



Government of India  
Ministry of Earth Sciences  
India Meteorological Department



Press Release.

Date: 28<sup>th</sup> May, 2024

Time of Issue: 1400 hours IST

**Subject:**

- i. **Depression (remnant of Cyclonic Storm “Remal”)** over east Bangladesh
- ii. **Prevailing heat wave to severe heat wave** conditions over Northwest & Central India likely to reduce gradually from 30<sup>th</sup> May, 2024.
- iii. Conditions continue to become favourable for **Onset of Southwest Monsoon over Kerala** and for advance over some parts of Northeastern states during next 3-4 days.

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

- ❖ **Heat wave to severe heat wave conditions** prevailed over most parts of Rajasthan; in many parts of Punjab, Haryana-Chandigarh-Delhi, in some parts of Madhya Pradesh; in isolated pockets of Uttar Pradesh. Heat wave conditions prevailed in isolated pockets of Jammu-Kashmir, Himachal Pradesh, Gujarat, Vidarbha. **Heat wave conditions** have been prevailing over Gujarat since 15<sup>th</sup>; Haryana, Chandigarh & Delhi, Rajasthan since 17<sup>th</sup> and over West Madhya Pradesh & West Uttar Pradesh since 18<sup>th</sup> May, 2024.
- ❖ **Warm night conditions** observed in isolated pockets of Haryana, Uttar Pradesh and Madhya Pradesh.
- ❖ Yesterday, the **highest maximum temperature** of 49.4°C was reported at **Phalodi (West Rajasthan)** over the country.
- ❖ **Heavy to very heavy rainfall with extremely heavy falls** observed at isolated places over Meghalaya, Tripura; **Heavy to very heavy rainfall** at isolated places over Assam, Nagaland, Manipur, Mizoram, Kerala & Mahe.
- ❖ **Gusty winds/squally winds** data reported over the country is attached in **Annexure II**.

**Weather Systems and Forecast & Warnings: (Annexure III)**

**Advance of Southwest Monsoon:**

- ❖ Southwest Monsoon has further advanced into some more parts of South Arabian Sea and Maldives area today, the 28<sup>th</sup> May, 2024.
- ❖ The Northern Limit of Monsoon now passes through 08°N/60°E, 07°N/75°E, 08°N/80°E, 13°N/84.5°E, 16°N/87.5°E, 18.5°N/90°E, 21°N/92.5°E. **(Annexure IV)**.
- ❖ The conditions continue to become favourable for Southwest Monsoon onset over Kerala during next 3-4 days.
- ❖ The conditions also continue to become favourable for further advance of Southwest Monsoon into some more parts of South Arabian Sea, remaining parts of Maldives and Comorin area; some parts of Lakshadweep area, Kerala; some more parts Southwest & Central Bay of Bengal, Northeast Bay of Bengal and some parts of Northeastern states during the same period.

## Depression (remnant of Cyclonic Storm “Remal”) over east Bangladesh

The **Depression (remnant of Cyclonic Storm “Remal”)** over east Bangladesh moved east-northeastwards with a speed of 15 kmph during past 06 hours and lay centered at 0830 hours IST of 28<sup>th</sup> May, 2024 over the same region, near **latitude** 24.7 °N and longitude 91.5 °E, about 50 km west-northwest of Srimangal (Bangladesh), 70 km south-southwest of Cherrapunji, 90 km north-northeast of Agartala, 100 km south-southwest of Shillong, 130 km west of Silchar (Assam) and 160 km west-southwest of Haflong.

The system is likely to move east-northeastwards, and weaken into a Well Marked Low Pressure Area over Eastern Assam and neighbourhood by evening of today, the 28<sup>th</sup> May, 2024.

### Warnings:

#### **Heavy Rainfall Warning:**

**Northeastern States:** Light to moderate rainfall at most places with **heavy to very heavy rainfall** at a few places is very likely over Eastern Assam, Meghalaya, Mizoram & Tripura and at isolated places over Arunachal Pradesh, Nagaland, Manipur on 28<sup>th</sup> May. Isolated **extremely heavy rainfall** ( $\geq 20$  cm) is also likely over south & East Assam, Meghalaya, north Mizoram, east Arunachal Pradesh on 28<sup>th</sup> May.

#### **Wind Warning: (ANNEXURE V)**

**Northeastern States:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph is likely over Assam and Meghalaya, Mizoram, north Tripura, Arunachal Pradesh and Nagaland, Manipur till evening of 28<sup>th</sup> May.

#### **Damage Expected over Northeastern States (Assam, Meghalaya, Manipur, Tripura, Mizoram) on 28<sup>th</sup> May**

- Damage to vulnerable structures and thatched houses/ huts.
- Unattached metal sheets may fly.
- Damage to banana and papaya trees.
- Damage to Kutcha and minor damage to Pucca roads due to heavy rain.
- Damage to paddy crops, horticultural crops and orchards.
- Inundation of low-lying areas and localized flooding
- Occasional reduction in visibility due to heavy rainfall.
- Disruption of traffic due to water logging and squally winds

#### **Action Suggested for Damage Expected over Northeastern States (south Assam, Meghalaya, Manipur, Tripura, Mizoram) on 28<sup>th</sup> May:**

- People in vulnerable areas to move to safer places.
  - People in affected areas to remain indoors.
  - Avoid going to areas that face the water logging problems often.
- ❖ Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm, lightning & gusty winds (30-40 kmph) likely over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura and Sub-Himalayan West Bengal & Sikkim during next 7 days.
- ✓ Isolated heavy/very heavy rainfall very likely over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Sub-Himalayan West Bengal & Sikkim during next 5 days and Nagaland, Manipur, Mizoram & Tripura during 28<sup>th</sup>-30<sup>th</sup> May, 2024.
  - ✓ **Isolated extremely heavy falls also very likely over Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura today.**
- ❖ Isolated to scattered light/moderate rainfall over Bihar, Jharkhand, Gangetic West Bengal, Odisha during next 5 days and accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** likely over the above region on 31<sup>st</sup> May & 01<sup>st</sup> June.

