhattisgarh and East Madhya Pradesh and near normal over rest parts of the country. Yesterday, the highest maximum temperature of 43.5°C was reported at Anantapur (Rayalaseema) over the country.



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## Meteorological Analysis (Based on 0530 hours IST)

- The Western Disturbance now seen as a trough in middle tropospheric westerlies with its axis at 5.8 km above mean sea level roughly along Long. 72°E to the north of Lat. 30°N.
- The cyclonic circulation over northeast Rajasthan & neighbourhood at 0.9 km above mean sea level persists.
- ❖ The cyclonic circulation over northeast Assam & neighbourhood extending upto 1.5 km above mean sea level persists.
- ❖ The cyclonic circulation over Sub-Himalayan West Bengal & neighbourhood at 0.9 km above mean sea level persists.
- ❖ The trough from above cyclonic circulation over Sub-Himalayan West Bengal to north Bay of Bengal at 0.9 km above mean sea level persists.
- ❖ The trough/wind discontinuity from Madhya Maharashtra to Kerala across Karnataka at 0.9 km above mean sea level persists.
- ❖ The cyclonic circulation over South Interior Karnataka & neighbourhood at 1.5 km above mean sea level persists.
- ❖ The cyclonic circulation over Comorin area at 1.5 km above mean sea level persists.
- A fresh Western Disturbance is likely to affect Western Himalayan Region from 26<sup>th</sup> April, 2024.

## Weather Forecast for next 7 days (Upto 0830 hours IST of 01st May, 2024)

- ❖ Meteorological sub-division wise detailed 7 days rainfall forecast is given in Table-1.
- ❖ Gradual rise in maximum temperatures by 2-4°C very likely over Northwest & East India and Maharashtra during next 4-5 days.
- ❖ No significant change in maximum temperatures very likely over Gujarat state during next 2 days and rise by 2-4°C thereafter.
- ❖ No significant change in maximum temperatures very likely over rest parts of the country.

# Weather Outlook for subsequent 3 days (During 01st-03rd May, 2024)

- ❖ Isolated to scattered light/moderate rainfall/snowfall likely over Northeast and Northwest India.
- ❖ Isolated light rainfall likely over plains of Central India, South Interior Karnataka and Kerala & Mahe.
- ❖ Dry weather likely to prevail over rest parts of the country.



