



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

Monday, November 18, 2024 Time of Issue: 1345 hours IST (MID-DAY)

# ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN Significant Weather Features:

#### Weather Systems:

- A cyclonic circulation lies over Comorin area & neighbourhood in lower tropospheric levels.
- A cyclonic circulation lies over south Bangladesh & neighbourhood and extends upto lower tropospheric levels.

#### Forecast & Warnings (upto 7 days):

- ✓ Light to moderate rainfall at a few places accompanied with isolated thunderstorm & lightning very likely over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe during 18th 20th November, 2024.
- ✓ Light to moderate rainfall at many places over Andaman & Nicobar Islands during the week; Light to moderate rainfall at isolated places over Assam & Meghalaya & Nagaland, Manipur, Mizoram & Tripura on 20<sup>th</sup> & 21<sup>st</sup> November.
- ✓ Isolated heavy rainfall very likely over Tamil Nadu, Puducherry & Karaikal on 18th & 19th; Kerala & Mahe on 18th; Nicobar on 22th & 23rd November.
- ✓ Isolated **Hailstorm** activity also very likely over Assam & Meghalaya on 20<sup>th</sup> & 21<sup>st</sup> November.
- Pradesh till 19<sup>th</sup> and dense fog conditions very likely to prevail in night/ morning hours in isolated pockets of Punjab, Haryana-Chandigarh till 23<sup>rd</sup>, East Uttar Pradesh till 19<sup>th</sup> and dense fog for subsequent 24 hours, Himachal Pradesh till 21<sup>st</sup> and dense fog for subsequent 2 days. **Dense fog conditions** is very likely to prevail in night/ morning hours in isolated pockets of West Uttar Pradesh, Rajasthan and Madhya Pradesh till 20<sup>th</sup> and Uttarakhand during 20<sup>th</sup>-23<sup>rd</sup> November.

#### ii. Temperature conditions and Forecast:

#### Temperature Conditions during past 24 hours till 0830 hours IST of today

No significant change in minimum temperature observed over most parts of the country during past 24 hours. Minimum temperatures are above **normal** (2°C to 3°C) at many places over Punjab, Haryana, West Uttar Pradesh; at isolated places over East Rajasthan, Gujarat Region, East Uttar Pradesh, north Madhya Pradesh and Rayalaseema. These are **below normal** (2°C to 3°C) at isolated places over Odisha, Telangana, Chhattisgarh and near normal over rest parts of the country. Today, **the lowest minimum temperature** of **10.7°C** is reported at **Delhi Ridge** (**Delhi**) over the plains of the country.

#### Forecast of temperature:

- No large change in minimum temperatures over Northwest & East India during next 5 days.
- Gradual fall in minimum temperatures by 2-3°C very likely over Central India during next 5 days.
- No large change in minimum temperatures over northeast India during next 2 days and gradual rise by 2-3°C during subsequent 3 days.
- Gradual fall in minimum temperatures by 2-4°C very likely over Maharashtra & Gujarat Region during next 5 days.

## iii. Weather forecast over Delhi/NCR during 18th Nov. to 21th Nov. 2024

#### Past Weather:

There has been a slight fall in maximum temperatures over Delhi/NCR during past 24hr. The Maximum and Minimum temperature over Delhi is in the range of 25 to 27°C and 11 to 16°C respectively. The maximum temperature was below normal by 1 to 2°C and the minimum temperature was above normal by 2 to 4°Cover most places. Mainly moderate fog/smog condition with predominant surface wind from west direction with wind speed reaching 06 to 12 kmph prevailed during past 24hr. Dense fog reported at Palam airport during early morning today. Palam airport recorded visibility 100-150 m during 2300 hours IST of 17th November to 1100 hours IST of 18th November. Safdarjung airport recorded lowest visibility 150m during 2330 hours IST of 17th November to 1200 hours IST of 18th November. Mainly moderate fog /smog condition with wind speed less than 12 kmph west direction prevailed over the region in the forenoon today.