- ❖ A cyclonic circulation lies over south Tamil Nadu & neighbourhood in middle tropospheric levels. Under its influence:
  - ✓ Fairly widespread to widespread light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** likely over Kerala & Mahe, Lakshadweep, Andaman & Nicobar Islands; isolated to scattered light/moderate rainfall over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh, Telangana, Rayalaseema, Karnataka during next 7 days.
  - ✓ **Isolated heavy rainfall very likely over Kerala & Mahe during next 5 days; Lakshadweep on 28<sup>th</sup> & 29<sup>th</sup>; over Andaman & Nicobar Islands on 31<sup>st</sup> May & 01<sup>st</sup> June, 2024.**
  - ✓ **Isolated very heavy rainfall over Kerala & Mahe on 29<sup>th</sup> & 30<sup>th</sup> May and extremely heavy falls on 28<sup>th</sup> May, 2024.**
- ❖ A fresh Western Disturbance likely to affect Northwest India from 30<sup>th</sup> May, 2024. Under its influence;
  - ✓ Isolated to scattered light rainfall accompanied with **thunderstorm, lightning** very likely over Uttarakhand during 28<sup>th</sup> May-01<sup>st</sup> June; Himachal Pradesh during 29<sup>th</sup> May-01<sup>st</sup> June and Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 30<sup>th</sup> & 31<sup>st</sup> May, 2024.
  - ✓ Isolated very light rainfall likely over plains of Northwest India during 30<sup>th</sup> May-02<sup>nd</sup> June.

#### 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 47-49°C in most parts of West Rajasthan; some parts of East Rajasthan; isolated pockets of Haryana-Chandigarh-Delhi, West Uttar Pradesh & Madhya Pradesh; 44-46°C in most parts of Punjab; many parts of Vidarbha; some parts of East Uttar Pradesh; isolated pockets of Gujarat state; 40- 44°C in some parts of interior Odisha, Chhattisgarh, Marathwada & Telangana; isolated pockets of Jammu division, plains of Uttarakhand & Himachal Pradesh, Bihar, Madhya Maharashtra and Coastal Andhra Pradesh & Yanam. These were above normal by 4-6°C over many parts of Rajasthan, Punjab, Haryana, Chandigarh, Delhi & Uttar Pradesh; in some parts of Jammu-Kashmir & Himachal Pradesh; isolated pockets of Madhya Pradesh, Vidarbha, Saurashtra & Kutch; above normal by 2-3°C over many parts of Gujarat Region and isolated pockets of Chhattisgarh.
- ❖ No significant change in maximum temperatures very likely over Northwest & Central India during next 2 days and fall by 2-3°C thereafter.
- ❖ Rise in maximum temperatures by 3-5°C very likely over East India during next 3 days and no significant change thereafter.
- ❖ Fall in maximum temperatures by 2-3°C very likely over Gujarat during next 5 days.
- ❖ Rise in maximum temperatures by 2-3°C very likely over Maharashtra during next 48 hours and no significant change thereafter.
- ❖ No significant change in maximum temperatures very likely over rest parts of the country.

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

- ❖ **Heat wave to severe heat wave conditions** very likely in many/most parts of Rajasthan; in some/many parts of Punjab, Haryana-Chandigarh-Delhi; in isolated/some parts of Uttar Pradesh, Madhya Pradesh during 28<sup>th</sup>-29<sup>th</sup> and gradual reduction thereafter.
- ❖ **Heat wave to severe heat wave conditions likely to reduce gradually over Northwest & Central India from 30<sup>th</sup> May.**
- ❖ **Heat wave conditions** very likely in isolated pockets of Bihar during 28<sup>th</sup>-31<sup>st</sup>; Vidarbha, Chhattisgarh during 28<sup>th</sup>-30<sup>th</sup>; Jammu division, Himachal Pradesh on 28<sup>th</sup> & 29<sup>th</sup>; over Jharkhand during 29<sup>th</sup>-31<sup>st</sup> and Odisha on 29<sup>th</sup> & 30<sup>th</sup> May, 2024.
- ❖ **Hot and humid weather** very likely to prevail over isolated pockets of Gujarat state on 28<sup>th</sup> & 29<sup>th</sup>; Odisha and Jharkhand on 28<sup>th</sup> May, 2024.
- ❖ **Warm night conditions** in isolated pockets very likely to prevail over Uttar Pradesh, East Madhya Pradesh on 28<sup>th</sup> & 29<sup>th</sup>; Punjab, Haryana-Chandigarh-Delhi during 30<sup>th</sup> May-01<sup>st</sup> June, 2024.

For more details, kindly refer: [https://mausam.imd.gov.in/responsive/all\\_india\\_forecast\\_bulletin.php](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 thunderstorm & lightning observed **at most places** over Andaman & Nicobar Islands, West Bengal & Sikkim, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Lakshadweep; **at many places** over Kerala & Mahe; **at a few places** over and **at isolated places** over Odisha, Jharkhand, Bihar, Uttarakhand, East Uttar Pradesh, Vidarbha, Konkan & Goa, Karnataka and Telangana.

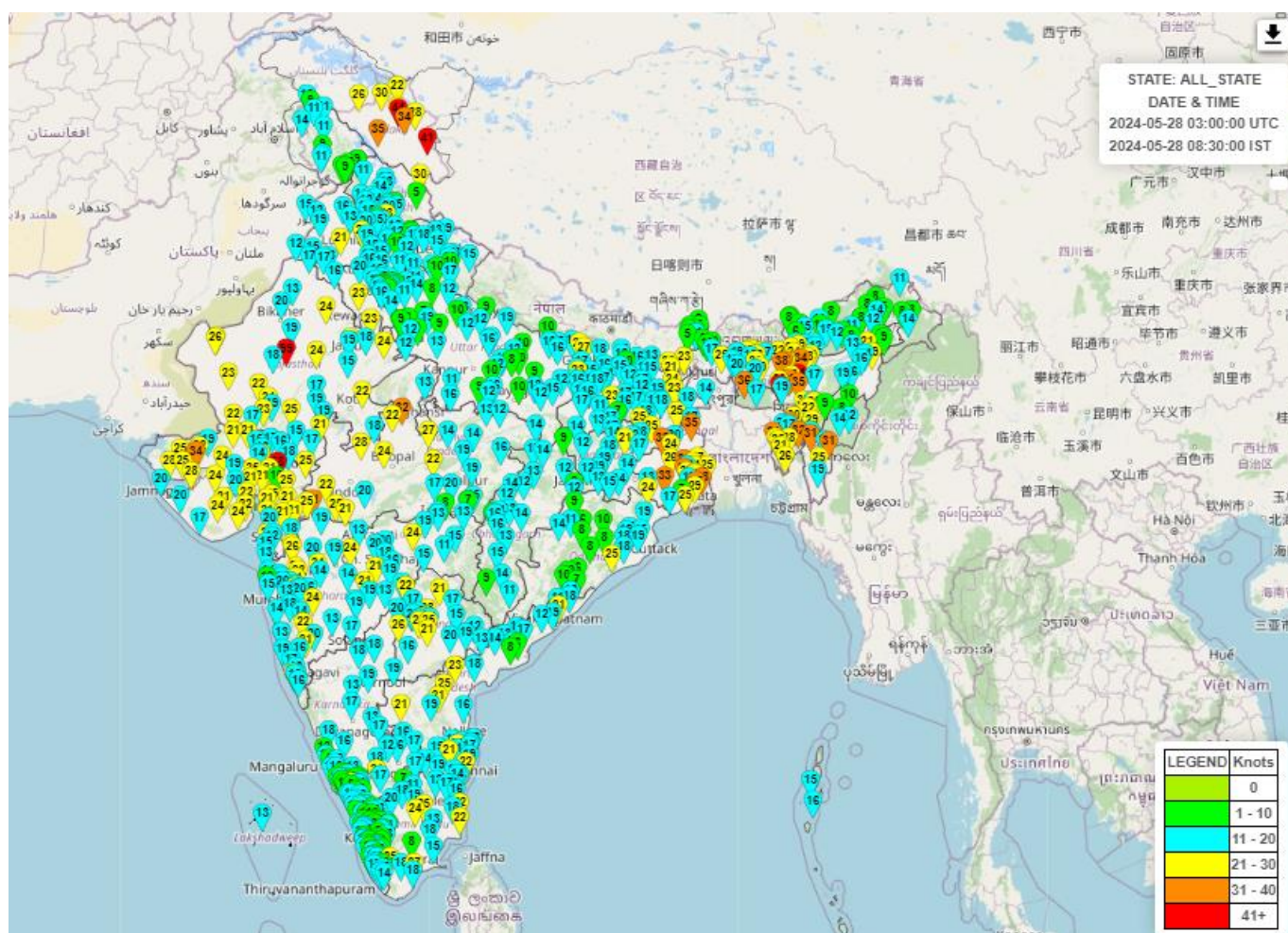
**Significant amount of rainfall (in cm):**

