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



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

Thursday, May 16, 2024 Time of Issue: 0800 hours IST (MORNING)

#### ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

#### **Significant Weather Features:**

#### Weather Systems and Forecast & Warnings:

- Southwest Monsoon is very likely to advance into South Andaman Sea, some parts of Southeast Bay of Bengal and Nicobar Islands around 19th May, 2024.
- A cyclonic circulation lies over southwest Bay of Bengal & adjoining south Sri Lank and a trough runs from this cyclonic circulation to Lakshadweep in lower tropospheric levels. Another trough runs from South Interior Karnataka to east Vidarbha in lower tropospheric levels. Under their influence:
- ➤ Isolated light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (40-60 kmph)** very likely over Konkan & Goa, Madhya Maharashtra, Marathawada on 16<sup>th</sup> & 17<sup>th</sup>; over Madhya Pradesh, Vidarbha, Chhattisgarh, Odisha, Gujarat Region on 16<sup>th</sup> May, Isolated **Hailstorm activity** very likely over Madhya Maharashtra on 16<sup>th</sup> May, 2024.
- Scattered to fairly widespread with light to moderate rainfall very likely over Andaman & Nicobar Islands during next 7 days. *Isolated heavy rainfall very likely over Nicobar Islands on 19th May.*
- > Scattered to Fairly widespread light to moderate rainfall accompanied with **thunderstorm**, **lightning & gusty winds (40-50 kmph)** likely over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Lakshadweep, Karnataka and Isolated light to moderate rainfall accompanied with **thunderstorm**, **lightning & gusty winds (30-40 kmph)** over Coastal Andhra Pradesh & Yanam, Telangana and Rayalaseema during next 7 days.
- ✓ Isolated heavy rainfall very likely over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal & South Interior Karnataka during 16th-20th May, 2024.
- ✓ Isolated very heavy rainfall also very likely over Tamil Nadu on 18th & 19th and Kerala on 19th May, 2024.
- A cyclonic circulation lies over Assam & neighbourhood and a trough in westerlies runs roughly along long. 88°E to the north of lat. 21°N in lower tropospheric levels. Under its influence:
- > Scattered to fairly widespread light to moderate rainfall accompanied with **thunderstorm**, **lightning & gusty winds (40-50 kmph)** very likely over Sub-Himalayan West Bengal & Sikkim during next 7 days.
- Scattered light to moderate rainfall accompanied with **thunderstorm, lightning & squally winds (30-40 kmph)** likely over Arunachal Pradesh, Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura during 16<sup>th</sup> -19<sup>th</sup> May, 2024.
- Isolated heavy rainfall also likely over Arunachal Pradesh during 16th-19th and Assam & Meghalaya on 17th-19th May, 2024.
- ❖ A fresh Western Disturbance likely to affect Western Himalayan region form 17<sup>th</sup> May. Under their influence; Isolated to scattered light to moderate rainfall activity very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand during 17<sup>th</sup>-19<sup>th</sup> May, 2024.

#### **Maximum temperature observation:**

❖ Areas having maximum temperatures greater than 40°C: Yesterday, maximum temperatures were in the range of 40-42°C in many parts of Rajasthan, Uttar Pradesh; in some parts of Punjab, Haryana, Delhi and in isolated pockets of Madhya Pradesh, Madhya Maharashtra, Vidarbha Odisha, Bihar Rayalaseema & Vidarbha.

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

- ♦ Heat wave conditions very likely in isolated/some pockets over Gujarat Region on 16th & 17th; Konkan on 16th; Saurashtra & Kutch on 16th & 17th; over West Rajasthan during 16th-20th; over Punjab, south Haryana during 16th-19th and north Madhya Pradesh, East Rajasthan, Uttar Pradesh, Bihar during 17th-19th May, 2024.
- Heat wave conditions very likely in isolated pockets over Delhi, Jharkhand, Gangetic West Bengal, Odisha on 18th & 19th May, 2024
- **♦ Severe Heat wave conditions** also very likely in isolated/some parts of West Rajasthan during 17<sup>th</sup>-19<sup>th</sup>; Punjab, south Haryana on 18<sup>th</sup> & 19<sup>th</sup>; East Rajasthan on 19<sup>th</sup> May, 2024.
- ❖ Hot and humid weather very likely to prevail over Assam & Meghalaya, Tripura, Sub-Himalayan West Bengal, Bihar on 16th May.