## राष्ट्रीय मौसम पूर्वानुमान केन्द्र भारत मौसम विज्ञान विभाग पृथ्वी विज्ञान मंत्रालय



### National Weather Forecasting Centre India Meteorological Department Ministry of Earth Sciences

## Table-1

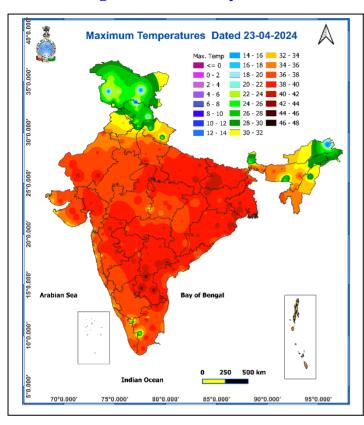
7 Days Rainfall Forecast								
S. No.	Subdivision	24- Apr Day 1	25- Apr Day 2	26- Apr Day 3	27- Apr Day 4	28- Apr Day 5	29- Apr Day 6	30- Apr Day 7
1	ANDAMAN & NICOBAR ISLANDS	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
2	ARUNACHAL PRADESH	WS	FWS	FWS	FWS	WS	WS	WS
3	ASSAM & MEGHALAYA	SCT	SCT	SCT	SCT	FWS	FWS	FWS
4	NAGALAND, MANIPUR, MIZORAM & TRIPURA	ISOL	ISOL	ISOL	SCT	SCT	FWS	FWS
5	SUB-HIMALAYAN WEST BENGAL & SIKKIM	ISOL						
6	GANGETIC WEST BENGAL	DRY						
7	ODISHA	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
8	JHARKHAND	DRY						
9	BIHAR	DRY	DRY	DRY	DRY	DRY	ISOL	ISOL
10	EAST UTTAR PRADESH	DRY						
11	WEST UTTAR PRADESH	DRY	DRY	ISOL	DRY	DRY	DRY	DRY
12	UTTARAKHAND	ISOL	DRY	ISOL	SCT	SCT	ISOL	DRY
13	HARYANA CHANDIGARH & DELHI	DRY	DRY	ISOL	ISOL	ISOL	DRY	DRY
14	PUNJAB	DRY	DRY	ISOL	ISOL	ISOL	DRY	DRY
15	HIMACHAL PRADESH	ISOL	DRY	FWS	FWS	FWS	ISOL	ISOL
16	JAMMU & KASHMIR AND LADAKH	ISOL	ISOL	FWS	FWS	WS	SCT	ISOL
17	WEST RAJASTHAN	DRY	DRY	ISOL	DRY	DRY	DRY	DRY
18	EAST RAJASTHAN	DRY	ISOL	ISOL	DRY	DRY	DRY	DRY
19	WEST MADHYA PRADESH	ISOL	ISOL	ISOL	ISOL	DRY	DRY	DRY
20	EAST MADHYA PRADESH	ISOL	ISOL	ISOL	ISOL	DRY	DRY	DRY
21	GUJARAT REGION	DRY						
22	SAURASHTRA & KUTCH	DRY						
23	KONKAN & GOA	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY
24	MADHYA MAHARASHTRA	ISOL	ISOL	ISOL	ISOL	ISOL	DRY	DRY
25	MARATHAWADA	ISOL	ISOL	ISOL	ISOL	ISOL	DRY	DRY
26	VIDARBHA	ISOL	ISOL	ISOL	ISOL	ISOL	DRY	DRY
27	CHHATTISGARH	ISOL	ISOL	ISOL	ISOL	ISOL	DRY	DRY
28	COASTAL ANDHRA PRADESH & YANAM	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY
29	TELANGANA	ISOL	DRY	DRY	ISOL	ISOL	ISOL	DRY
30	RAYALASEEMA	DRY						
31	TAMILNADU PUDUCHERRY & KARAIKAL	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY
32	COASTAL KARNATAKA	DRY						
33	NORTH INTERIOR KARNATAKA	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
34	SOUTH INTERIOR KARNATAKA	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
35	KERALA & MAHE	ISOL						
36	LAKSHADWEEP	SCT	DRY	DRY	DRY	DRY	DRY	DRY

Legend	Legend Category	
WS	Widespread/Most Places	76-100
FWS	Fairly Widespread/Many Places	51-75
SCT	Scattered/ A Few Places	26-50
ISOL	Isolated Places	1-25
DRY	No Rain	0





#### Fig. 2: Departure of Maximum Temperatures



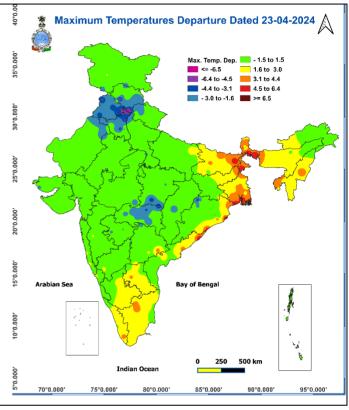
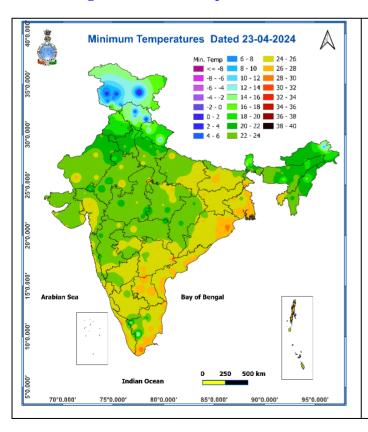


