



Government of India
Ministry of Earth Sciences
India Meteorological Department



Press Release

Date: 16th May, 2024

Time of Issue: 1315 hours IST

Subject:

- i. **Heat wave conditions likely over northwest India & Bihar during next 5 days and to commence over East & central India from 18th May, 2024.**
- ii. **Wet spell with isolated heavy to very heavy rainfall very likely to continue over south Peninsular India till 22nd May, 2024.**
- iii. **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.**

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

- ❖ **Heavy to very heavy rainfall** observed at isolated places over Tamil Nadu; **Heavy rainfall** at isolated places over Sikkim, Odisha, Assam & Meghalaya and Kerala.
- ❖ **Thunderstorm** observed at isolated places over Madhya Pradesh, Uttarakhand, Rajasthan, Sikkim, Jharkhand Odisha, Gujarat Region, Madhya Maharashtra, Konkan & Goa, Marathwada, Chhattisgarh, Coastal Andhra Pradesh, Telangana, Rayalaseema, Karnataka, Kerala and Tamil Nadu.
- ❖ **Gusty winds** data reported over the country is attached in **Annexure II**
- ❖ Yesterday, the **highest maximum temperature of 44.4°C** was reported at **Ganganagar (West Rajasthan)** over the country.

Weather Systems and Forecast & Warnings: (Annexure III)

- ❖ 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 Comorin area & adjoining south Tamil Nadu coast and a trough runs from this cyclonic circulation to Lakshadweep in lower tropospheric levels. Under their influence:
 - Fairly widespread to widespread light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (40-50 kmph)** likely over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Lakshadweep, south 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; South Interior Karnataka during 16th-20th; over Coastal Karnataka 17th-19th; Coastal Andhra Pradesh, Telangana and Rayalaseema on 16th and Lakshadweep during 19th-20th May, 2024.**
 - **Isolated very heavy rainfall very likely over Tamil Nadu, Puducherry & Karaikal during 17th-19th; Kerala & Mahe 18th-19th and South Interior Karnataka during 18th-20th May, 2024.**
 - **Isolated extremely heavy rainfall also very likely over Tamil Nadu on 16th & 20th and Kerala on 20th May, 2024.**
 - Isolated light rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Konkan & Goa, Madhya Maharashtra, Marathawada during 16th-18th; over Madhya Pradesh, Vidarbha, Chhattisgarh, Odisha, Gujarat state on 16th May.
 - Scattered to fairly widespread light to moderate rainfall very likely over Andaman & Nicobar Islands during next 7 days. **Isolated heavy rainfall very likely over Nicobar Islands on 20th May.**

- Isolated light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Odisha during next 7 days; over Bihar, Jharkhand, Gangetic West Bengal during 19th-22nd May. ***Isolated heavy rainfall also likely over Odisha today, the 16th May.***
- ❖ A cyclonic circulation lies over northeast Assam & neighbourhood 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.
 - Fairly widespread to widespread light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Arunachal Pradesh, Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura during next 7 days.
 - ***Isolated heavy rainfall also likely over Sikkim on 16th, 19th & 20th; Arunachal Pradesh during 16th-19th and Assam & Meghalaya during 17th-20th May, 2024.***
- ❖ A fresh Western Disturbance likely to affect Western Himalayan region from 17th May. Under its influence; Isolated to scattered light rainfall activity very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand during 17th-19th May, 2024.

Maximum temperature observation and forecast for next 5 days:

- ❖ **Areas having maximum temperatures greater than 40°C:** Yesterday, maximum temperatures were in the range of 42-44°C in isolated pockets over Rajasthan, south Haryana and southwest Uttar Pradesh; 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.
- ❖ Gradual rise by about 2-3°C in maximum temperatures very likely over many parts of Northwest India and Gujarat state during next 3 days and no significant change thereafter.
- ❖ Gradual rise by about 2-4°C in maximum temperatures very likely over many parts of Central, East India and Maharashtra during next 4-5 days.
- ❖ No significant change in maximum temperatures very likely over rest parts of the country.