#### **Main Weather Observations:**

- ❖ Rainfall distribution (from 0830 hours IST to 1730 hours IST of yesterday): at isolated places over Saurashtra & Kutch, Assam & Meghalaya, Vidarbha, Kerala & Mahe, and Tamil Nadu, Puducherry & Karaikal.
- ❖ **Heavy rainfall** observed at isolated places over Tamil Nadu.
- ❖ Significant amount of rainfall (from 0830 hours IST to 1730 hours IST of yesterday) (in cm): Assam & Meghalaya: Shillong-2; Vidarbha: Gadchiroli-2; Kerala & Mahe: Kochi-2; Tamil Nadu: Adhiramapatinam-7.
- ❖ Maximum wind speed (from 0830 hours IST to 1730 hours IST of yesterday): (in knots): Uttarakhand: Champawat-33(AWS), Pauri Garhwal-33(AWS), Rudraprayag-30(AWS); Saurashtra & Kutch: Rajkot-34(AWS), Surendranagar-31(AWS).
- **Yesterday, Heat wave conditions** observed at isolated pocket of Gujarat region.
- ❖ Minimum Temperature Departures (as on 15-05-2024): Minimum temperatures were appreciably above normal (3.1°C to 5.0°C) at isolated places over Arunachal Pradesh, Assam & Meghalaya and Bihar; above normal (1.6°C to 3.0°C) at most places over Nagaland, Manipur, Mizoram & Tripura; at a few places over Andaman & Nicobar Islands and at isolated places over East Uttar Pradesh, Gangetic West Bengal, Jharkhand, Madhya Maharashtra and Kerala & Mahe. These were markedly below normal (-5.1°C or less) at isolated places over East Madhya Pradesh and Telangana; below normal (-1.6°C to -3.0°C) at a few places over West Madhya Pradesh, Vidarbha and Marathwada and at isolated places over Himachal Pradesh, Haryana-Chandigarh-Delhi, West Uttar Pradesh, Rajasthan, Chhattisgarh, Coastal & North Interior Karnataka and Tamil Nadu, Puducherry & Karaikal and near normal over rest parts of the country. Yesterday, the lowest minimum temperature of 19.5°C was reported at Dehri (Bihar) over the plains of the country.
- ❖ Maximum Temperature Departures (as on 15-05-2024): Maximum temperatures were markedly above normal (5.1°C or more) at few places over Arunachal Pradesh; at isolated places over Assam & Meghalaya; appreciably above normal (3.1°C to 5.0°C) at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Punjab, Himachal Pradesh, Bihar, Nagaland, Manipur, Mizoram & Tripura, Gujarat state and Konkan & Goa; above normal (1.6°C to 3.0°C) at many places over Uttarakhand, Haryana-Chandigarh-Delhi, Sub-Himalayan West Bengal & Sikkim; at a few places over Uttar Pradesh and Kerala & Mahe; at isolated places over Rajasthan and Jharkhand. These were below normal (-1.6°C to -3.0°C) at a few places over East Madhya Pradesh, Vidarbha, Madhya Maharashtra and Telangana; at isolated places over West Madhya Pradesh, Chhattisgarh, Marathwada, Coastal Andhra Pradesh & Yanam, Rayalaseema and Tamil Nadu, Puducherry & Karaikal near normal over rest parts of the country. Yesterday, the highest maximum temperature of 44.0°C was reported at Jaisalmer (Rajasthan) over the country.