- ❖ **Assam & Meghalaya:** Sohra RKM (dist. East Khasi Hills) 59, Mawphlang (dist East Khasi Hills) 39, Cherrapunji (dist East Khasi Hills) 39, Mawsynram (dist East Khasi Hills) 36, Jowai\_aws (dist West Jaintia Hills) 27, Shillong C.s.o. (dist East Khasi Hills) 24, Umrangso (dist N. C. Hills) 24, Shillong\_ Aws (dist East Khasi Hills) 24, Mawkyrwat\_arg (dist South West Khasi Hills) 23, Williamnagar (dist East Garo Hills) 23, Karimganj\_aws (dist Karimganj) 22, Mawkyrwat (dist South West Khasi Hills) 22, Khliehriat (dist East Jaintia Hills) 18, Silchar\_aws (dist Cachar) 17, Barapani (dist Ri Bhoi) 17, Karimganj (dist Karimganj) 16, Matijuri (dist Hailakandi) 16, B P Ghat (dist Karimganj) 16, Lala Arg (dist Hailakandi) 16, Hailakandi\_ Aws (dist Hailakandi) 15, Silchar (dist Cachar) 15, Badarpur Arg (dist Karimganj) 15, Udalguri\_aws (dist Udalguri) 15, A P Ghat (dist Cachar) 14, Gharmura (dist Hailakandi) 13, Halflong (dist N. C. Hills) 11, Lakhipur Arg (dist Cachar) 9, Dholai (dist Cachar) 9, Kheronighat (dist Karbi Anglong) 8, Lakhipur (dist Cachar) 8, Amraghat Arg (dist Cachar) 8, Amraghat (dist Cachar) 8, Harinagar Arg (dist Karimganj) 7, Nongpuh (dist Ri Bhoi) 7,
- ❖ **Nagaland, Manipur, Mizoram & Tripura:** Kvk Dhalai (dist Dhalai) 24, Dm Office Arg (dist West Tripura) 23, Kailashahar Aero (dist Unakoti) 22, Agartala Aero (dist West Tripura) 21, Budhjongnagar Arg (dist West Tripura) 21, Amarpur (dist Gomati) 20, Hrc Nagicherra Arg (dist West Tripura) 19, Khowai (dist Khowai) 19, Lembuchhera (dist West Tripura) 19, Arundhutinagar (dist West Tripura) 19, Ashapara Aws (dist North Tripura) 18, Dharmanagar/ Panisagar (dist North Tripura) 18, Gandachara Aws (dist Dhalai) 17, Kadamtala Arg (dist North Tripura) 17, Amarpur Arg (dist Gomati) 17, Sabroom (dist South Tripura) 17, Kamalpur\_aws (dist Dhalai) 16, Udaipur (dist Gomati) 15, Aizwal (dist Aizawl) 14, Kvk South (dist South Tripura) 14, Lengpui (dist Aizawl) 14, Kanchanpur (dist North Tripura) 13, Kamalpur (dist Dhalai) 12, Cti Arg (dist Sipahijala) 11, Belonia (dist South Tripura) 11, Sabroom Aws (dist South Tripura) 11, Gokulpur\_aws (dist Gomati) 11, Gandechehra (dist Dhalai) 11, Bishalgarh (dist Sipahijala) 11, Kolasib Agri (dist Kolasib) 10, Mamit Agri (dist Mamit) 10, Ukhrul (dist Ukhrul) 9, Lunglei (dist Lunglei) 9, Kolasib\_aws
- ❖ **Kerala & Mahe:** Chavara Aws (dist Kollam) 14, Paripalli Aws (dist Kollam) 13, Mavelikara (dist Alapuzha) 12, Kayamkulam (dist Alapuzha) 11, Kollam Rly (dist Kollam) 11, Cherthala (dist Alapuzha) 10, Vaikom (dist Kottayam) 9, Nooranad Aws (dist Alapuzha) 9, Vaikom Aws (dist Kottayam) 8, Thattathumala Aws (dist Thiruvananthapuram) 8, Kochi I.a.f. (dist Ernakulam) 8, Thycattussery Aws (dist Alapuzha) 7, Mancompu (dist Alapuzha) 7, Kayamkulam\_Agri (dist Alapuzha) 7, Palode Aws (dist Thiruvananthapuram) 7, Trivandrum Aero (dist Thiruvananthapuram) 7;
- ❖ **Arunachal Pradesh:** Nari Aws (Dist Lower Siang) 13; Basar Aws (Dist Leparada) 8; Huri Aws (Dist Kurung Kumey) 7;
- ❖ **Gangetic West Bengal:** Basirhat (pt) (dist North 24 Parganas) 6, Mo Saltlake (dist North 24 Parganas) 5, Alipore (dist Kolkata) 5, Canning (dist South 24 Parganas) 5, Uluberia (dist Howrah) 5, Burdwan (pto) (dist Burdwan) 5, Diamond Harbour (dist South 24 Parganas) 4, Dum Dum (dist North 24 Parganas) 4, Barrackpur( Iaf) (dist North 24 Parganas) 4;
- ❖ **Tamil Nadu, Puducherry & Karaikal:** Pechiparai (dist Kanniyakumari), Perunchani Dam (dist Kanniyakumari) 5 each, Suralacode (dist Kanniyakumari), Thirparappu (dist Kanniyakumari), Balamore (dist Kanniyakumari), Puthan Dam (dist Kanniyakumari), Mullanginavillai (dist Kanniyakumari), Kalial (dist Kanniyakumari) 4 each;
- ❖ **Lakshadweep:** Agathi (dist Lakshadweep) 5, Minicoy (dist Lakshadweep) 2, Amini (dist Lakshadweep) 2;
- ❖ **Uttarakhand:** Sama (dist Bageshwar) 5, Chamoli (dist Chamoli) 2;
- ❖ **Bihar:** Tribeni/balmikinagar (dist West Champaran) 4, Bagaha (dist West Champaran) 4, Ramnagar (dist West Champaran) 3;
- ❖ **East Uttar Pradesh:** Nichlaul (dist Maharajganj) 2, Notanwa (dist Maharajganj) 2, Ballia Obsy (dist Ballia) 1, Maharajganj (dist Maharajganj) 1;

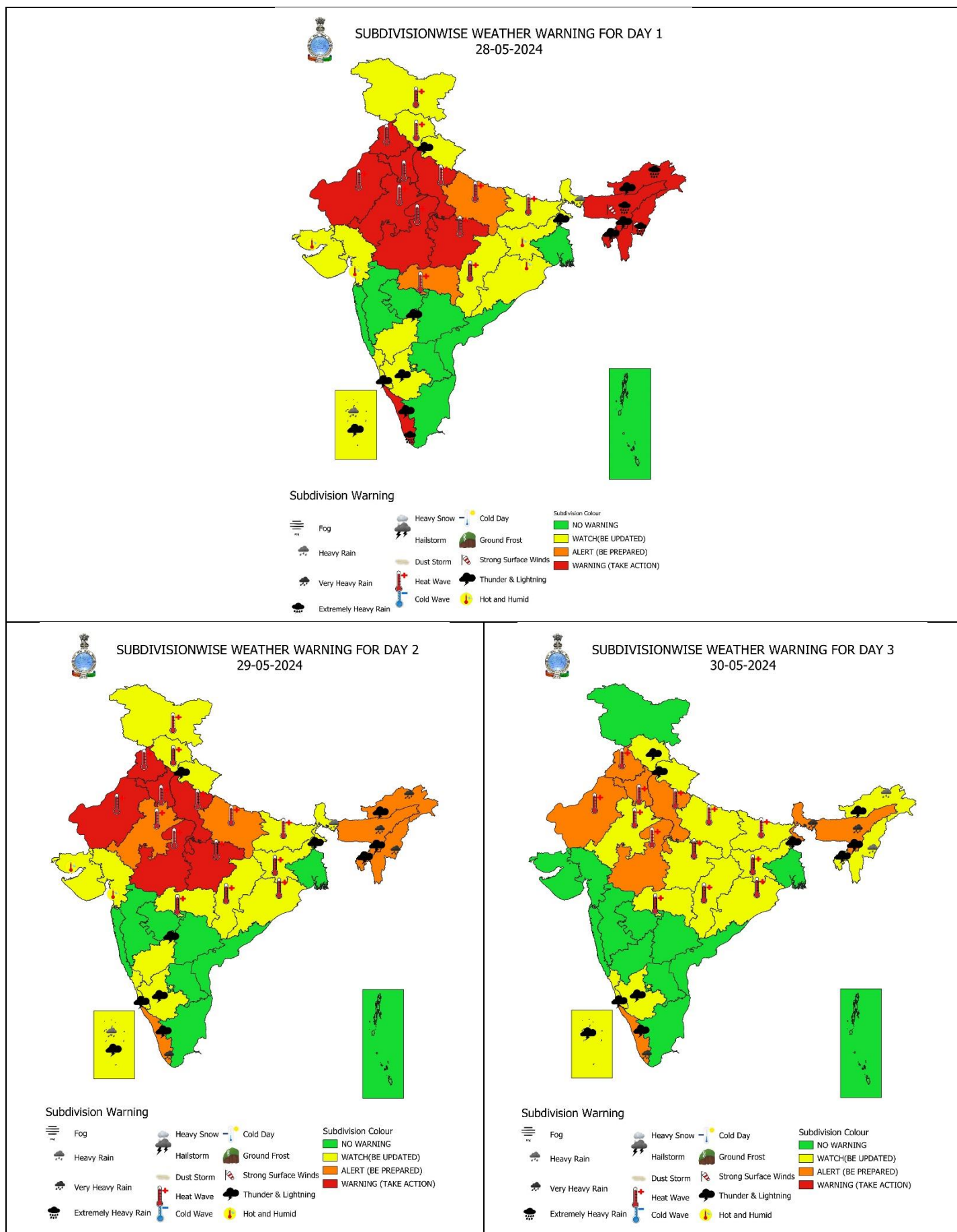
### Reported maximum wind speed (kmph) during past 24 hours till 0830 hours IST of today:

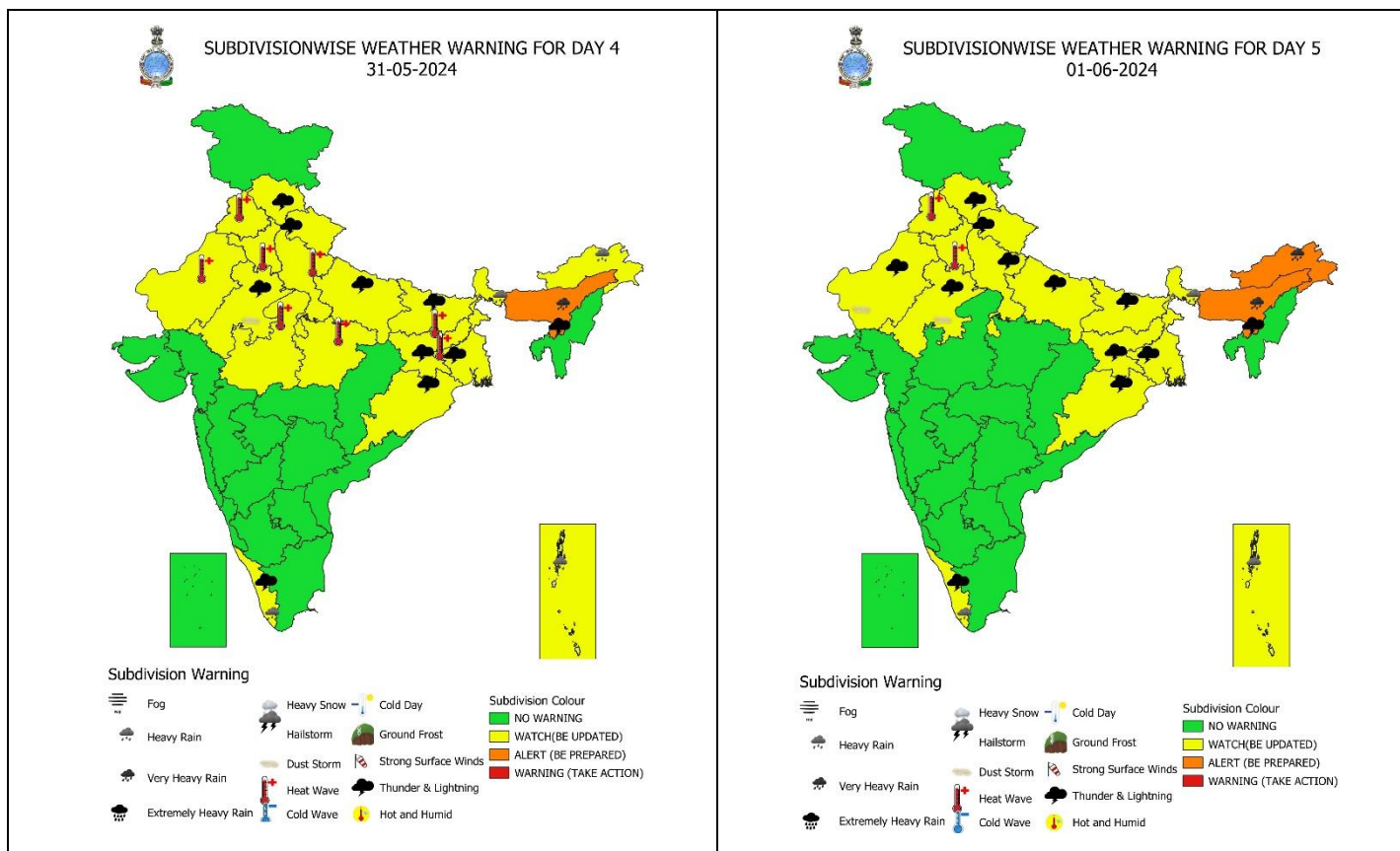
- ❖ **Gujarat State:** Panchmahal-107, Kachchh-63, Jamnagar-52, Ahmedabad-46, Dahod-46, Bharuch-46, Chhotaudepur-46, Morbi-44, Amreli-44, Bhavnagar-44
- ❖ **Gangetic West Bengal:** Hooghly-70, South\_Twenty\_Four\_Parganas-70, Murshidabad-65, West Medinipur-61, Durgapur-59, Howrah-57, Nadia-48
- ❖ **Assam:** Kamrup Metropolitan-70, Marigaon-63, Goalpara-55, Nagaon-54, Kokrajhar-52, Bongaigaon-52, Nalbari-52
- ❖ **Tripura:** North Tripura-67, West Tripura-63
- ❖ **Madhya Pradesh:** Ashoknagar-59, Shajapur-52, Sagar-50, Jalgaon-46, Sehore-44, Guna-41, Chhindwara-41, Barwani-41
- ❖ **Maharashtra:** Nandurbar-57, Nashik-48, Jalna-44, Ahmednagar-44
- ❖ **Mizoram:** Aizawl-57, Champhai-57
- ❖ **Himachal Pradesh:** Lahaul & Spiti-55, Solan-42
- ❖ **Tamil Nadu, Puducherry & Karaikal:** Toothukudi-50, Tenkasi-46, Tiruchirappalli-46
- ❖ **Bihar:** Gopalganj-50, Araria-42, Katihar-44, Krishnaganj-42, Sahibganj-42, Nalanda-42, Kushinagar-39
- ❖ **Rajasthan:** Jaisalmer-48, Udaipur-46, Sirohi-44, Sikar-44, Karauli-44, Ajmer-44, Barmer-42, Alwar-42, Jalore-41, Baran-41
- ❖ **Telangana:** Vikarabad-48, Ranga Reddy-46, Hyderabad-42
- ❖ **Sub-Himalaya West Bengal & Sikkim:** Cooch Behar-46
- ❖ **Jharkhand:** Giridih-46, Jamtara-46, Pakur-46, Bokaro-39
- ❖ **Coastal Andhra Pradesh & Yanam:** Prakasam-46, Visakhapatnam-39

**Fig.: Gusty winds reported over the country (in knots, 1 Knot = 1.85 kmph) from 0830 hrs IST of 27.05.2024 to 0830 hrs IST of 28.05.2024**



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





**IMPACT & ACTION SUGGESTED due to very heavy rainfall/extremely falls over Nagaland, Mizoram, Manipur & Tripura, Arunachal Pradesh, Kerala & Mahe on 28<sup>th</sup> & 29<sup>th</sup>; Assam, Meghalaya during 28<sup>th</sup> May-01<sup>st</sup> June, 2024.**

### 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/landslips/mudslips/landsinks/mudsinks
- 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)

### A. 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:**

**Red alert Areas: (Rajasthan, Punjab, Haryana, Chandigarh, Delhi, West Uttar Pradesh, Madhya Pradesh)**

- Very high likelihood of developing heat illness and heat stroke in all ages.
- Extreme care needed for vulnerable people.

**Orange alert Areas (Vidarbha, East Uttar Pradesh)**

- 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 (Jammu division, Himachal Pradesh, Chhattisgarh, Bihar, Jharkhand, Odisha)**

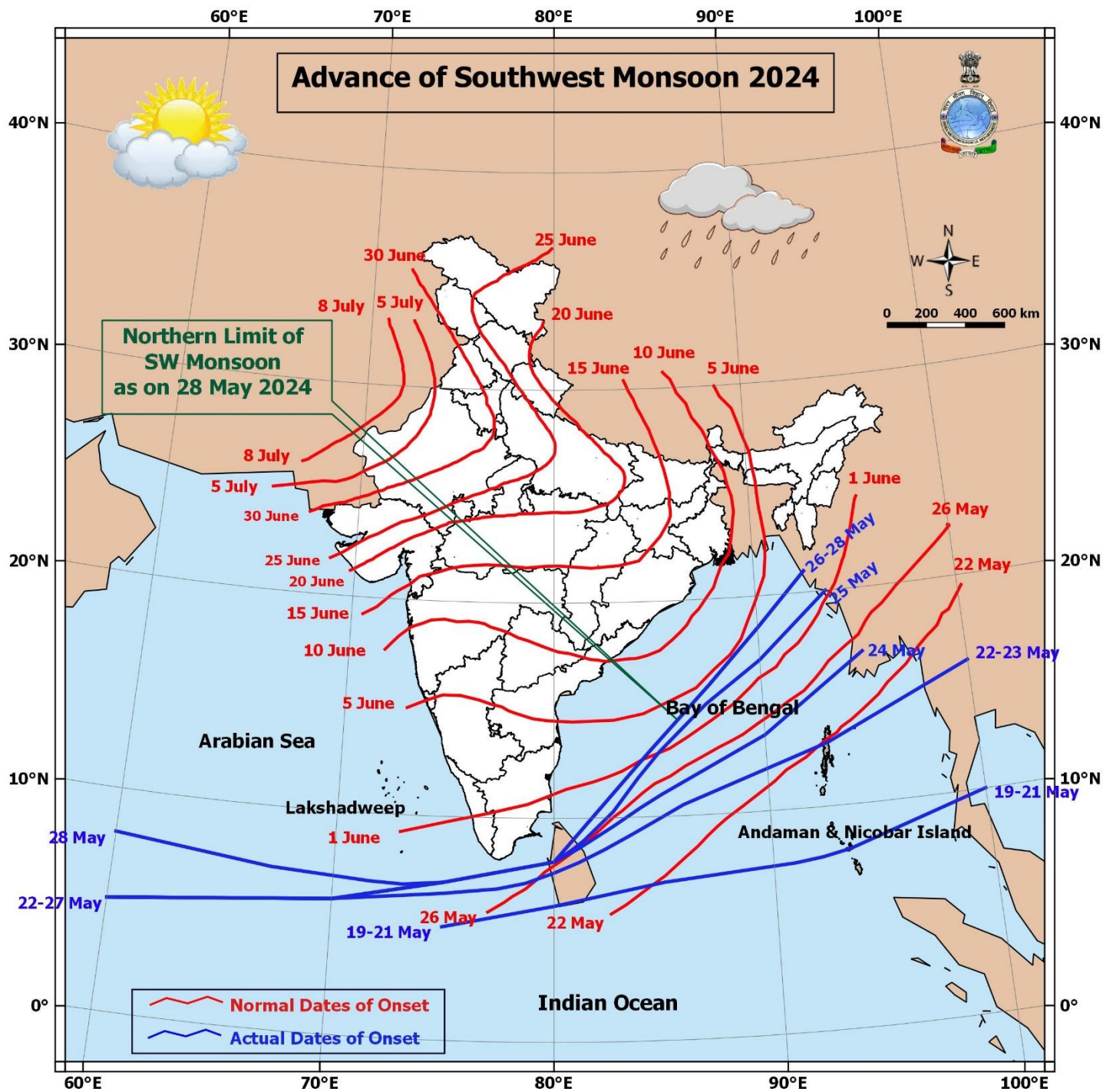
- Moderate temperature & heat is tolerable for general public but moderate health concern likely for vulnerable people e.g. infants, elderly, people with chronic diseases.
- Avoid heat exposure.
- Wear lightweight, light colour, loose, cotton clothes.
- Cover your head, use a cloth, hat or umbrella.

**Agromet advisories for Heavy Rainfall, Gusty winds and Heat Wave likely over various parts of the country**

**(Based on the IBF and advisories issued by different AMFUs)**

- Drain out excess water from crop fields to avoid water stagnation in Kerala, West Bengal and North-Eastern States.
- Apply light and frequent irrigation to standing crops to avoid heat stress; provide mulching to conserve soil moisture and minimise evaporation in Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Uttar Pradesh, Rajasthan, Bihar, Jharkhand, Odisha, Madhya Pradesh, Vidarbha and Chhattisgarh.
- Provide mechanical support to horticultural crops & staking to vegetables to prevent damage from gusty winds.

## Advance of Southwest Monsoon 2024





### Fishermen Warning Graphics

**Day 1: 28.05.2024/11:30 AM to 29.05.2024/05:30AM**



**Day 2: 29.05.2024/05:30AM to 30.05.2024/05:30AM**



**Day 3: 30.05.2024/05:30AM to 31.05.2024/05:30AM**



**Day 4: 31.05.2024/05:30AM to 01.06.2024/05:30AM**



**Day 5: 01.06.2024/05:30AM to 02.06.2024/05:30AM**



Squally WX with wind speed 35-45 kmph gusting to 55 kmph

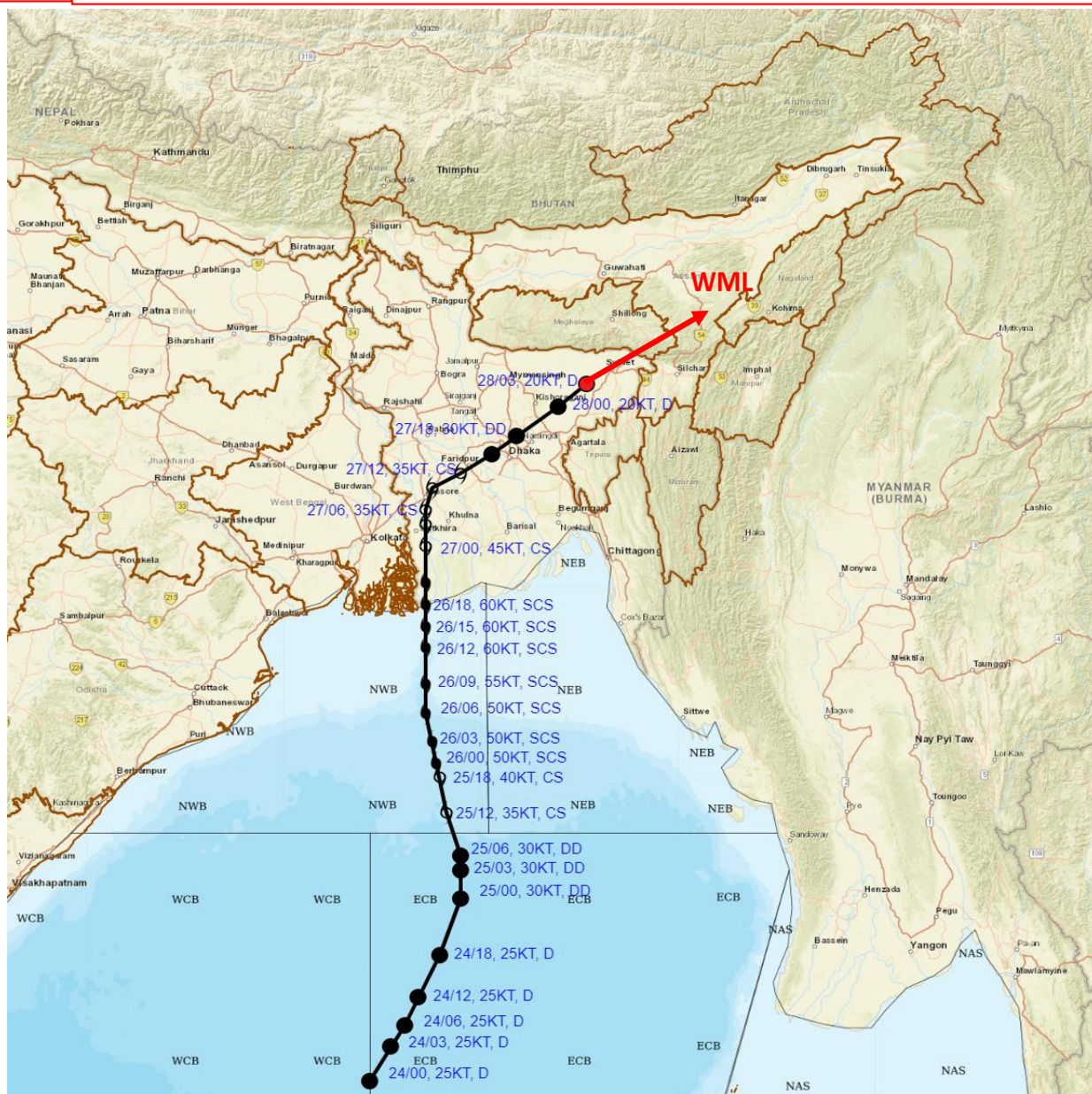
Squally WX with wind speed 45-55 kmph gusting to 65 kmph

Squally wind with speed 45-55 kmph gusting to 65 kmph

**Fishermen are advised not to venture into the marked areas.**



**FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH DEPRESSION (REMANANT OF CYCLONIC STORM 'REMAL') OVER EAST BANGLADESH BASED ON 0300 UTC (0830 IST) OF 28<sup>TH</sup> MAY 2024.**



DATE/TIME IN UTC

IST=UTC + 0530

L: LOW PRESSURE AREA

WML: WELL MARKED LOW PRESSURE AREA

D: DEPRESSION (17-27 KT)

DD: DEEP DEPRESSION (28-33 KT)

CS: CYCLONIC STORM (34-47 KT)

SCS: SEVERE CYCLONIC STORM (48-63KT)

VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)

ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)

SuCS: SUPER CYCLONIC STORM (≥ 120 KT)

● LESS THAN 34 KT

○ 34-47 KT

○ ≥ 48 KT

— OBSERVED TRACK

— FORECAST TRACK

▲ CONE OF UNCERTAINTY

## 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)



Probabilistic Forecast	
Terms	Probability of Occurrence (%)
Unlikely	< 25
Likely	25 - 50
Very Likely	50 - 75
Most Likely	> 75

## LEGENDS

### WARNING

<b>WARNING (TAKE ACTION)</b>
<b>ALERT ( BE PREPARED)</b>
<b>WATCH (BE UPDATED)</b>
<b>NO WARNING ( NO ACTION)</b>

### 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  $4.5^{\circ}\text{C}$  to  $6.4^{\circ}\text{C}$ .

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  $40^{\circ}\text{C}$**

Warm Night: When minimum temperature departure  $4.5^{\circ}\text{C}$  to  $6.4^{\circ}\text{C}$ .

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  $-4.5^{\circ}\text{C}$  to  $-6.4^{\circ}\text{C}$ .

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  $-4.5^{\circ}\text{C}$  to  $-6.4^{\circ}\text{C}$ .

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)



**Squall**

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

Moderate: Wind speed 52-61 kmph

Severe: Wind speed 62-87 kmph

Very Severe: Wind speed  $>87$  kmph



**Sea State**

**Effect of various waves in the sea over specific area**

Rough to very rough: Wind speed 41-62 kmph (22-33 knots) & Wave height 2.5-6 metre

High to very high: Wind speed 63-117 kmph ( 34-63 knots) & Wave height 6-14 metre

Phenomenal: Wind speed  $>117$  kmph ( $>63$  knots) & Wave height  $>14$  metre



**Cyclone**

Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)

Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)

Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots)

Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots)

Super Cyclone Strom: Wind speed  $>220$  kmph ( $>119$  knots)