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

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

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

Realised Rainfall during past 24 hours till 0830 hours IST of today:

- ❖ Light to moderate rainfall accompanied with isolated thunderstorm & lightning observed **at most places** over Kerala & Mahe; **at many places** over Tamil Nadu, Puducherry & Karaikal; **at a few places** over Sub-Himalayan West Bengal & Sikkim, Lakshadweep, South Interior Karnataka, Coastal Andhra Pradesh & Yanam and **at isolated places** over Uttarakhand, Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar, Gangetic West Bengal, Odisha, Jharkhand, Andaman & Nicobar Islands, Konkan & Goa, Madhya Maharashtra, Marathwada, Gujarat State, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Telangana, Rayalaseema, Coastal Karnataka and North Interior Karnataka.

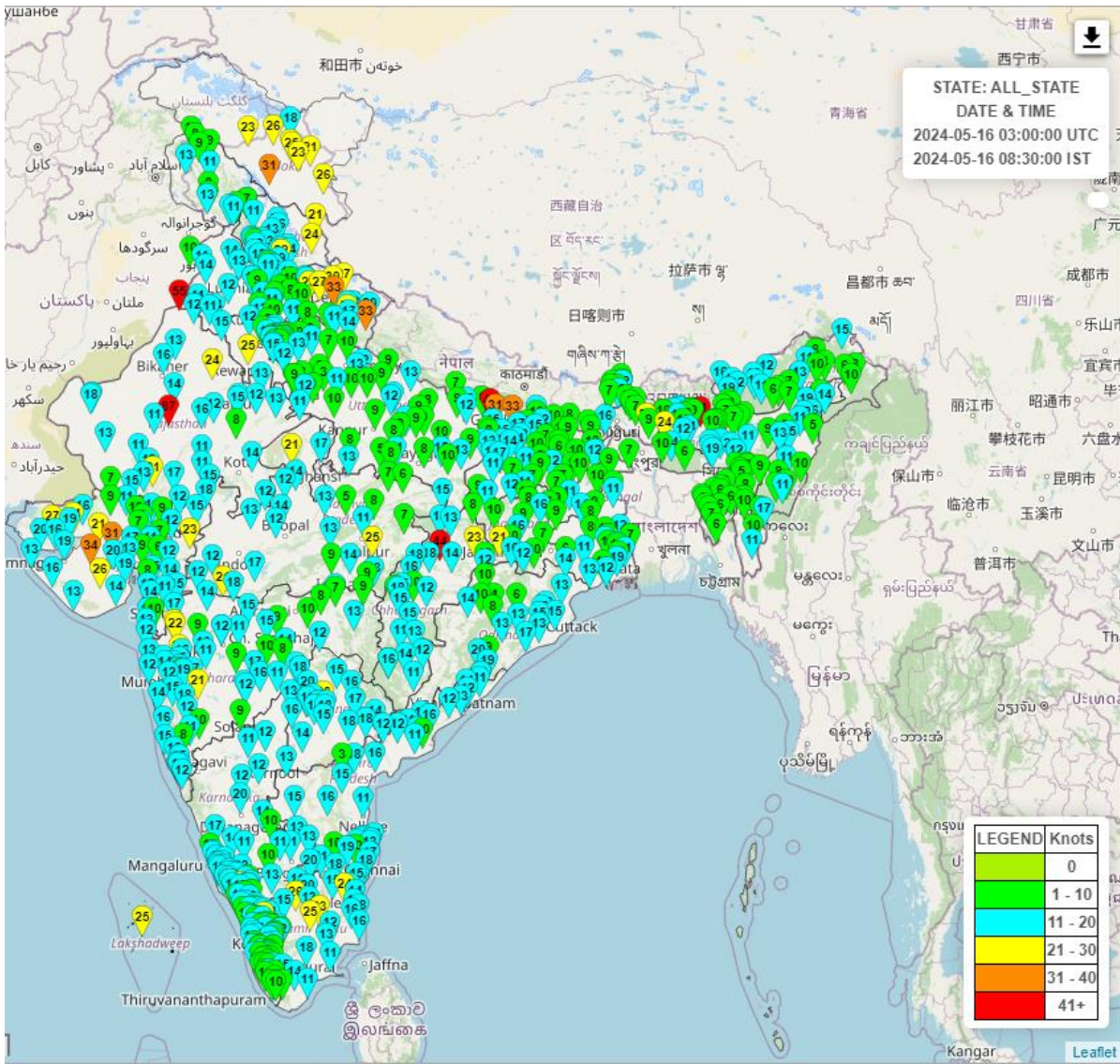
Significant amount of rainfall (in cm):