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



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

#### Meteorological Analysis (Based on 0530 hours IST)

- The trough in mid-tropospheric westerlies with its axis at 5.8 km above mean sea level now runs roughly along long. 82°E to the north of lat. 25°N.
- ❖ The cyclonic circulation over south Haryana & neighbourhood at 0.9 km above mean sea level persists.
- The cyclonic circulation over northwest Uttar Pradesh & neighbourhood between 1.5 km & 3.1 km above mean sea level persists.
- ❖ The cyclonic circulation over central parts of Madhya Pradesh & neighbourhood at 1.5 km above mean sea level persists.
- ❖ The cyclonic circulation over Assam & neighbourhood at 0.9 km above mean sea level persists.
- ❖ The trough in westerlies roughly along long. 88°E to the north of lat. 21°N at 3.1 km above mean sea level persists.
- The cyclonic circulation over east Vidarbha & neighbourhood at 0.9 km above mean sea level persists.
- ❖ The trough from South Interior Karnataka to east Vidarbha at 0.9 km above mean sea level persists.
- ❖ The cyclonic circulation over southwest Bay of Bengal & adjoining south Sri Lanka extending upto 4.5 km above mean sea level tilting southwestwards with height persists.
- ❖ The trough from the cyclonic circulation over southwest Bay of Bengal & adjoining south Sri Lanka to Lakshadweep between 1.5 km & 4.5 km above mean sea level persists.
- ❖ **Southwest Monsoon** is very likely to advance into South Andaman Sea, some parts of Southeast Bay of Bengal and Nicobar Islands around 19<sup>th</sup> May, 2024.
- ❖ A fresh Western Disturbance is likely to affect Western Himalayan Region from 17<sup>th</sup> May, 2024.

#### Weather Forecast for next 7 days (Upto 0830 hours IST of 23rd May, 2024)

- ❖ Meteorological sub-division wise detailed 7 days rainfall forecast is given in Table-1.
- ❖ Gradual rise by about 3-4°C in maximum temperatures very likely over many parts of Northwest & East India during next 4 days and no significant change thereafter.
- ❖ Gradual rise by about 2-4°C in maximum temperatures very likely over many parts of Central India and Gujarat during next 4-5 days.
- ❖ No significant change in maximum temperatures very likely over rest parts of the country.

#### Weather Outlook for subsequent 3 days (During 23rd -25th May, 2024)

- ❖ Isolated to scattered light/moderate rainfall likely over Western Himalayan Region, Central, East, Northeast & south Peninsular India.
- ❖ Isolated to scattered fairly widespread to widespread rainfall likely over Islands.
- ❖ 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

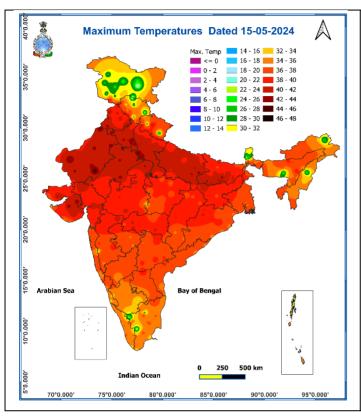
	7 Days Rainfall Forecast							
C No	Cultudicaione	16-May	17-May	18-May	19-May	20-May	21-May	22-May
S. No.	Subdivision	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1	ANDAMAN & NICOBAR ISLANDS	FWS	FWS	WS	WS	WS	WS	WS
2	ARUNACHAL PRADESH	FWS	WS	WS	WS	WS	FWS	SCT
3	ASSAM & MEGHALAYA	SCT	WS	WS	WS	WS	FWS	FWS
4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

Legend	Category	% Stations
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. 1: Maximum Temperatures

# Fig. 2: Departure of Maximum Temperatures



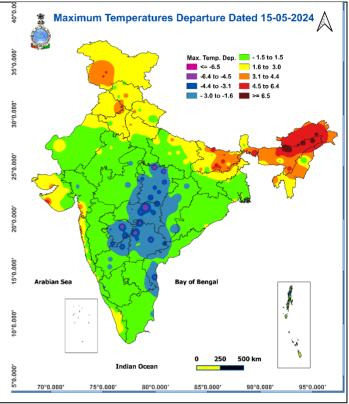
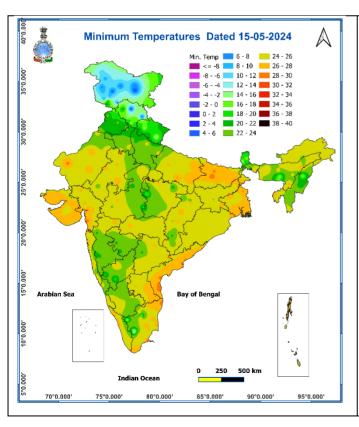