#### Weather Forecast:

**18.11.2024:** Mainly clear sky. The predominant surface wind is likely to be northwest with wind speed upto 05-10 kmph till evening. It would decrease thereafter becoming less than 05 kmph from northwest direction during night. Smog/shallow to moderate fog is likely in the evening/night.

19.11.2024: Mainly clear sky. The predominant surface wind is likely to be from northwest direction with speed less than 05 kmph during morning hours. Smog/dense fog is likely in the morning. The wind speed will increase thereafter becoming less than 12 kmph from northwest direction during afternoon. It will decrease thereafter becoming less than 08 kmph from northwest direction during evening and night. Smog/ shallow fog is likely in the evening/night.

**20.11.2024:** Mainly clear sky. The predominant surface wind is likely to be from northwest direction with speed less than 08 kmph during morning hours. Smog/dense fog is likely in the morning. The wind speed will gradually increase becoming 10-12 kmph from northwest direction during afternoon. It will decrease thereafter becoming less than 08 kmph from northwest direction during evening and night. Smog/ shallow fog is likely in the evening/night.

21.11.2024: Mainly clear sky. The predominant surface wind is likely to be from northwest direction with wind speed less than 10 kmph during morning hours. Smog/moderate to dense fog in the morning. The wind speed will increase thereafter becoming 10-12 kmph from northwest direction during afternoon. It will gradually decrease becoming less than 08 kmph from northwest directions during evening and night. Smog/shallow fog is likely in the evening/night.







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

- \* Rainfall distribution (from 0830 hours IST of yesterday to 0830 hours IST of today): at a few places over Tamil Nadu, Puducherry & Karaikal, Lakshadweep; at isolated places over Arunachal Pradesh, Coastal Andhra Pradesh & Yanam, Rayalaseema, South Interior Karnataka.
- ❖ Heavy rainfall recorded (from 0830 hours IST of yesterday to 0830 hours IST of today): Heavy to very heavy rainfall occurred at isolated places over Tamil Nadu, Puducherry & Karaikal; heavy rainfall at isolated places over Kerala & Mahe.
- ❖ Significant amount of rainfall (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm): Tamil Nadu, Puducherry & Karaikal: Vedaranyam (dist Nagapattinam) 19, Kodiayakarai (dist Nagapattinam) 15, Thiruthuraipoondi (dist Thiruvarur) 10, Thalaignayer (dist Nagapattinam) 7, Karaikal (dist Karaikal) 6; Kerala & Mahe: Cherthala (dist Alapuzha) 7, Choondy (dist Ernakulam) 6, Piravam (dist Ernakulam) 5, Nooranad (dist Alapuzha) 4, Palluruthy (dist Ernakulam) 4, Muliyar (dist Kasargod) 4
- **❖ Fog conditions observed** (between 0530 & 0830 hours IST of today): **Very dense fog (visibility < 50 m)** reported in isolated pockets of Himachal Pradesh, Punjab, Haryana, and Uttar Pradesh; **dense fog (visibility 51-200 m)** reported in isolated pockets of Delhi, Chandigarh and West Madhya Pradesh.
- ❖ Visibility reported (between 0530 & 0830 hours IST of today) (≤500metres): Visibility reported (in m): Punjab: Patiala 0, Adampur 0, Halwara 0, Ludhiana 10, Chandigarh:100; Haryana: Ambala 0, Hissar 0, Bhiwani 0, Karnal 200; East Uttar Pradesh: Ballia 0, Kushinagar 0, Gorakhpur 300; West Uttar Pradesh: Sarsawa 0; Himachal Pradesh: Bilaspur 30; Delhi: Palam 100, Safdarjung 150; West Madhya Pradesh: Gwalior 150.
- Minimum Temperature Departures (as on 18-11-2024): Minimum temperatures are above normal (2°C to 3°C) at a few places over Rayalaseema, Haryana-Chandigarh-Delhi, Uttar Pradesh, Kerala & Mahe; at isolated places over Saurashtra & Kutch, Tamil Nadu, Puducherry & Karaikal, Gujarat Region, Assam & Meghalaya, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Madhya Pradesh, Bihar, West Bengal & Sikkim. These are below normal (-2°C to -3°C) at isolated places over Odisha, Telangana, Chhattisgarh and near normal over rest parts of the country. Today, the lowest minimum temperature of 10.7°C is reported at Delhi Ridge (Delhi) over the plains of the country. (Fig.4)
- ★ Maximum Temperature Departures (as on 17-11-2024): Maximum temperatures were appreciably above normal (3.1°C to 5.0°C) at isolated places over Assam & Meghalaya, East Uttar Pradesh, they are above normal (1.6°C to 3.0°C) at isolated places over Madhya Pradesh, Gujarat state, Chhattisgarh, Vidarbha, Madhya Maharashtra, Konkan & Goa, Coastal Andhra Pradesh & Yanam, Kerala & Mahe. These were appreciably below normal (-3.1°C to -5.0°C) at isolated places over Rajasthan; below normal (-1.6°C to -3.0°C) at isolated places over Haryana-Chandigarh, Gangetic West Bengal, Punjab, Bihar, Odisha and near normal over rest parts of the country. Yesterday, the highest maximum temperature of 35.8°C was reported at Karwar (Coastal Karnataka) over the country. (Fig. 2)