- ❖ **Kerala:** Urumi Aws (dist Kozhikode) 10, Ranni Aws (dist Pathanamthitta) 6, Neyyattinkara (dist Thiruvananthapuram) 5, Ottapalam (dist Palakkad) 5, Alwaye Pwd (dist Ernakulam) 5, Perumkadavila Arg (dist Thiruvananthapuram) 5, Vadakkancherry (dist Thrissur) 5, Parumbikulam (dist Palakkad) 5, Thodupuzha Arg (dist Idukki) 4, Kunnankulam (dist Thrissur) 4,
- ❖ **Tamil Nadu:** Pattukottai (dist Thanjavur) 16, Singampunari (dist Sivagangai) 14, Mannargudi (dist Thiruvarur) 13, Manamelkudi (dist Pudukkottai), Adiramapattinam (dist Thanjavur), Madukkur (dist Thanjavur) 11 each, Adirampatnam AWS (dist Thanjavur), Attur (dist Salem) 10 each, Mohanur (dist Namakkal), Sothuparai (dist Theni), Vadipatti (dist Madurai), Vedasandur (dist Dindigul), Tobacco Station (VDR) (dist Dindigul) 9 each, Sembanarkoil PWD (dist Mayiladuthurai), Mayiladuthurai AWS (dist Mayiladuthurai) 8 each, Tirumangalam (dist Madurai), Velankanni (dist Nagapattinam), Mettupatti (dist Madurai), Karaikal (dist Karaikal), Sathiar (dist Madurai) 7 each, Peravurani (dist Thanjavur), Thiruthurai poondi (dist Thiruvarur), Nagapattinam (dist Nagapattinam), Andipatti (dist Madurai), Kodumudiyaru Dam (dist Tirunelveli), Kovilankulam (dist Virudhunagar) 6 each,
- ❖ **Sikkim:** East Sikkim-9
- ❖ **Assam & Meghalaya:** Jowai_aws (dist West Jaintia Hills) 9,
- ❖ **Odisha:** Bamra (Sambalpur dist)-7
- ❖ **South Interior Karnataka:** Channagiri (dist Davangere) 6, Ponnampet Pwd (dist Kodagu) 5, Kottur (dist Vijayanagara) 4,