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures



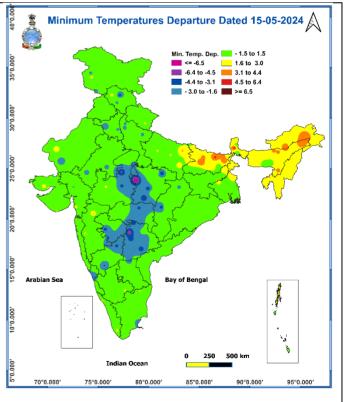
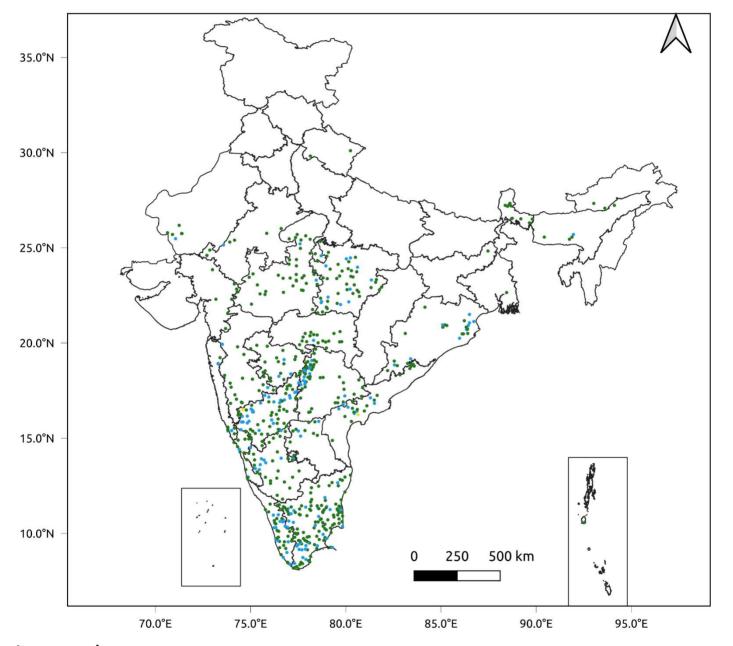




Fig. 5: Accumulated Rainfall (mm) during past 24 hours



# 24 Hr cumulative rainfall recorded over different stations during 0830 IST of 14-5-2024 to 0830 IST of 15-5-2024



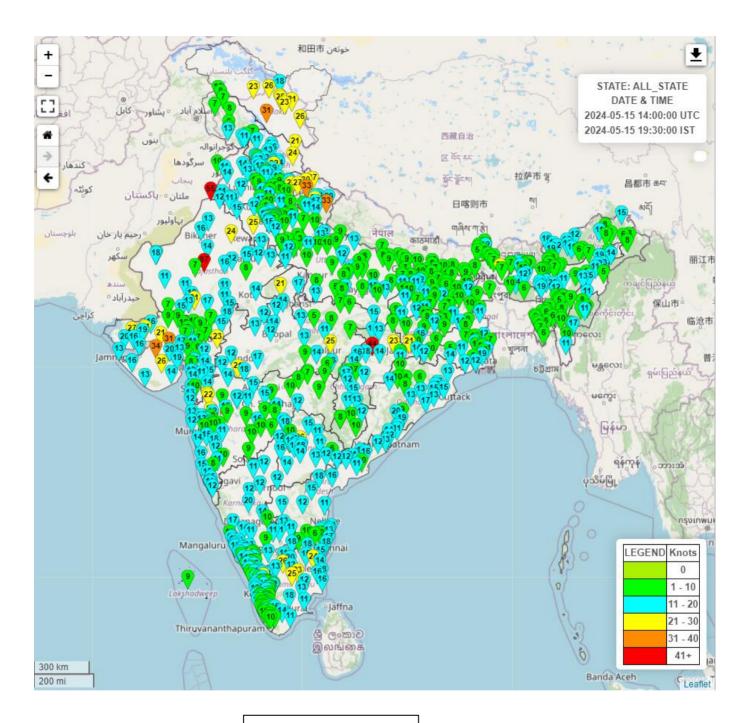
# Legends

- 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)





## Gusty winds reported over the country (in knots) from 0830 hrs IST to 1730 hrs IST of 15.05.2024

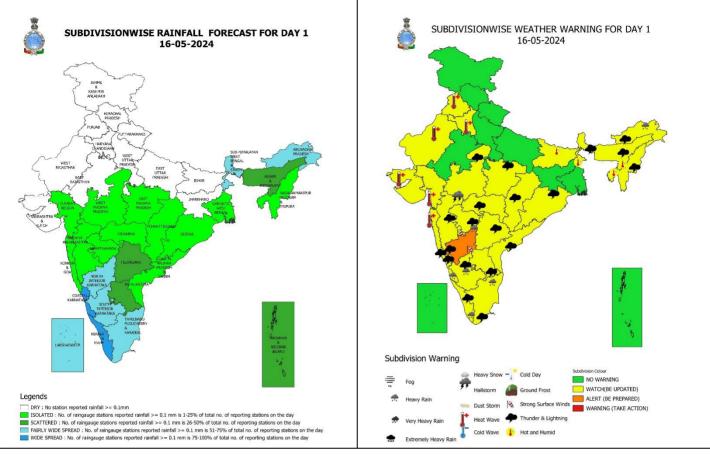


1 Knot = 1.852 kmph

For more details, kindly refere: <a href="http://aws.imd.gov.in:8091/">http://aws.imd.gov.in:8091/</a>





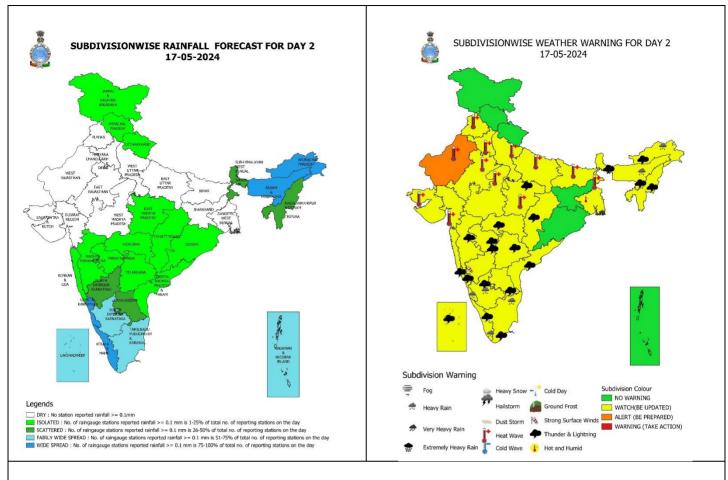


# 16 May (Day 1):

- Thunderstorm accompanied with lightning, squally winds (speed reaching 50-60 kmph) & hailstorm very likely at isolated places over Madhya Maharashtra; with lightning & gusty winds (speed reaching 50-60 kmph) at isolated places over North Interior Karnataka; with lightning & gusty winds (speed reaching 40-50 kmph) at isolated places over Madhya Pradesh, Vidarbha, Konkan & Goa, Marathwada, Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, South Interior Karnataka, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe; with lightning, gusty winds (speed reaching 30-40 kmph) at isolated places over Chhattisgarh and Sub-Himalayan West Bengal & Sikkim; with lightning at isolated places over Odisha, Arunachal Pradesh ,Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura and Coastal Karnataka.
- **Heavy rainfall** very likely at isolated places over Arunachal Pradesh, Tamil Nadu, Kerala & Mahe and Karnataka.
- ❖ **Heat Wave Conditions** very likely to prevail in isolated pockets over Punjab, Haryana, West Rajasthan, Gujarat state and Konkan & Goa
- ❖ Hot and humid weather very likely to prevail over Sub-Himalayan West Bengal & Sikkim, Bihar, Assam & Meghalaya and Tripura.
- ❖ Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph very likely to prevail Comorin area, Gulf of Mannar, along and off south Kerala coast, along and off south Sri Lanka coast and adjoining southwest Bay of Bengal. Fishermen are advised not to venture into these areas.