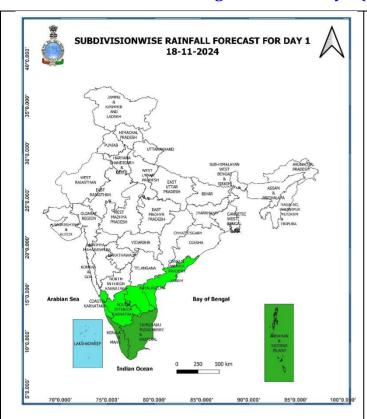
# Meteorological Analysis (Based on 0830 hours IST)

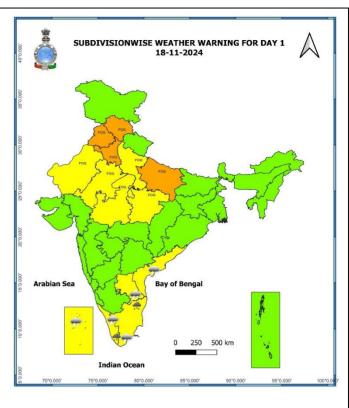
- ❖ A **cyclonic circulation** lies over Comorin area & neighbourhood at 0.9 km above mean sea level.
- ❖ The **cyclonic circulation** over south Bangladesh & neighbourhood persists and now extends upto 1.5 km above mean sea level.
- ❖ **Jet Stream Winds** of the order upto 90 knots at 12.6 km above mean sea level are prevailing over Northwest India.
- ❖ The **cyclonic circulation** over Maldives & adjoining Equatorial Indian Ocean at 0.9 km above mean sea level has become less marked.
- ❖ The **trough** from the above **cyclonic circulation** over Maldives & adjoining Equatorial Indian Ocean to southeast Arabian Sea at 0.9 km above mean sea level has become less marked.





# Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 25th November, 2024)