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures



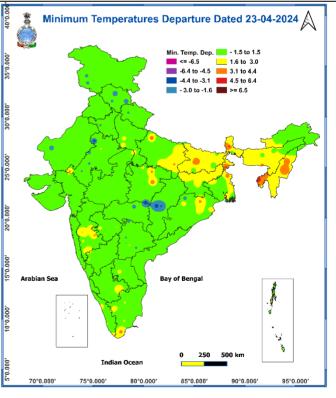


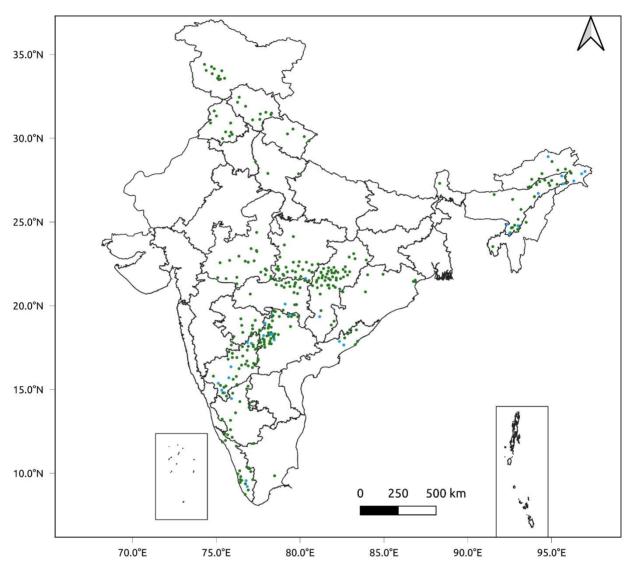




Fig. 5: Accumulated Rainfall (mm) during past 24 hours



24 Hr cumulative rainfall recorded over different stations during 0830 IST of 22-4-2024 to 0830 IST of 23-4-2024

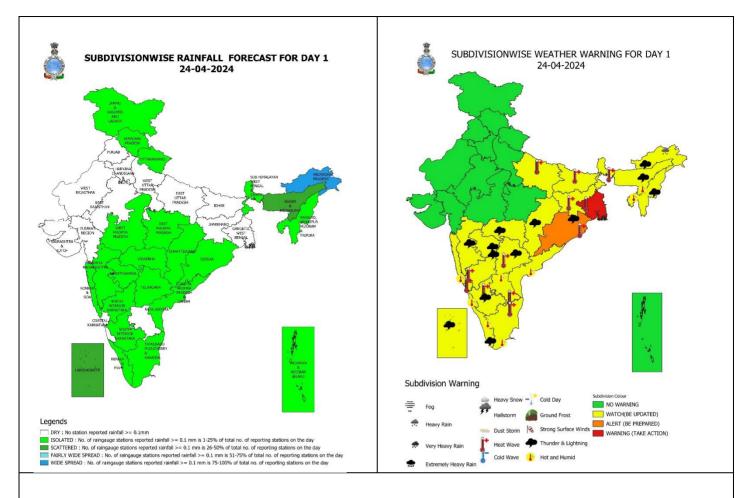


# Legends

- Very Light to Light Rainfall (0.1 15.5 mm)
- Moderate Rainfall (15.6 64.4 mm)
- Heavy Rainfall (64.5 115.5 mm)
- Very Heavy Rainfall (115.6 204.4 mm)
- Extremely Heavy Rainfall (>=204.5 mm)