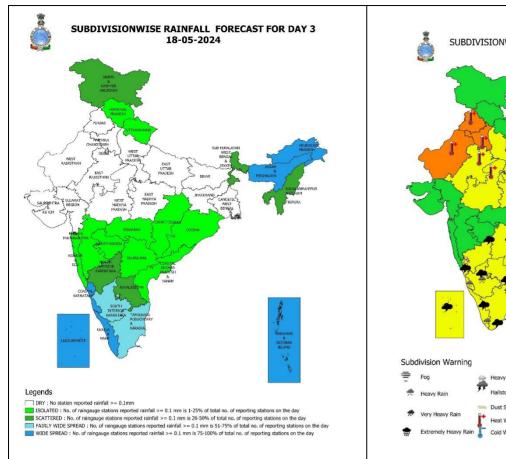


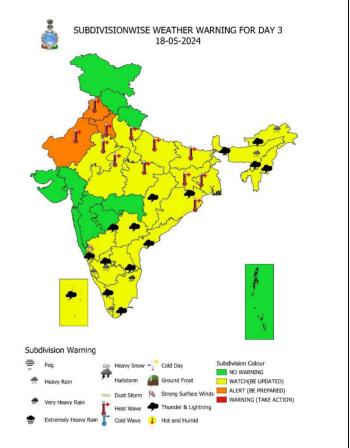
# 17 May (Day 2):

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







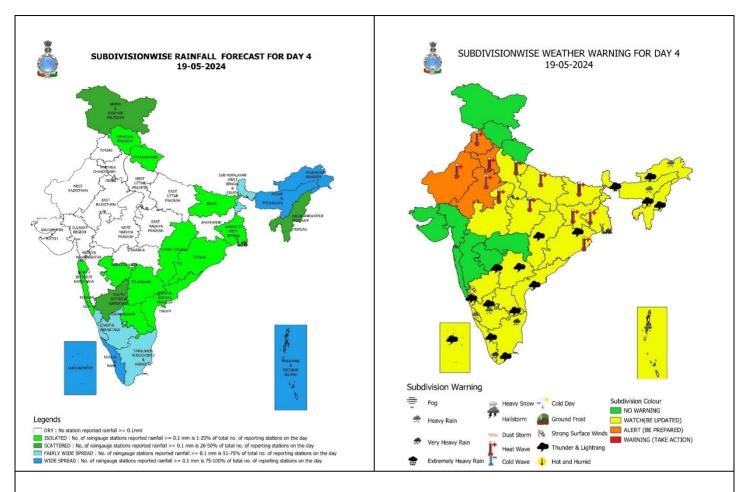


#### 18 May (Day 3):

- ❖ Thunderstorm accompanied with lightning & gusty winds (speed reaching 40-50 kmph) likely at isolated places over Coastal Andhra Pradesh & Yanam, Rayalaseema, Interior Karnataka, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe; with lightning & gusty winds (speed reaching 30-40 kmph) at isolated places over Chhattisgarh, Odisha, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura, Telangana; with lightning at isolated places over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Lakshadweep and Coastal Karnataka
- Heavy to very heavy rainfall likely at isolated places over Tamil Nadu and Heavy rainfall at isolated places over Arunachal Pradesh, Assam & Meghalaya, Kerala & Mahe and Coastal & South Interior Karnataka.
- ❖ Heat Wave to severe heat wave Conditions likely to prevail in some parts over West Rajasthan; in isolated pockets over Haryana and heat wave conditions in many parts over Punjab; in some parts of Uttar Pradesh; in isolated pockets over Delhi, East Rajasthan, north Madhya Pradesh, Gangetic West Bengal, Bihar, Jharkhand and Odisha.





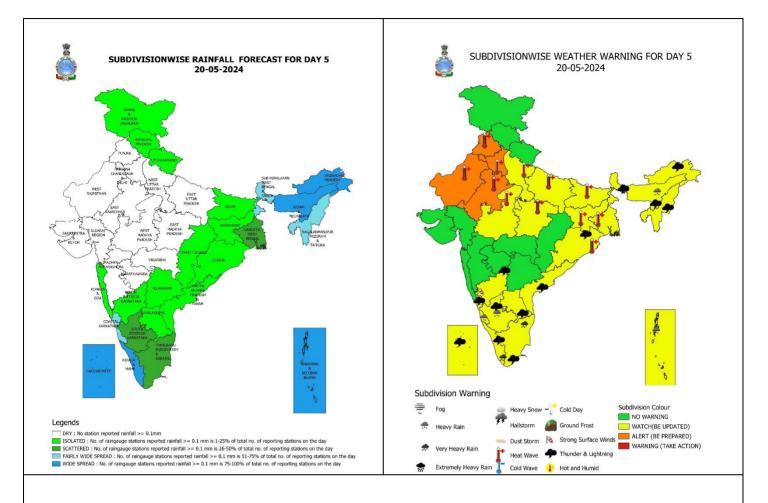


# 19 May (Day 4):

- ❖ Thunderstorm accompanied with lightning & gusty winds (speed reaching 40-50 kmph) likely at isolated places over Sub-Himalayan West Bengal & Sikkim, Interior Karnataka, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe; with lightning & gusty winds (speed reaching 30-40 kmph) at isolated places over Odisha, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema and Chhattisgarh; with lightning at isolated places over Arunachal Pradesh, Lakshadweep and Coastal Karnataka.
- Heavy to very heavy rainfall likely at isolated places over Tamil Nadu, Kerala & Mahe and Heavy rainfall at isolated places over Arunachal Pradesh, Assam & Meghalaya, Coastal & South Interior Karnataka and Andaman & Nicobar Islands.
- ❖ Heat Wave to severe heat wave Conditions likely to prevail in some parts over West Rajasthan; in isolated pockets over Haryana, East Rajasthan and heat wave conditions in manty parts over Punjab; in some parts of Uttar Pradesh; in isolated pockets over Delhi, north Madhya Pradesh, Gangetic West Bengal, Bihar, Jharkhand and Odisha.







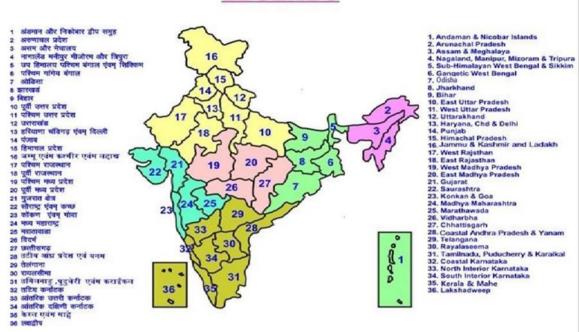
# 20 May (Day 5):

- ❖ Thunderstorm accompanied with lightning & gusty winds (speed reaching 40-50 kmph) likely at isolated places over Sub-Himalayan West Bengal & Sikkim, Interior Karnataka, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe; with lightning & gusty winds (speed reaching 30-40 kmph) at isolated places over Odisha, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema and Chhattisgarh; with lightning at isolated places over Arunachal Pradesh, Lakshadweep and Coastal Karnataka.
- \* Heavy to very heavy rainfall very likely at isolated places over Tamil Nadu, Kerala & Mahe and Heavy rainfall at isolated places over Arunachal Pradesh, Assam & Meghalaya, Coastal & South Interior Karnataka and Andaman & Nicobar Islands.
- \* Heat Wave to severe heat wave Conditions likely to prevail in some parts over West Rajasthan; in isolated pockets over Haryana, East Rajasthan and heat wave conditions in manty parts over Punjab; in some parts of Uttar Pradesh; in isolated pockets over Delhi, north Madhya Pradesh, Gangetic West Bengal, Bihar, Jharkhand and 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 WARNING (TAKE ACTION) Probability of Occurrence (%) **Terms** < 25 ALERT ( BE PREPARED) Likely WATCH (BE UPDATED) Very Likely Most Likely Heavy: 64.5 to 115.5 mm/cm \* Very Heavy: 115.6 to 204.4 mm/cm\* Rain/ Snow Extremely Heavy: > 204.4 mm/cm 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 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 (c) For Coastal Stations 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 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)