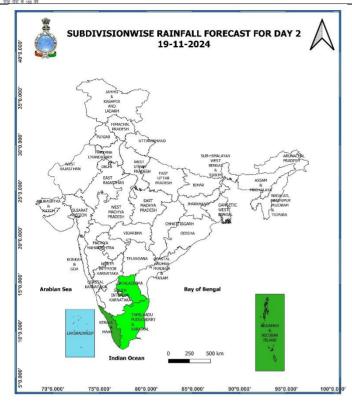


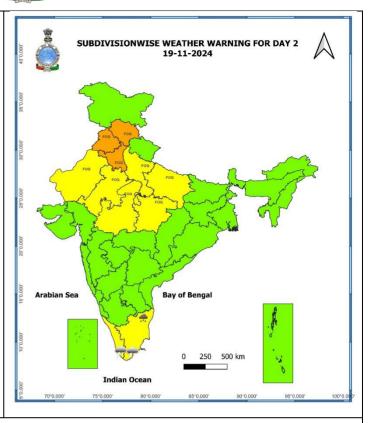


# 18 November (Day 1):

- ♣ Heavy rainfall (≥ 7 cm) very likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe.
- ❖ Dense to very dense fog conditions very likely in isolated pockets of Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi, East Uttar Pradesh; Dense fog in isolated pockets of West Uttar Pradesh, Rajasthan, Madhya Pradesh in night/morning hours.
- **Thunderstorm accompanied with lightning** very likely at isolated places over Rayalaseema, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.
- ❖ Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph is likely to prevailing over Lakshadweep area, Comorin area, gulf of Mannar.

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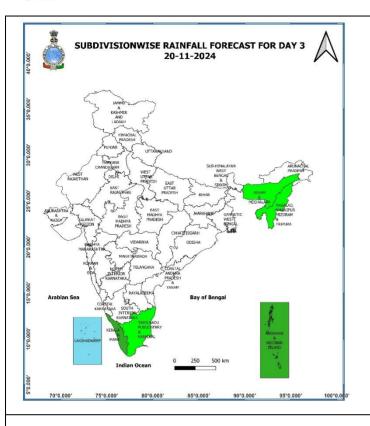


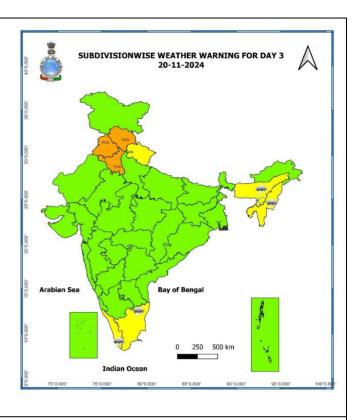


## 19 November (Day 2):

- **♦ Heavy rainfall (≥ 7 cm)** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal.
- ❖ Dense to very dense fog conditions very likely in isolated pockets of Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi; Dense fog in isolated pockets of Uttar Pradesh, Rajasthan, Madhya Pradesh in night/morning hours.
- ❖ Thunderstorm accompanied with lightning very likely at isolated places over Rayalaseema, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.

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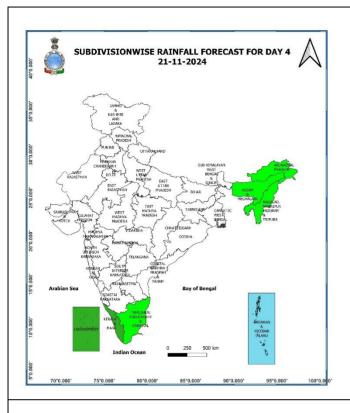


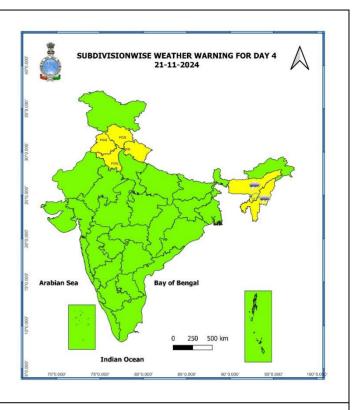
# 20 November (Day 3):

- ❖ **Dense to very dense fog conditions** very likely in isolated pockets of Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi; **Dense fog** in isolated pockets of Uttarakhand in night/morning hours.
- ❖ Thunderstorm accompanied with hail very likely at isolated places over Assam & Meghalaya; with lightning at Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.