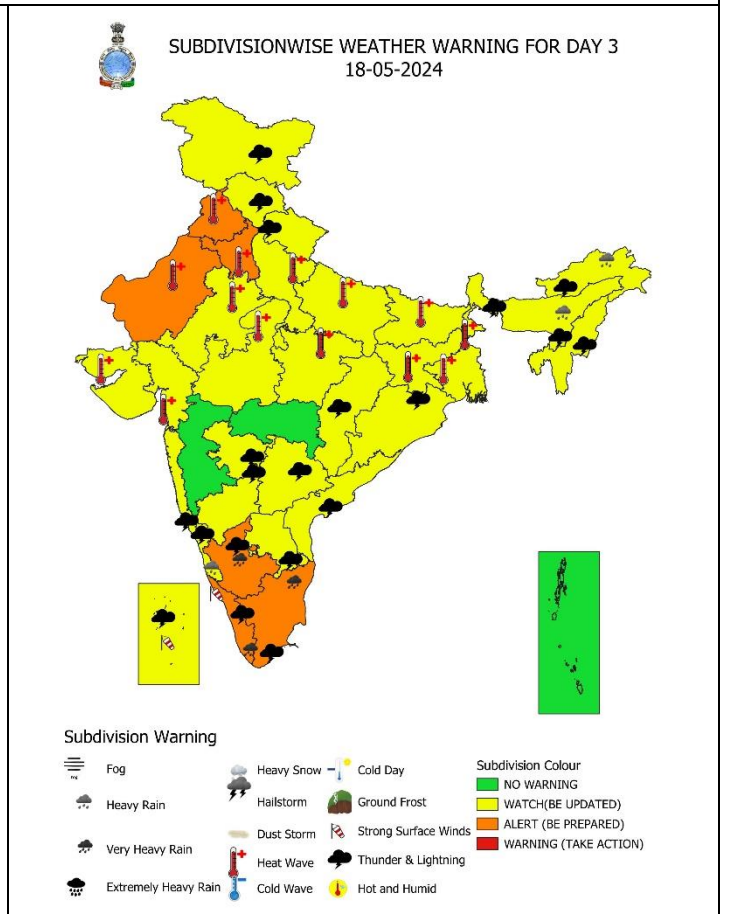
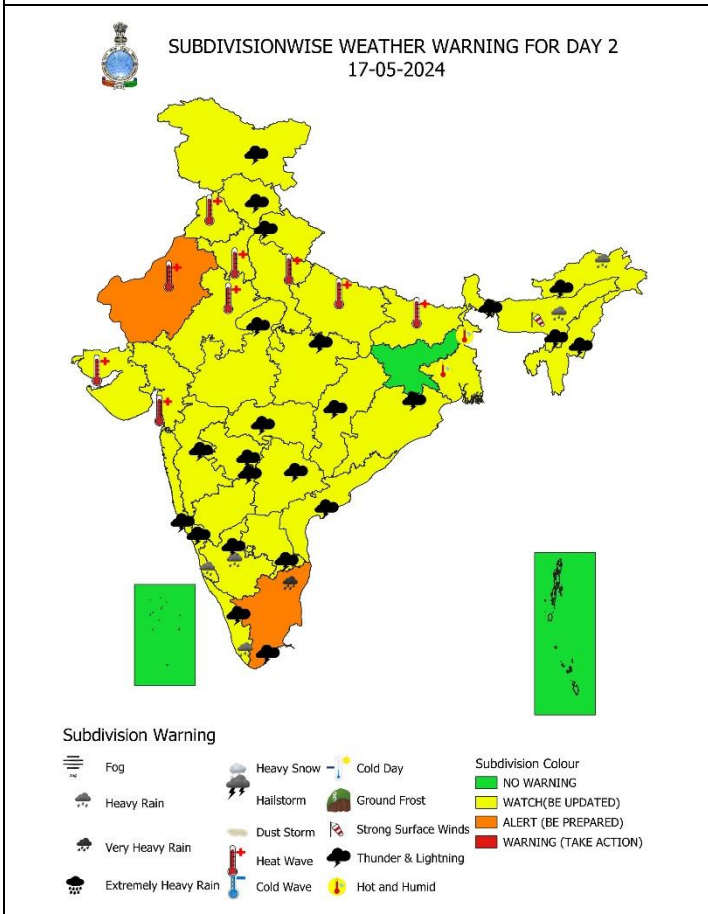
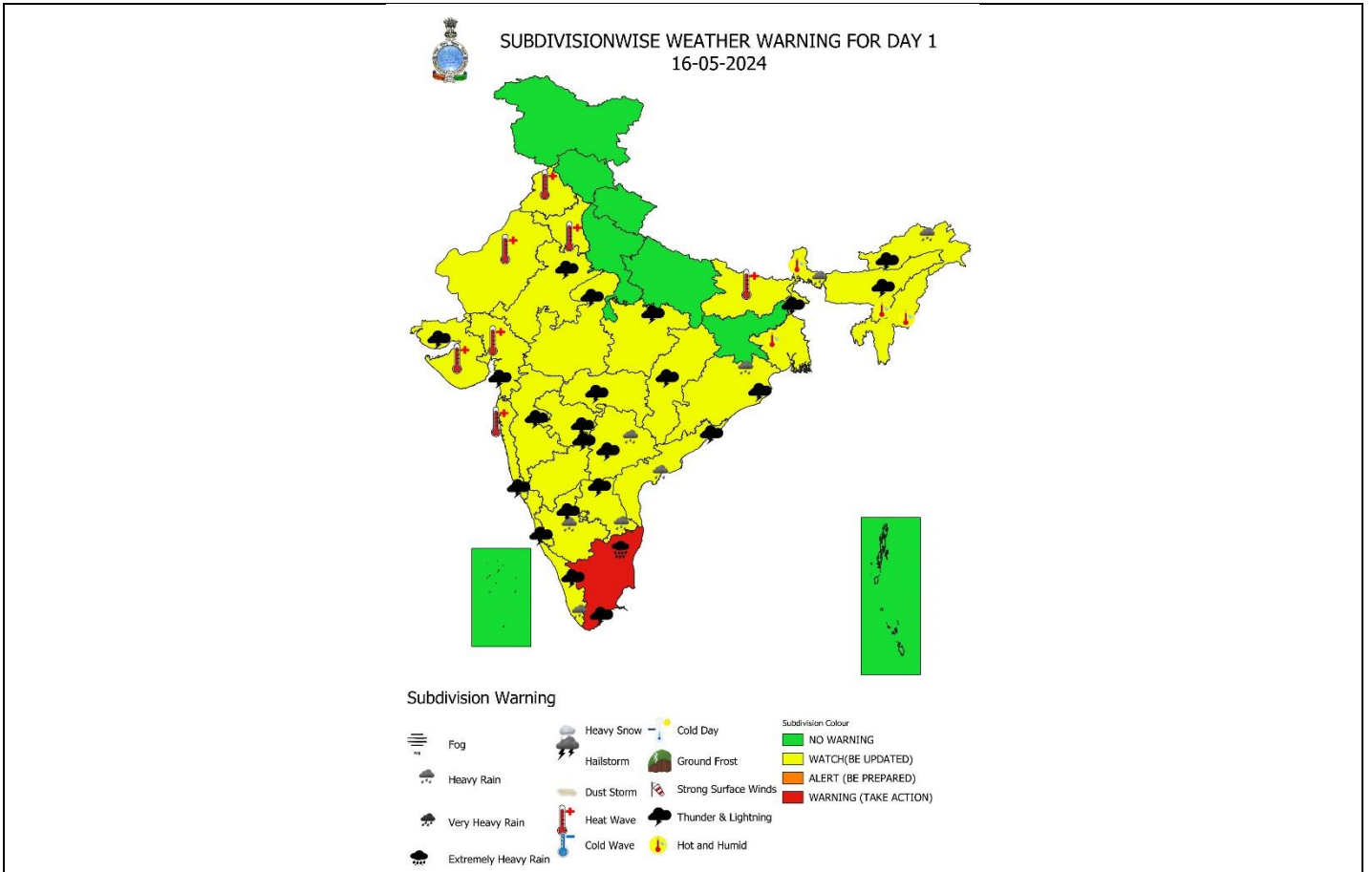
Reported maximum wind speed (kmph) during past 24 hours till 0830 hours IST of today:

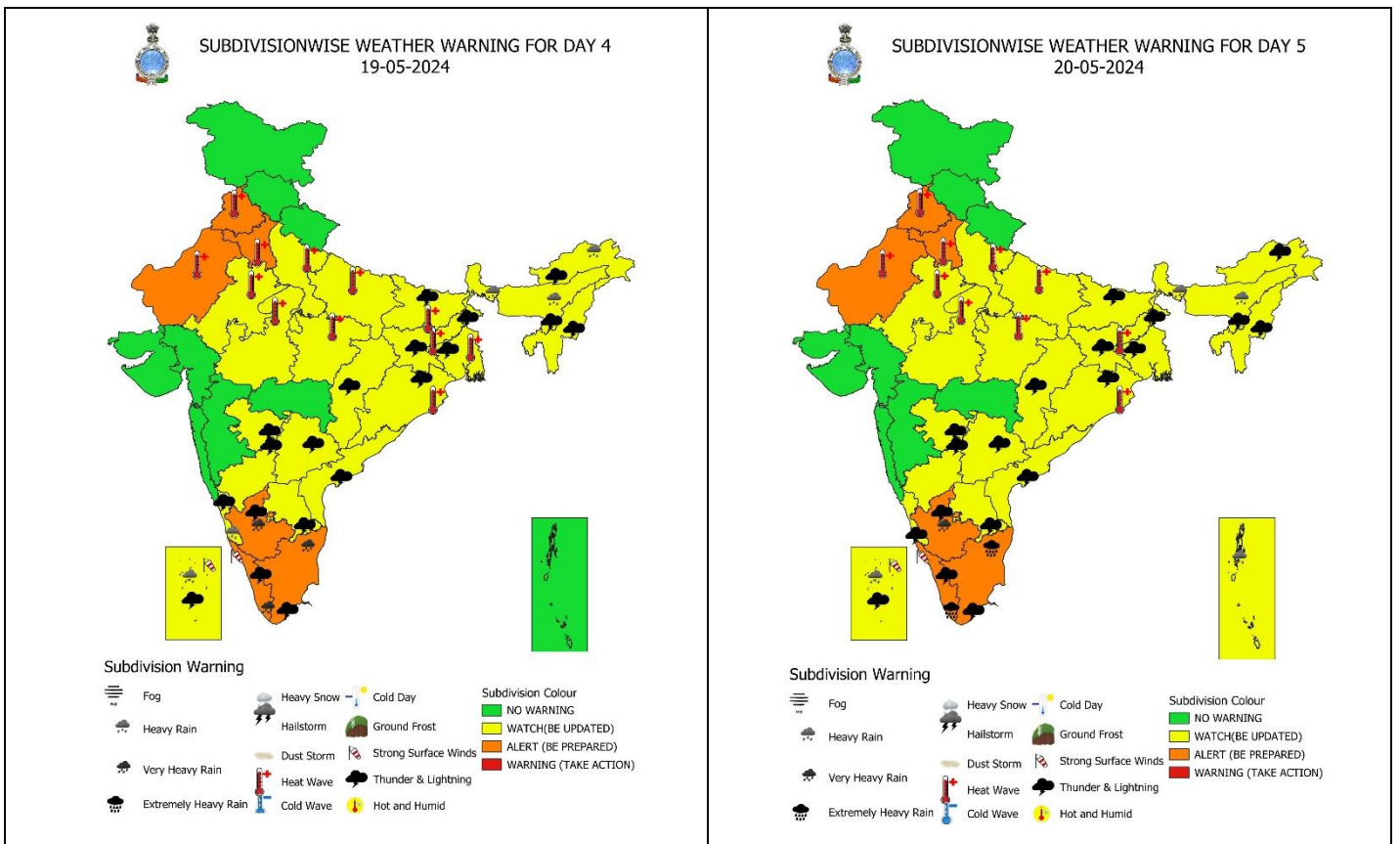
- ❖ **Rajasthan:** Ganganagar-101, Pali-160, Sikar-44, Shirohi-39;
- ❖ **Uttarakhand:** Pauri Garhwal-61, Chgampawat-61, Rudraprayag-55, Tehri Garhwal-50;
- ❖ **Gujarat:** Rajkot-63, Surendranagar-57, Kachchh-50, Dahod-43;
- ❖ **Uttar Pradesh:** Khusinagar-89;
- ❖ **Bihar:** Gopalganj-57, East champaran-61;
- ❖ **Assam:** Barpeta-94, Dhubri-44;
- ❖ **Chhattisgarh:** Jashpur- 43, korba-81;
- ❖ **East Madhya Pradesh:** Mandla - 47 , Seoni - 26, Chindwada - 24
- ❖ **West Madhya Pradesh:** Mandsaur - 37, Badwani - 32
- ❖ **Maharashtra:** Nashik-44, Pune-55;
- ❖ **Telangana:** Sidipet-48;
- ❖ **Tamil Nadu:** Cuddalore-44, Tiruchirappalli-43, Karur-46, Erode-48;
- ❖ **Kerala:** Wayanad-48, Kannur-46, Palakkad-40

Gusty winds reported over the country (in knots, 1 Knot = 1.85 kmph) from 0830 hrs IST of 15.05.2024 to 0830 hrs IST of 16.05.2024



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





IMPACT & ACTION SUGGESTED due to very heavy rainfall/extremely falls over Tamil Nadu, Puducherry & Karaikal during 16th-20th; Kerala & South Interior Karnataka during 18th-20th May 2024.

A. Impact Expected

- Localized Flooding of roads, water logging in low lying areas and closure of underpasses mainly in urban areas of the above region.
- Occasional reduction in visibility due to heavy rainfall.
- Disruption of traffic in major cities due to water logging in roads leading to increased travel time.
- Minor damage to kutcha roads.
- Possibilities of damage to vulnerable structure.
- Localized Landslides/Mudslides
- Damage to horticulture and standing crops in some areas due to inundation.
- It may lead to riverine flooding in some river catchments (for riverine flooding please visit Web page of CWC)

B. Action Suggested

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

IMPACT & ACTION SUGGESTED due to Heat Wave Conditions:

Orange alert Areas (Punjab, Haryana, West Rajasthan)

- ✓ High temperature & increased likelihood of heat illness symptoms in people who are either exposed to sun for a prolonged period or doing heavy work.
- ✓ High health concern 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 (East Rajasthan, Uttar Pradesh, Madhya Pradesh, Bihar, Konkan, Gujarat State, Jharkhand, Gangetic West Bengal, Odisha)

- ✓ 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.

Agromet advisories for Heavy Rainfall, Hailstorm & Gusty winds likely over various parts of the country:

- Make provision for draining out excess water from crop fields to avoid water stagnation in Tamil Nadu, Kerala, South Interior Karnataka, Coastal Karnataka, Arunachal Pradesh, Assam & Meghalaya, Odisha, Andhra Pradesh and Telangana.
- Apply light and frequent irrigation to standing crops to avoid heat stress; provide mulching to conserve soil moisture and minimise evaporation in Punjab, Haryana, Uttar Pradesh, Rajasthan, Jharkhand, Bihar, Gujarat and Konkan.
- Provide mechanical support to horticultural crops & staking to vegetables to prevent damage from gusty winds.

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)

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

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 $< 1\text{km}$

Moderate Fog: When the visibility between 500-200 metres	
Dense Fog: when the visibility between 50-200 metres	
Very Dense Fog: when the visibility < 50 metres	



Thunderstorm

Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)



Dust/Sand Storm

An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.



Frost

Ice deposits on ground

Air temperature $\leq 4^{\circ}\text{C}$ (over Plains)	
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Squall

A strong wind that rises suddenly, lasts for atleast 1 minute.

Moderate: Wind speed 52-61 kmph	
Severe: Wind speed 62-87 kmph	
Very Severe: Wind speed > 87 kmph	



Sea State

Effect of various waves in the sea over specific area

Rough to very rough: Wind speed 41-62 kmph (22-33 knots) & Wave height 2.5-6 metre	
High to very high: Wind speed 63-117 kmph (34-63 knots) & Wave height 6-14 metre	
Phenomenal: Wind speed > 117 kmph (> 63 knots) & Wave height > 14 metre	



Cyclone

Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)	
Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)	
Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots)	
Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots)	
Super Cyclone Storm: Wind speed > 220 kmph (> 119 knots)	