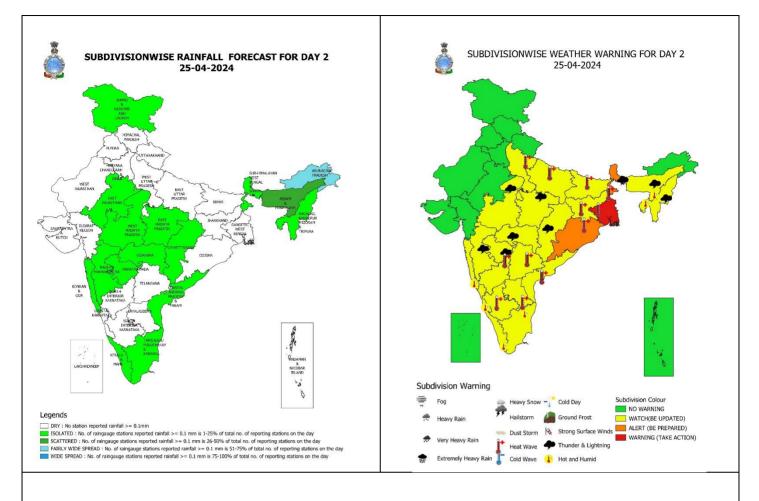


# 24 April (Day 1):

- ❖ Thunderstorm accompanied with lightning & gusty winds (speed reaching 40-50 kmph) very likely at isolated places over Assam & Meghalaya; with lightning & gusty winds (speed reaching 30-40 kmph) at isolated places over Vidarbha, Chhattisgarh, Nagaland, Manipur, Madhya Maharashtra, Marathwada, Telangana, Interior Karnataka; with lightning at isolated places over Odisha, Arunachal Pradesh, Kerala & Mahe and Lakshadweep.
- **Heavy rainfall** very likely at isolated places over Arunachal Pradesh.
- Hot and humid weather very likely to prevail over Assam & Meghalaya, Tripura, Konkan & Goa, Rayalaseema, Coastal Andhra Pradesh & Yanam, Coastal Karnataka, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.
- ❖ Heat wave to severe heat wave conditions very likely to prevail in some pockets over Gangetic West Bengal and in isolated pockets over coastal Odisha; heat wave conditions in isolated pockets over East Uttar Pradesh, Sub-Himalayan West Bengal, Bihar, Jharkhand, Tamil Nadu, Puducherry & Karaikal, Rayalaseema, Telangana, Coastal Andhra Pradesh & Yanam and Interior Karnataka.





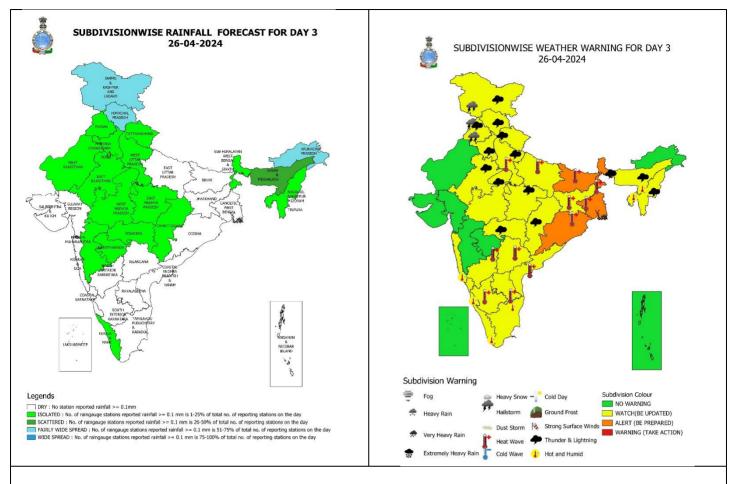


# 25 April (Day 2):

- ❖ Thunderstorm accompanied with lightning & gusty winds (speed reaching 30-40 kmph) very likely at isolated places over Madhya Pradesh, Vidarbha, Chhattisgarh, Assam & Meghalaya, Madhya Maharashtra, Marathwada; with lightning at isolated places over Sub-Himalayan West Bengal & Sikkim, Nagaland, Manipur, Mizoram & Tripura.
- ❖ Hot and humid weather very likely to prevail over Assam & Meghalaya, Tripura, Konkan & Goa, Coastal Karnataka, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.
- ❖ Heat wave to severe heat wave conditions very likely to prevail in some pockets over Gangetic West Bengal and in isolated pockets over coastal Odisha; heat wave conditions in isolated pockets over Uttar Pradesh, Sub-Himalayan West Bengal, Jharkhand, Bihar, Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana and Interior Karnataka.
- **Warm Night conditions** very likely to prevail in isolated pockets over Odisha.





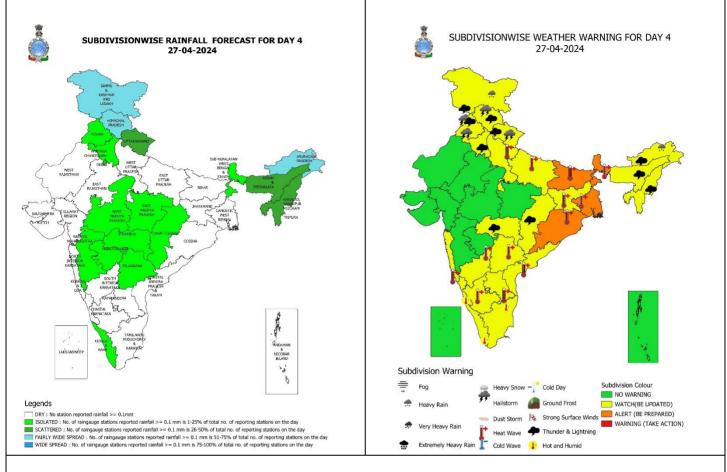


# 26 April (Day 3):

- ❖ Thunderstorm accompanied with lightning & gusty winds (speed reaching 40-50 kmph) with hailstorm very likely at isolated places over Haryana-Chandigarh-Delhi; with gusty winds (speed reaching 30-40 kmph) and hailstorm likely at isolated places over Punjab; with lightning and hailstorm at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; with gusty winds (speed reaching 30-40 kmph) at isolated places over Uttarakhand, East Rajasthan, Madhya Pradesh, Chhattisgarh and Nagaland, Manipur, Mizoram & Tripura; with lightening at isolated places over Himachal Pradesh, West Uttar Pradesh, Vidarbha, Assam & Meghalaya and Sub-Himalayan West Bengal & Sikkim.
- ❖ Hot and humid weather very likely to prevail over Assam & Meghalaya, Tripura, Konkan & Goa, Coastal Karnataka, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.
- ❖ Heat wave to severe heat wave conditions very likely to prevail in some pockets over Gangetic West Bengal and in isolated pockets over coastal Odisha; heat wave conditions in isolated pockets over Uttar Pradesh, Sub-Himalayan West Bengal, Jharkhand, Bihar, Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana and Interior Karnataka.
- **❖ Warm Night conditions** very likely to prevail in isolated pockets over Odisha.





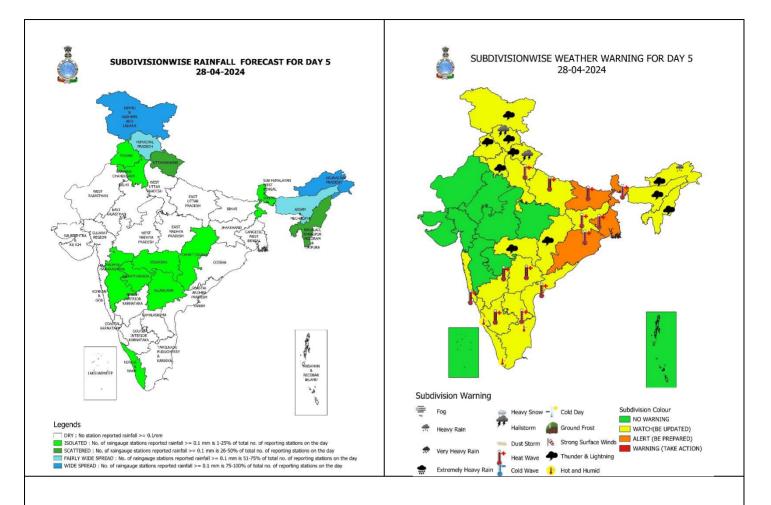


## 27 April (Day 4):

- ❖ Thunderstorm accompanied with lightning & gusty winds (speed reaching 40-50 kmph) with hailstorm likely at isolated places over Haryana-Chandigarh-Delhi and Punjab; with gusty winds (speed reaching 30-40 kmph) and hailstorm at isolated places over Uttarakhand; with lightning and hailstorm at isolated places over Himachal Pradesh; with lightening at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Vidarbha, Chhattisgarh, Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- \* Heavy rainfall likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Arunachal Pradesh.
- ❖ Hot and humid weather likely to prevail over Coastal Karnataka, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.
- ❖ Heat wave to severe heat wave conditions likely to prevail in some pockets over Gangetic West Bengal and in isolated pockets over coastal Odisha; heat wave conditions in isolated pockets over Uttar Pradesh, Sub-Himalayan West Bengal, Jharkhand, Bihar, Konkan & Goa, Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana and Interior Karnataka.
- ❖ Warm Night conditions likely to prevail in isolated pockets over Odisha.







# 28 April (Day 5):

- ❖ Thunderstorm accompanied with gusty winds (speed reaching 30-40 kmph) and hailstorm likely at isolated places over Uttarakhand; with lightning and hailstorm at isolated places over Himachal Pradesh; with lightning & gusty winds (speed reaching 30-40 kmph) at isolated places over Haryana-Chandigarh-Delhi and Punjab; with lightning at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Vidarbha, Chhattisgarh, Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- ❖ Heavy rainfall likely at isolated places over Arunachal Pradesh.
- ❖ Hot and humid weather likely to prevail over Coastal Karnataka, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.
- ❖ Heat wave to severe heat wave conditions likely to prevail in some pockets over Gangetic West Bengal and in isolated pockets over coastal Odisha; heat wave conditions in isolated pockets over Uttar Pradesh, Sub-Himalayan West Bengal, Jharkhand, Bihar, Konkan & Goa, Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana and Interior Karnataka.
- ❖ Warm Night conditions likely to prevail in isolated pockets over Odisha.







#### 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 Widespred (FWS/ Many Places)	1-25	isolated (ISOL)

#### 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





#### **LEGENDS Probabilistic Forecast** WARNING Probability of Occurrence (%) WARNING (TAKE ACTION) Terms ALERT ( BE PREPARED) Likely WATCH (BE UPDATED) Very Likely Most Likely > 75 Heavy: 64.5 to 115.5 mm/cm \* Very Heavy: 115.6 to 204.4 mm/cm\* Extremely Heavy: > 204.4 mm/cm Rain/ Snow When maximum temperature of a station reaches ≥40° C for plains and ≥30° 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 ≥6.5° C (b). Based on Actual maximum temperature **Heat Wave** Heat Wave: When actual maximum temperature ≥45°C Severe Heat Wave: When actual maximum temperature ≥47°C (c). Criteria for heat wave for coastal stations When maximum temperature departure is >4.5°C from normal. Heat Wave may be described provided maximum temperature ≥37°C When maximum temperature remains 40°C **J+**Warm Night Warm Night: When minimum temperature departure 4.5 °C to 6.4 °C Severe Warm Night: When minimum temperature departure >6.4 °C. When minimum temperature of a station ≤10°C for plains and ≤0°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 ≤ -6.5 °C (b) Based on actual Minimum Temperature (for Plains only) Cold Wave Cold Wave : When Minimum Temperature is ≤ 4.0 °C Severe Cold Wave: When Minimum Temperature is ≤ 2.0 °C When Minimum Temperature departure is ≤-4.5 °C & actual Minimum Temperature is ≤ 15 °C When minimum temperature of a station ≤10°C for plains and ≤0°C for hilly regions Based on departure Cold Day: Maximum Temperature Departure from normal -4.5 °C to -6.4 °C. **Cold Day** Severe Cold Day: Maximum Temperature Departure from normal ≤ -6.5 °C Phenomenon of small droplets suspended in air and the horizontal visibility < 1km Moderate Fog: When the visibility between 500-200 metres 0 Dense Fog: when the visibility between 50-200 metres Fog Very Dense Fog: when the visibility < 50 metres 44 Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder) Thunderstorm An ensemble of particles of dust or sand energetically lifted to great heights by a strong and **Dust/Sand** turbulent wind. Storm Ice deposits on ground 55 Air temperature ≤4°C ( over Plains) Frost A strong wind that rises suddenly, lasts for atleast 1 minute. Moderate: Wind speed 52-61 kmph 4 Severe: Wind speed 62-87 kmph Squall Very Severe: Wind speed >87 kmph 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 Sea State Phenomenal: Wind speed >117 kmph (>63 knots) & Wave height >14 metre Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots) Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots) 9 Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots) Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots) Cyclone Super Cyclone Strom: Wind speed >220 kmph (>119 knots)