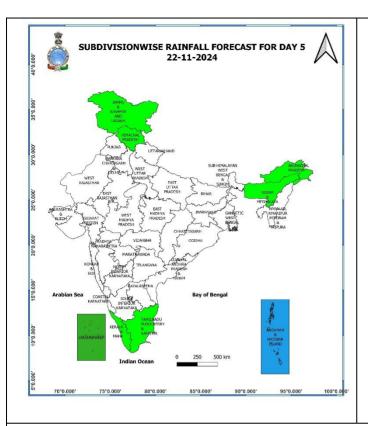


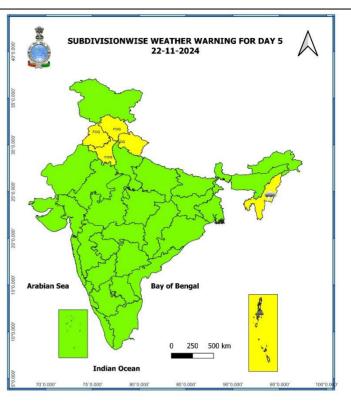
# 21 November (Day 4):

- ❖ **Dense to very dense fog conditions** likely in isolated pockets of Punjab, Haryana-Chandigarh-Delhi; **Dense fog** in isolated pockets of Himachal Pradesh, Uttarakhand in night/morning hours.
- **Thunderstorm accompanied with hail** likely at isolated places over Assam & Meghalaya with lightning over Nagaland, Manipur, Mizoram & Tripura.
- ❖ Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph is likely to prevailing over southern parts of southeast Bay of Bengal and adjoining south Andaman Sea.







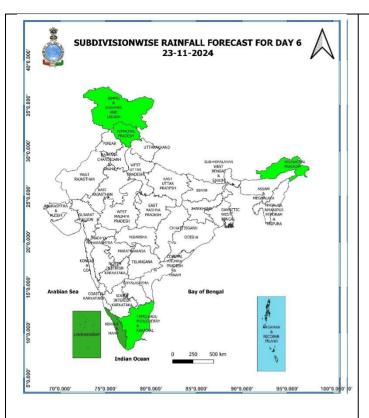


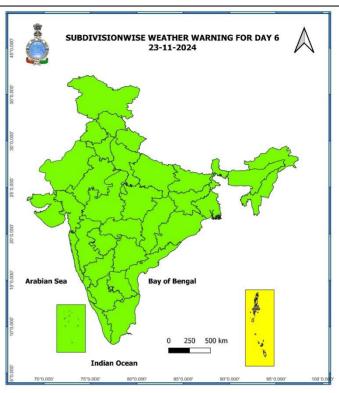
# 22 November (Day 5):

- **❖ Heavy rainfall (≥ 7 cm)** very likely at isolated places over Nicobar Islands.
- ❖ Dense to very dense fog conditions likely in isolated pockets of Punjab, Haryana-Chandigarh-Delhi; Dense fog in isolated pockets of Himachal Pradesh, Uttarakhand in night/morning hours.
- **❖ Thunderstorm accompanied with lightning** likely at isolated places over Nagaland, Manipur, Mizoram & Tripura.
- ❖ Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph is likely to prevailing over southern parts of southeast Bay of Bengal.



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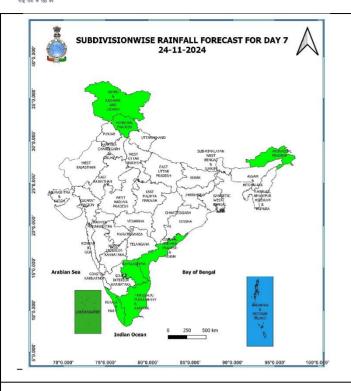


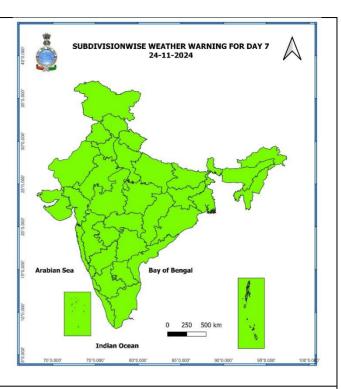
# 23 November (Day 6):

**❖ Heavy rainfall (≥ 7 cm)** very likely at isolated places over Nicobar Islands.



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# 24 November (Day 7):

**❖** No Warning

# Weather Outlook for subsequent 3 days (During 25th November - 27th November, 2024)

- ❖ Isolated to Scattered light rainfall likely over some parts of western Himalayan region and south peninsular India.
- ❖ Mainly dry weather will prevail over rest parts of country.
- Action may be taken based on ORANGE AND RED COLOUR warnings.
- Vulnerable regions likely urban and hilly areas action may be initiated for heavy rainfall warning.
- As the lead period increases forecast accuracy decreases.



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# Agromet advisories for Heavy Rainfall likely over Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe:

- ✓ In **Tamil Nadu**, provide adequate drainage facilities for the removal of excess water from rice, cotton, sugarcane, turmeric and vegetable fields, coconut and banana orchards. Undertake propping in sugarcane.
- ✓ Provide mechanical support to banana plants to prevent lodging.
- ✓ In **Kerala**, provide proper drainage in rice, ginger and vegetable fields. Provide mechanical support to banana plants and strengthen the vegetable pandals.

## Impact expected due to dense to very dense fog in the late night /morning hours.

- **❖** Transport and Aviation:
  - May affect some airports, highways and railway routes in the areas of met-sub-division.
  - Difficult driving conditions with slower journey times.
  - Unless taken precautionary measures, it may lead to some road traffic collisions.
- ❖ Power Sector:
  - Chances of Tripping of Power lines in the very dense fog routes.
- ❖ Human Health:
  - Lung related health impacts: Dense fog contains particulate matter and other pollutants and in case exposed it gets lodged in the lungs, clogging them and decreasing their functional capacity which increases episodes of wheezing, coughing and shortness of breath.
  - Impact on people having asthma bronchitis: Long time exposure to dense fog may cause respiratory problem for people having asthma bronchitis and other lung related health problems.
  - Eye Irritation: Dense fog contains pollutions of various types and these Pollutants in the air if exposed may tend to irritate the membranes of the eye causing various infections leading to redness or swelling of the eye.

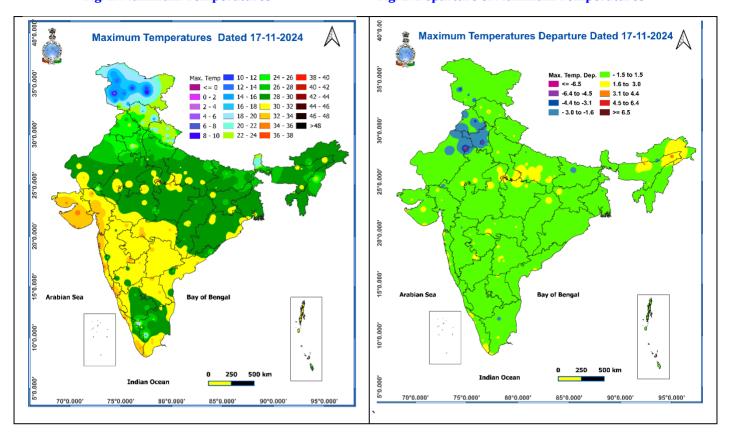
#### **Action suggested:**

- Transport and Aviation:
  - Be careful while driving or outing through any transport.
  - Use fog lights during driving.
  - Be in touch with airlines, railways and state transport for schedule of your journey.
- ❖ Power Sector:
  - To keep ready Maintenance Team
  - Human Health: To avoid outing until unless emergency and to cover the face.



Fig. 1: Maximum Temperatures

Fig. 2: Departure of Maximum Temperatures





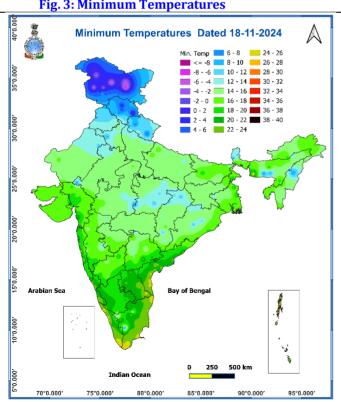


Fig. 4: Departure of Minimum Temperatures

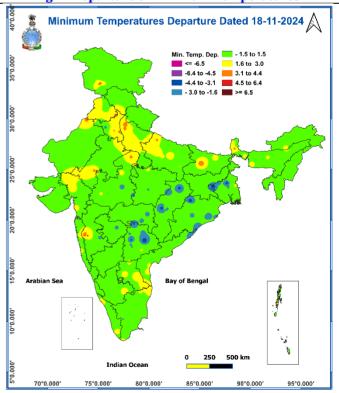
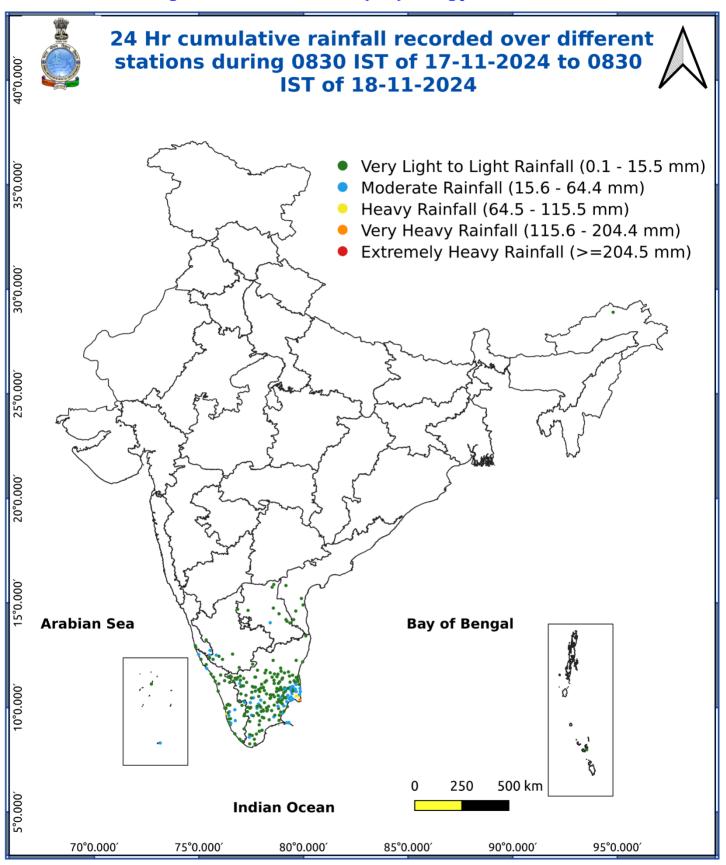






Fig. 5: Accumulated Rainfall (mm) during past 24 hours







# **LEGENDS**

- अंडमान और निकोबार द्वीपसमूह
   अरुणाचल प्रदेश
- 3. असम और मेघालय
- 4. नागालैंड, मणिपुर, मिजोरम और त्रिपुरा
- 5. उप-हिमालयी पश्चिम बंगाल और सिक्किम
- 6. गंगीय पश्चिम बंगाल
- 7. ओडिशा
- 8. झारखंड
- 9. बिहार
- 10. पूर्वी उत्तर प्रदेश
- 11. पश्चिम उत्तर प्रदेश
- 12. उत्तराखंड
- 13. हरियाणा, चंडीगढ़ और दिल्ली
- 14. पंजाब
- 15. हिमाचल प्रदेश
- 16. जम्मू और कश्मीर और लद्दाख
- 17. पश्चिम राजस्थान
- 18. पूर्वी राजस्थान
- 19. पश्चिम मध्य प्रदेश
- 20. पूर्वी मध्य प्रदेश
- 21. गुजरात
- 22. सौराष्ट्र
- 23. कोंकण और गोवा
- 24. मध्य महाराष्ट्र
- 25. मराठवाडा
- 26. विदर्भ
- 27. छत्तीसगढ़
- 28. तटीय आंध्र प्रदेश और यनम
- 29. तेलंगाना
- 30. रायलसीमा
- 31. तमिलनाडु, पुडुचेरी और कराईकल
- 32. तटीय कर्नाटक
- 33. आतंरिक उत्तरी कर्नाटक
- 34. आतंरिक दक्षिणी कर्नाटक
- 35. केरल और माहे
- 36. लक्षद्वीप

- 1. Andaman & Nicobar Islands
- 2. Arunachal Pradesh
- 3. Assam & Meghalava
- 4. Nagaland, Manipur, Mizoram & Tripura
- 5. Sub-Himalayan West Bengal & Sikkim
- 6. Gangetic West Bengal
- 7. Odisha
- 8. Jharkhand
- 9. Bihar
- 10. East Uttar Pradesh
- 11. West Uttar Pradesh
- 12. Uttarakhand
- 13. Haryana, Chandigarh & Delhi
- 14. Punjab
- 15. Himachal Pradesh
- 16. Jammu & Kashmir and Ladakh
- 17. West Rajasthan
- 18. East Rajasthan
- 19. West Madhya Pradesh
- 20. East Madhya Pradesh
- 21. Gujarat
- 22. Saurashtra
- 23. Konkan & Goa
- 24. Madhya Maharashtra
- 25. Marathwada
- 26. Vidarbha
- 27. Chhattisgarh
- 28. Coastal Andhra Pradesh & Yanam
- 29. Telangana
- 30. Rayalaseema
- 31. Tamilnadu, Puducherry & Karaikal
- 32. Coastal Karnataka
- 33. North Interior Karnataka
- 34. South Interior Karnataka
- 35. Kerala & Mahe
- 36. 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)





		1611115	1 Tobability of Occurrence (70)
		Unlikely	< 25
Hailstorm	Hot & Humid	Likely	25 - 50
-	• • • • • • • • • • • • • • • • • • • •	Very Likely	50 - 75
Dust Raising Winds	Strong Surface Winds	Most Likely	> 75
pe Dust Kuising venius	Strong Surface Wings	17/	





	DEFINITION/CRITERIA
	Heavy: 64.5 to 115.5 mm/cm *
Rain/ Snow *	Very Heavy: 115.6 to 204.4 mm/cm*  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.
Heat Wave	Severe Heat Wave: Maximum Temperature Departure from normal ≥6.5° C
neat wave	(b). Based on Actual maximum temperature  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
<b>Warm Night</b>	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 $\leq 10^{\circ}\text{C}$ 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.
Cold Wave	Severe Cold Wave: Minimum Temperature Departure from normal ≤ -6.5 °C
Cold Wave	(b) Based on actual Minimum Temperature (for Plains only)
	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
Cold Day	Based on departure
Cold Day	Cold Day: Maximum Temperature Departure from normal -4.5 °C to -6.4 °C.  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
Fog	Dense Fog: when the visibility between 50- 200 metres
	Very Dense Fog: when the visibility < 50 metres
hunderstorm	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.
	Ice deposits on ground
Frost	Air temperature ≤4°C ( over Plains)
	A strong wind that rises suddenly, lasts for atleast 1 minute.
Squall	Moderate: Wind speed 52-61 kmph
Oquali	Severe: Wind speed 62-87 kmph  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
Sea State	High to very high: Wind speed 41-62 kmph (22-33 knots) & Wave height 6-14 metre
	Phenomenal: Wind speed >117 kmph (>63 knots) & Wave height >14 metre
	Cualania Starra: Wind annual C2 97 Ironh /24 47 Ironh
	Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)  Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)
Cyclone	Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots)
Cyclone	Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots)  Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots)