



India Meteorological Department
(Ministry of Earth Sciences)

NATIONAL BULLETIN NO.19 (BOB/01/2024)

TIME OF ISSUE: 0150 HOURS IST DATED: 27.05.2024
FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)
CHIEF SECRETARY, GOVT. WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 0863-2441029, 08645-246600)
CHIEF SECRETARY, GOVT. OF TAMIL NADU (FAX NO. 044-25672304)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575, 2334145)
CHIEF SECRETARY, GOVT. OF TRIPURA (FAX NO. 0381-2414013, 2413200)
CHIEF SECRETARY, GOVT. OF MIZORAM (FAX NO. 0389-2322745, 2320588)
CHIEF SECRETARY, GOVT. OF MANIPUR (FAX NO. 0385-2452629)
CHIEF SECRETARY, GOVT. OF NAGALAND (FAX NO. 0370-2270057)
CHIEF SECRETARY, GOVT. OF ASSAM (FAX NO. 0361-2260900)
CHIEF SECRETARY, GOVT. OF MEGHALAYA (FAX NO. 0364-2225978)

Sub: Severe Cyclonic Storm "Remal" (pronounced as "Re-Mal") over North Bay of Bengal (Cyclone Warning for West Bengal Coast: Red Message)

The Severe Cyclonic Storm "Remal" (pronounced as "Re-Mal") over the North Bay of Bengal moved nearly northwards, with a speed of 11 kmph during past 06 hours and lay centered at 2330 hrs IST of yesterday, the 26th May, 2024 over Bangladesh and adjoining West Bengal coasts, near **latitude 21.7°N** and **longitude 89.2°E** about 110 km east of Sagar Islands (West Bengal), 110 km west-southwest of Khepupara (Bangladesh), 80 km south-southeast of Canning (West Bengal) and 100 km south-southwest of Mongla (Bangladesh).

The system is now crossing Bangladesh and adjoining West Bengal Coasts near Long. 89.2°E. It would continue to move nearly northwards for some more time and then north-northeastwards thereafter and weaken gradually. **The eye of the cyclone is entering into land. Thus, the landfall process is continuing over coastal areas of Bangladesh and adjoining West Bengal coasts. It will continue for next 2 hours.**

Currently maximum sustained wind speed of 110-120 kmph gusting to 135 kmph similar wind speed likely to continue for next 3 hours and decrease thereafter. The cyclone is under the continuous surveillance of Kolkata Doppler Weather Radar.

Forecast track and intensity are given in the following table:

Date/Time (IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
26.05.24/2330	21.7/89.2	110-120 gusting to 135	Severe Cyclonic Storm
27.05.24/0530	22.5/89.4	70-80 gusting to 90	Cyclonic Storm
27.05.24/1130	23.3/89.8	50-60 gusting to 70	Deep Depression
27.05.24/1730	24.1/90.3	35-45 gusting to 55	Depression
27.05.24/2330	25.1/91.0	25-35 gusting to 45	Well Marked Low Pressure Area

Warnings (Graphics Attached):

Heavy Rainfall Warning:

- (a) **West Bengal:** Light to moderate rainfall at most places with **heavy to very heavy rainfall** at a few places is likely over coastal districts of West Bengal and eastern districts of Gangetic West Bengal adjacent to Bangladesh on 27th May. The peak rainfall activity is likely till noon of 27th May.
Light to moderate rainfall at most places with **heavy to very heavy rainfall** at isolated places likely over eastern districts of Sub-Himalayan West Bengal on 27th and 28th May.
- (b) **Odisha:** Light to moderate rainfall at most places with isolated **heavy rainfall** likely over North Coastal Odisha till morning of 27th May.
- (c) **Northeastern States:** Light to moderate rainfall at most places with **heavy to very heavy rainfall** at isolated places is likely over Assam, Meghalaya, Arunachal Pradesh, Nagaland, Mizoram, Manipur & Tripura on 27th & 28th May. Isolated **extremely heavy rainfall** (≥ 20 cm) is also likely over Assam, Meghalaya on 27th & 28th May, Arunachal Pradesh on 28th May and Mizoram & Tripura on 27th May.

Wind Warning:

(a) Bay of Bengal

- ❖ **Gale wind speed reaching 110-120 kmph gusting to 135 kmph** will prevail over North Bay of Bengal during next 3 hours. It is likely decrease becoming 70-80 kmph gusting to 90 kmph by morning on 27th May and squally wind speed reaching 45-55 kmph gusting to 65 kmph by evening of 27th May.
- ❖ **Gale wind speed reaching 60-70 kmph gusting to 80 kmph** is prevailing over adjoining central Bay of Bengal and likely to decrease gradually becoming Squally wind speed reaching 50-60 kmph gusting to 70 kmph till morning of 27th May.

(b) Along & off Bangladesh and West Bengal coasts

- ❖ **Gale wind speed reaching 100-110 kmph gusting to 120 kmph** will continue to prevail along & off Bangladesh and adjoining West Bengal coasts during next 3 hours. It is likely decrease thereafter gradually to become 60-70 kmph gusting to 80 kmph by forenoon and squally wind 50-60 kmph gusting to 70 kmph by afternoon of 27th May.
- ❖ **Gale wind speed reaching 70-80 kmph gusting to 90 kmph** will continue to prevail over Howrah, Hoogly & Kolkata, **60-70 kmph gusting to 80 kmph** over East Medinipur during next 3 hours and decrease gradually thereafter.

(c) Along & off North Odisha coasts

Squally wind speed reaching 50-60 kmph gusting to 70 kmph is likely to prevail during next 3 hours and decrease gradually thereafter.

(d) Northeastern States

Squally wind speed reaching 50-60 kmph gusting to 70 kmph is likely over Mizoram Tripura & south Manipur on 27th May and **40-50 kmph gusting to 60 kmph** is likely over South Assam and Meghalaya on 27th May.

Storm surge warning:

Storm surge of about 1 meter height above astronomical tide is likely to inundate low lying areas of coastal West Bengal and 3-4 m above astronomical tide likely to inundate low lying areas of coastal Bangladesh during the time of landfall.

Sea condition warning:

(a) North Bay of Bengal

High to Very High Sea condition is likely over North Bay of Bengal till morning of 27th May and gradually improve becoming very rough to rough by afternoon of 27th May.

(b) Along & off Bangladesh and West Bengal coasts

High to very high sea condition is prevailing along & off Bangladesh and West Bengal coasts till 27th May morning and very rough to rough by afternoon of 27th May.

(c) Along & off North Odisha coast

Very rough sea condition is likely along & off North Odisha coast till morning of 27th May and improve thereafter.

(d) Central Bay of Bengal

Very rough sea condition is likely to prevail over central Bay of Bengal till morning of 27th May and improve thereafter.

Post Landfall Outlook:

The system is likely to maintain the intensity of cyclonic storm till morning of 27th May. Under its influence, heavy to very heavy rainfall likely over interior districts of eastern parts of Gangetic West Bengal adjacent to Bangladesh till noon of 27th May. Squally wind speed reaching 45-55 kmph gusting to 65 kmph is likely over these districts during the same period.

Damage Expected over South & North 24 Parganas, Howrah, Hoogly, Kolkata & adjoining East Medinipur districts of west Bengal:

- Major damage to thatched houses/ huts. Possibilities of damage to vulnerable structure.
- Unattached metal sheets may fly.
- Breaking of tree branches, uprooting of trees. Major damage to banana and papaya trees. Dead limbs may blow off from trees.
- Damage to power and communication lines due to breaking of branches and uprooting of 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 South & North 24 Parganas, Howrah, Hoogly, Kolkata & adjoining East Medinipur districts of West Bengal:

- Total suspension of fishing operations.
- Surface transport and shipping operations need to be regulated
- Onshore & Offshore operation need to be regulated as per guidelines
- Coastal hutment dwellers to move to safer places.
- People in affected areas to remain indoors.
- Avoid going to areas that face the water logging problems often.
- Avoid staying in vulnerable structure.

Fishermen Warning (graphics attached):

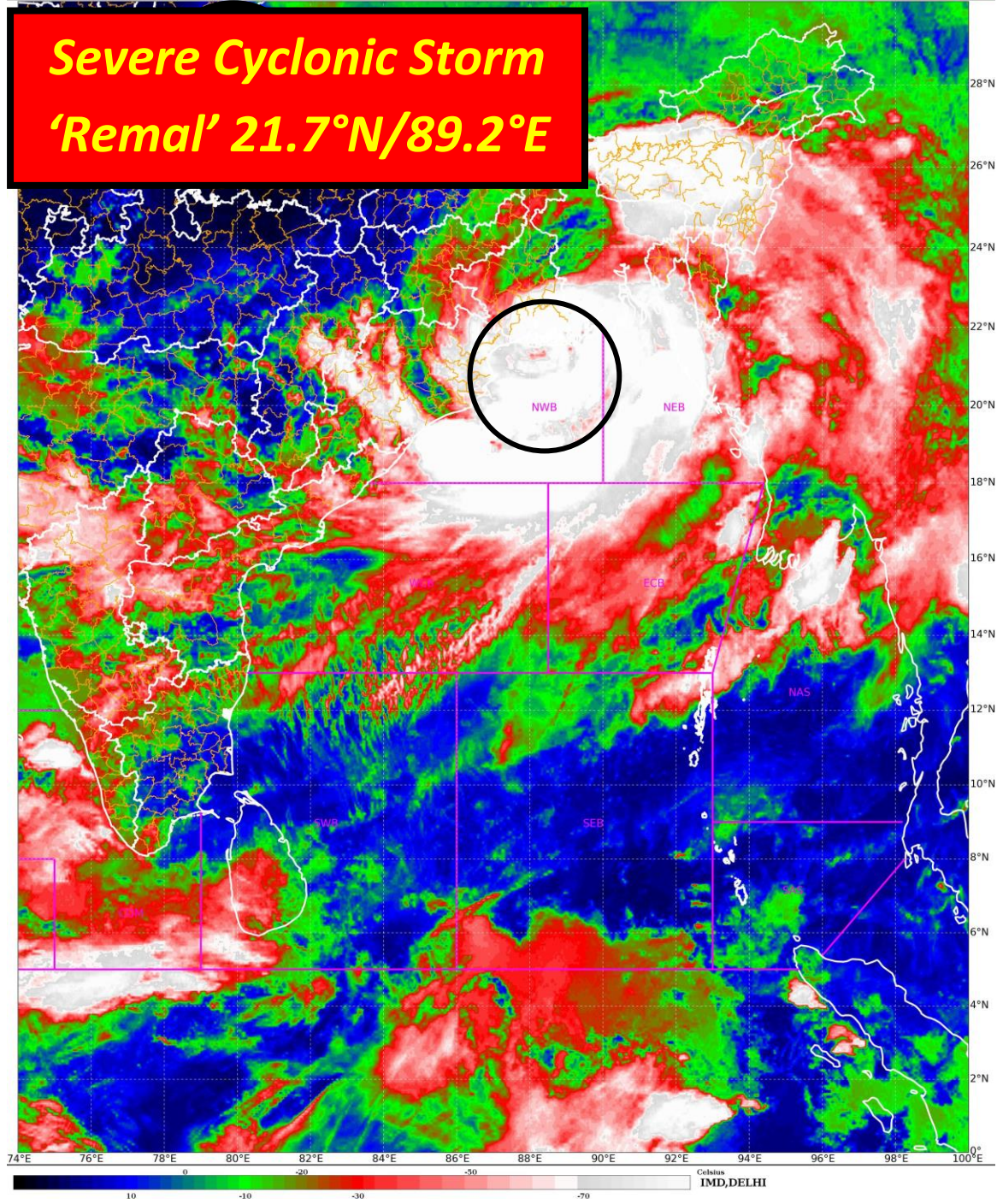
Fishermen are advised not to venture into North Bay of Bengal till 27th May. Fishermen out at sea are advised to return to the coast.

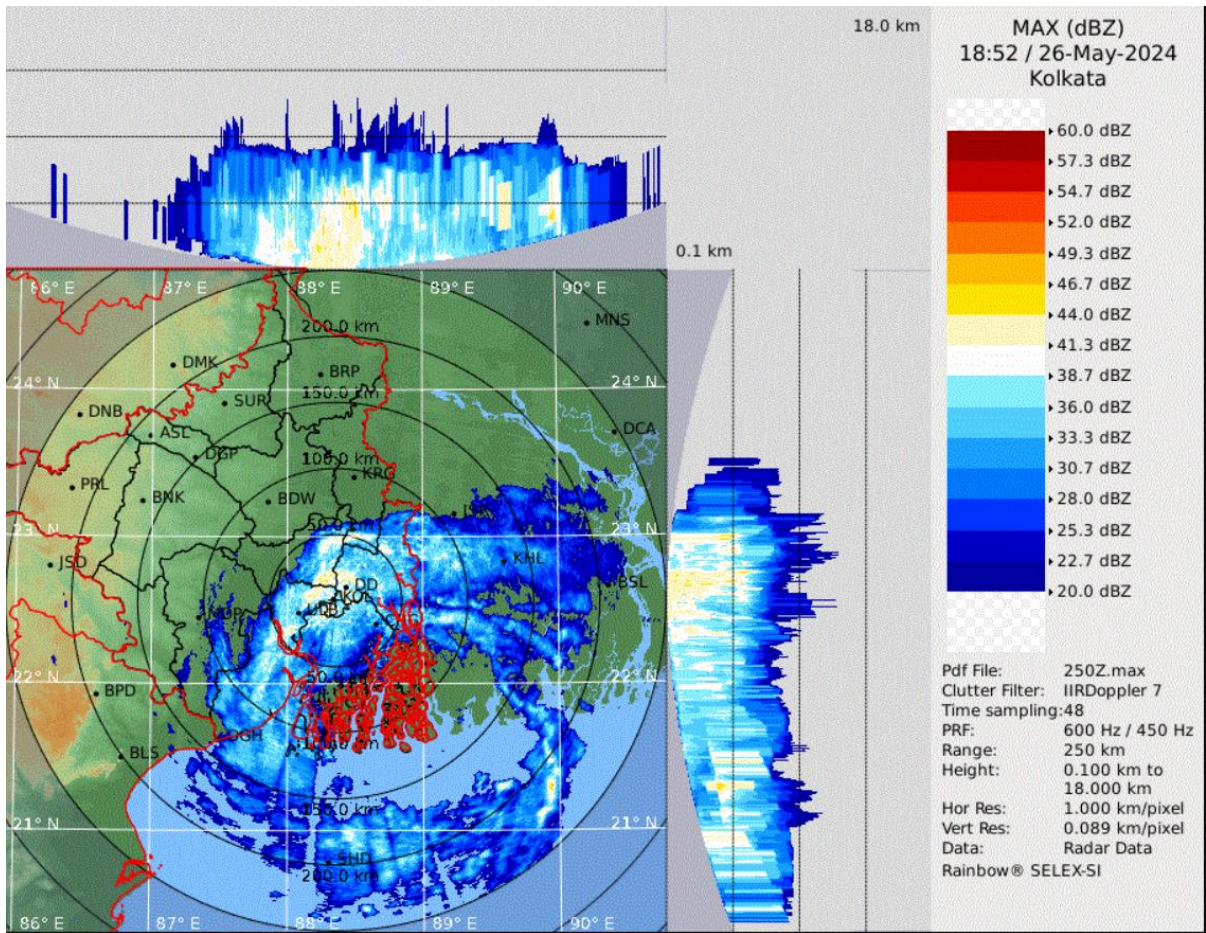
The system is under continuous surveillance and the next message will be issued at 0530 hours IST of today, the 27th May, 2024.

(Dr. Shashi Kant)

Scientist D, Cyclone Warning Division, New Delhi

*Copy to: ACWC Kolkata/ ACWC Chennai/ CWC Bhubaneswar/CWC Visakhapatnam/MO
Port Blair/RMC Guwahati*

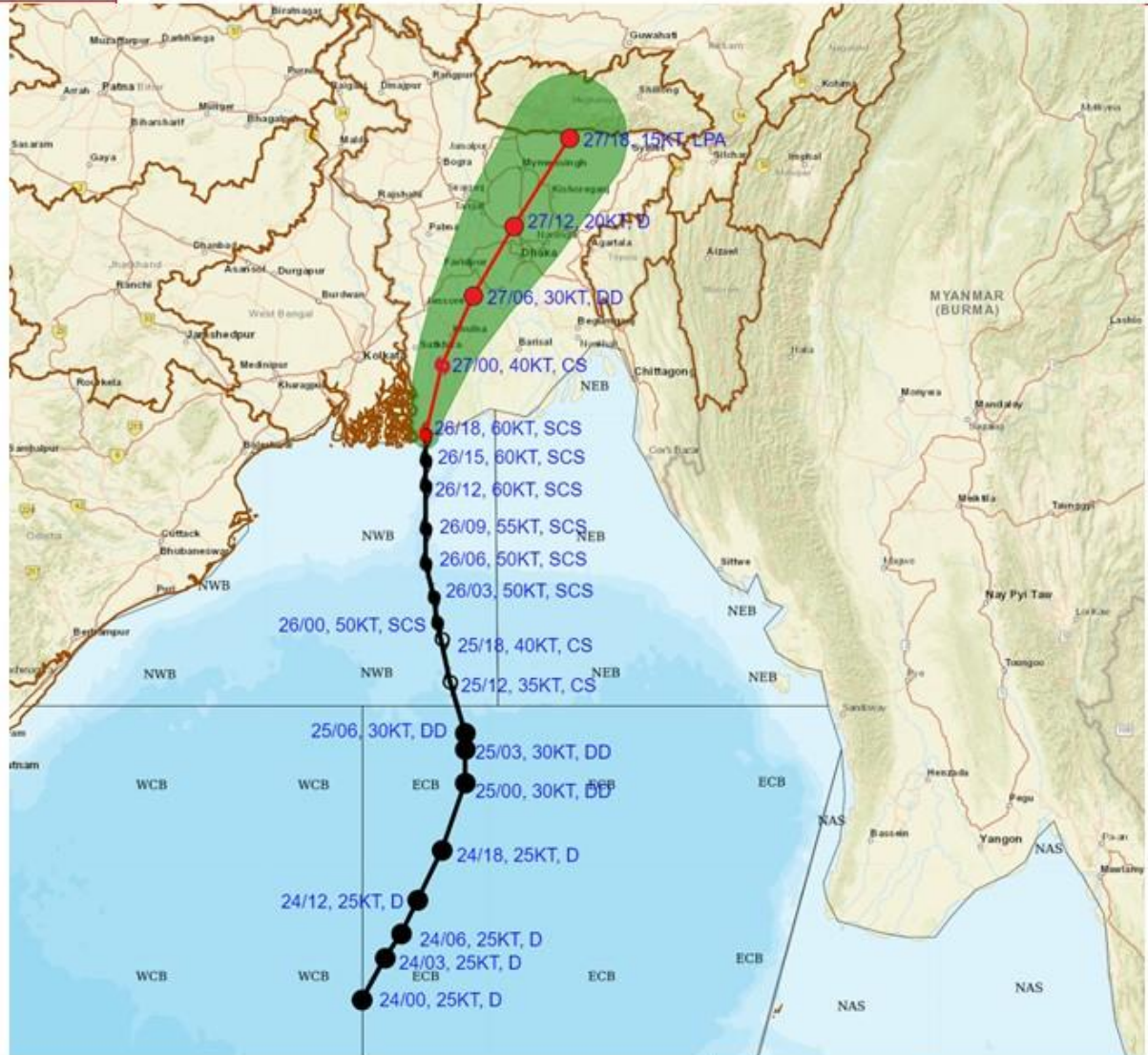




Kolkata Radar Image 0022 hrs IST of today, the 27th May



FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH SEVERE CYCLONIC STORM 'REMAL' OVER NORTH BAY OF BENGAL BASED ON 1800 UTC (2330 IST) OF 26TH 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 (\geq 120 KT)

● LESS THAN 34 KT

○ 34-47 KT

⊙ \geq 48 KT

— OBSERVED TRACK

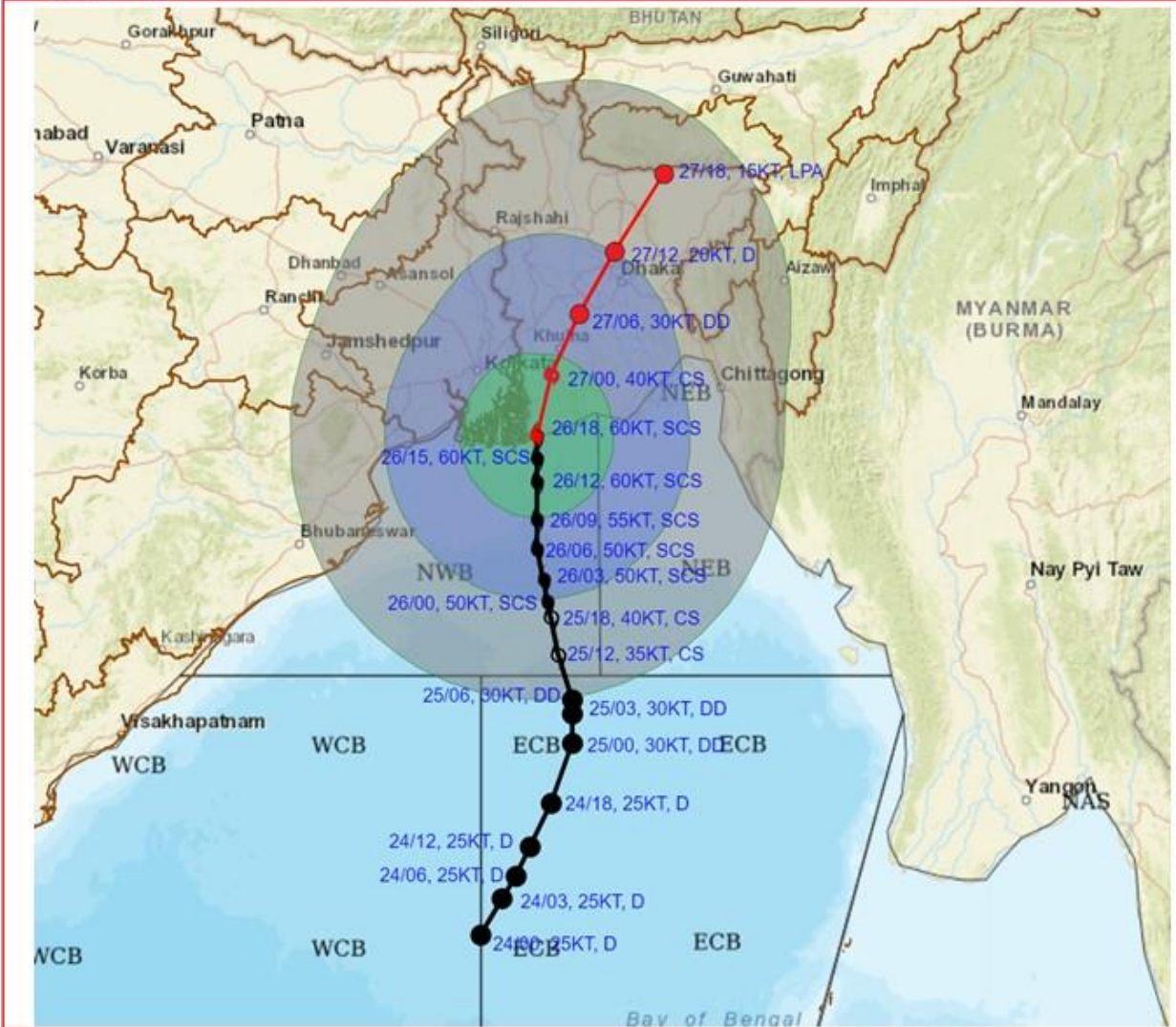
— FORECAST TRACK

▲ CONE OF UNCERTAINTY

Forecast Date and Time (UTC)	DISTANCE (KM) AND DIRECTION FROM STATIONS			
	Canning	Sagar Island	Khepupara	Mongla
26.05.24/1800	160, NE	240, NE	150, NNW	80, NNE
27.05.24/0000	80, ENE	160, ENE	100, WNW	30, NW



FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH SEVERE CYCLONIC STORM 'REMAL' OVER NORTH BAY OF BENGAL BASED ON 1800 UTC (2330 IST) OF 26TH 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

AREA OF MAXIMUM SUSTAINED WIND SPEED:

28-33 KT (52-61 KMPH)

34-49 KT (62-91 KMPH)

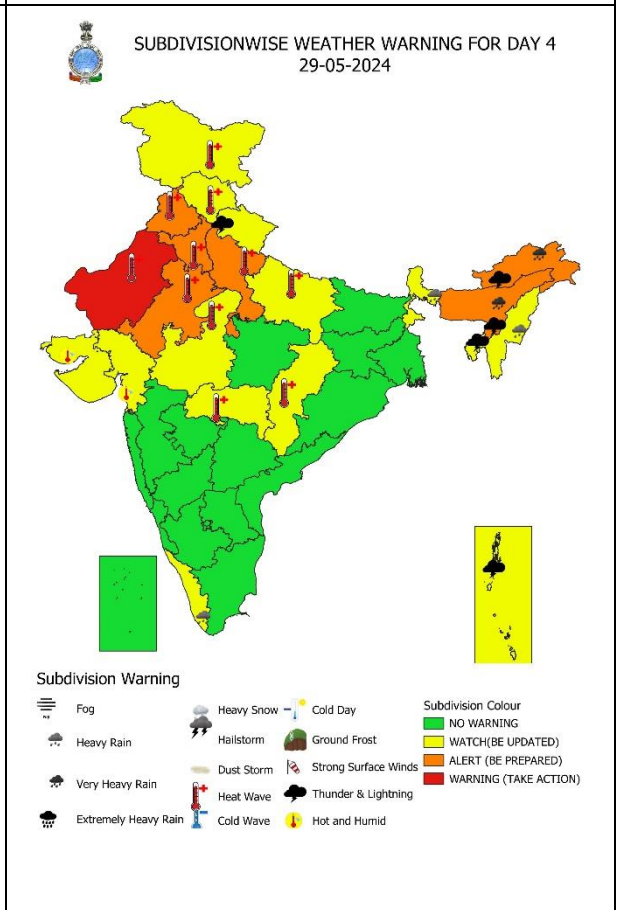
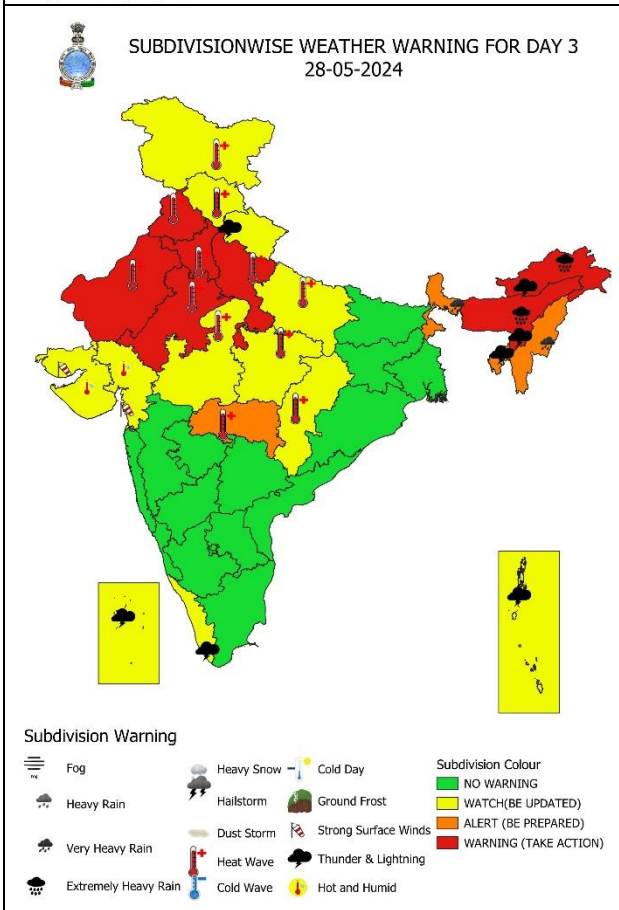
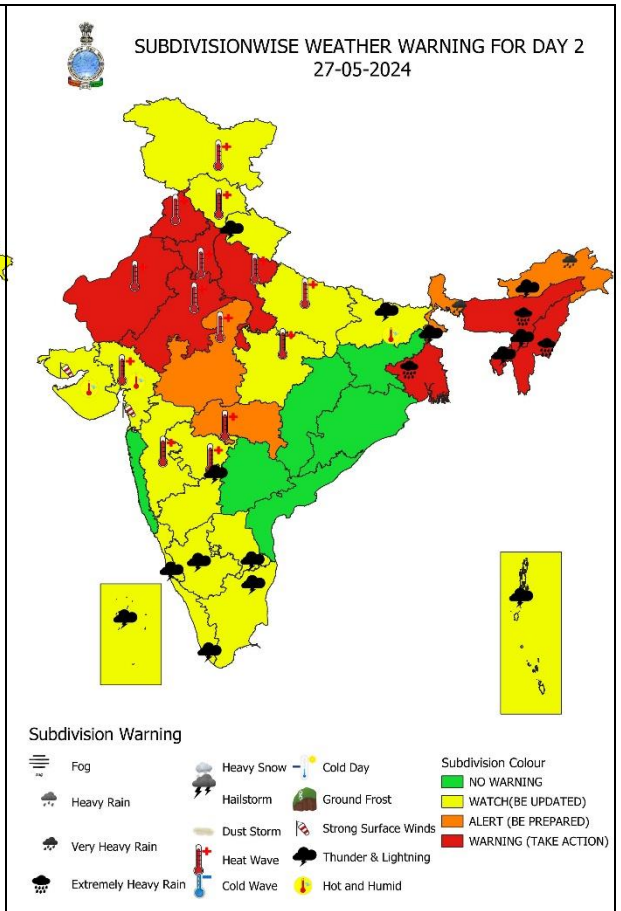
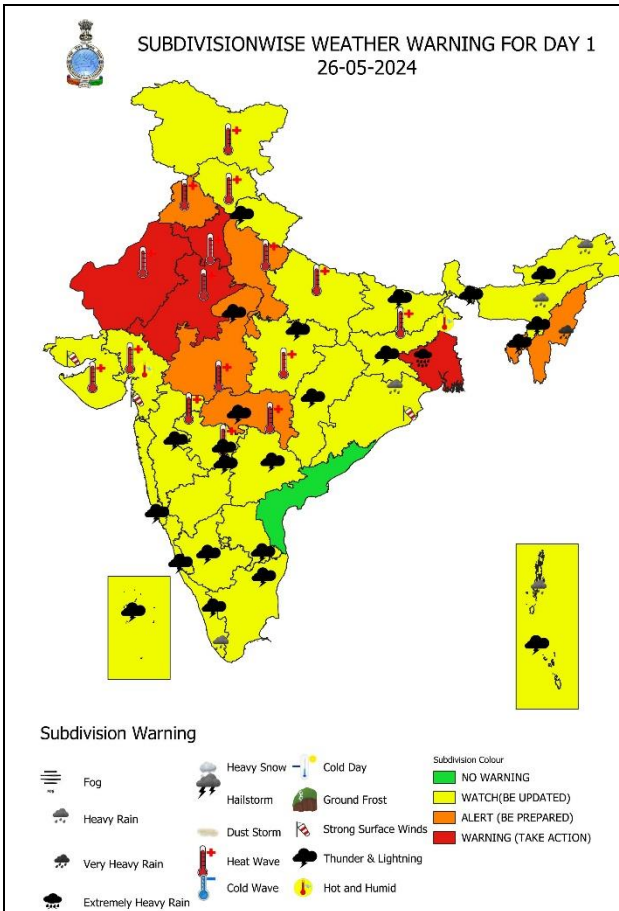
50-63 KT (92-117 KMPH)

≥ 64 KT (≥ 118 KMPH)

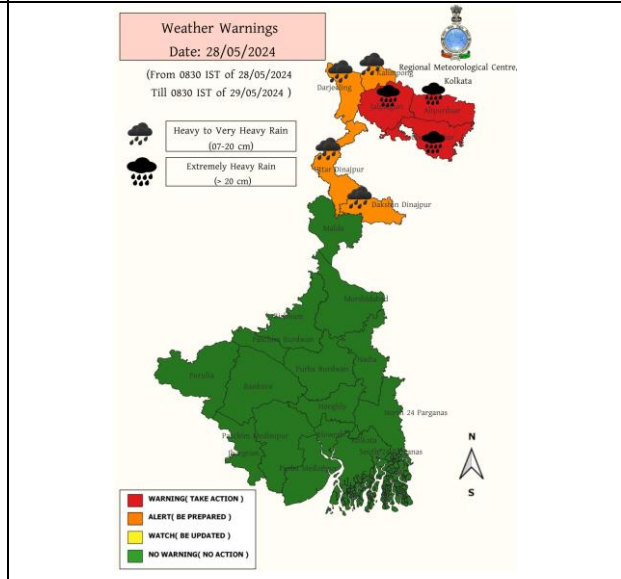
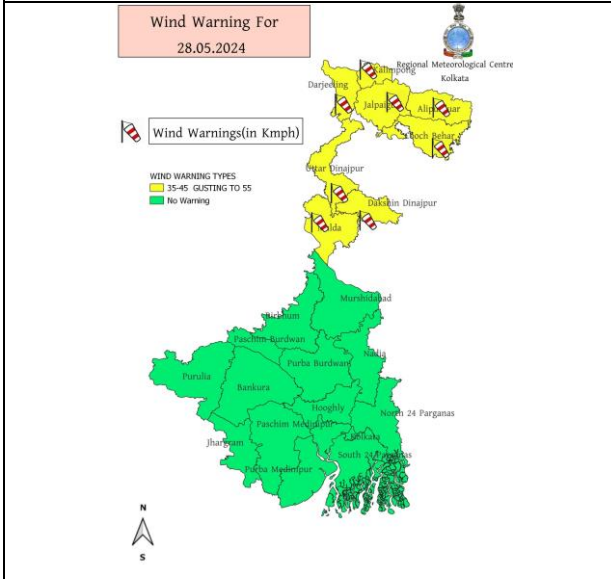
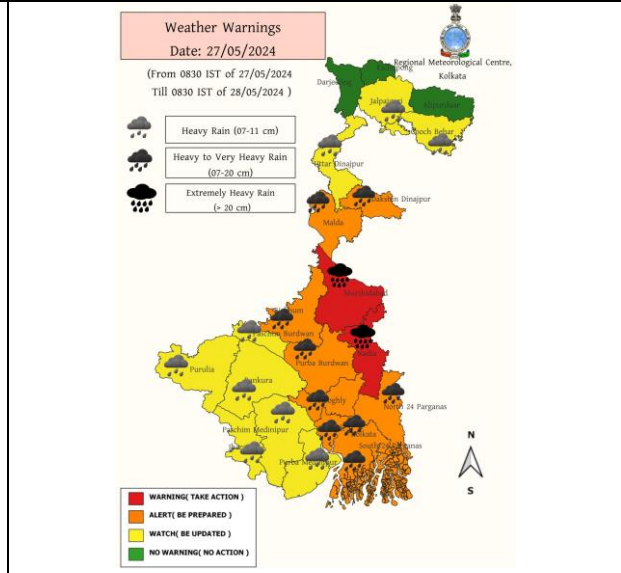
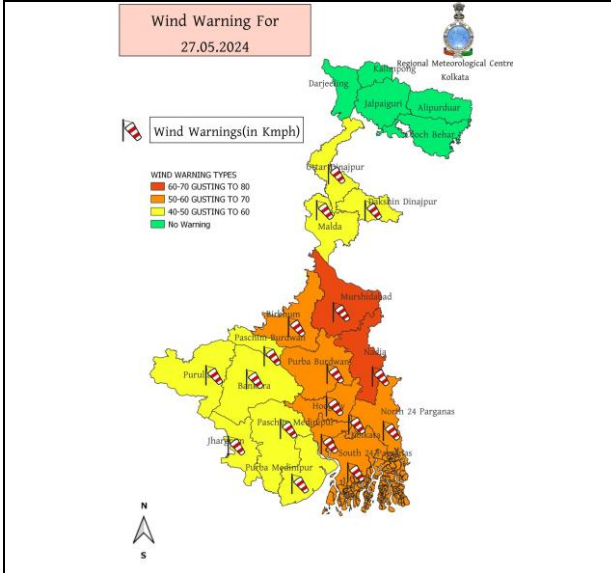
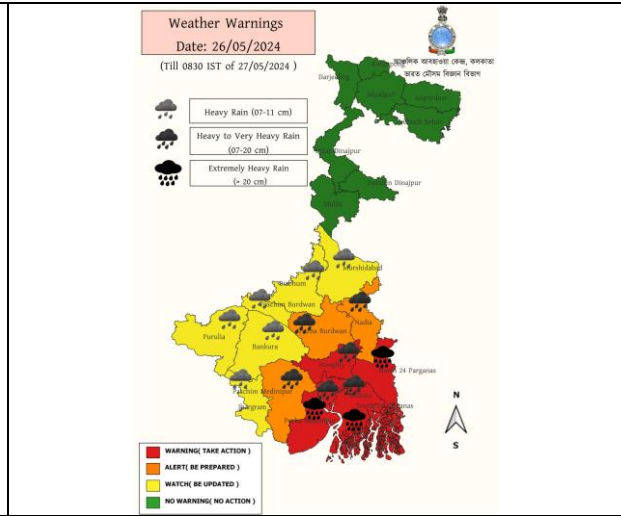
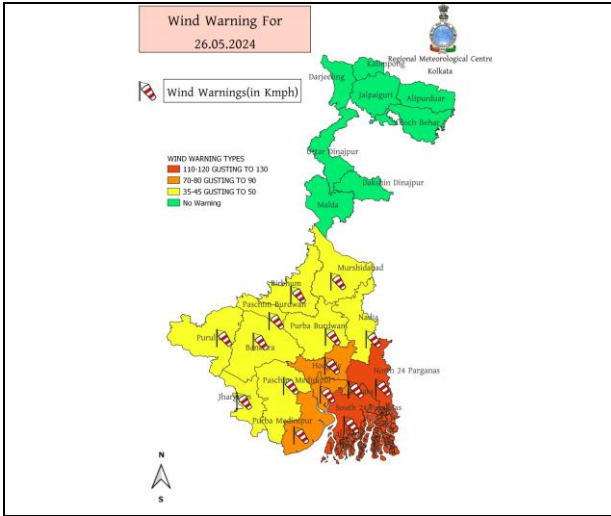
IMPACT OVER THE SEA

MSW (knot/kmph)	Impact	Action
28-33 (52-61)	Very rough seas	Total suspension of fishing operations
34-49 (62-91)	High to very high seas	Total suspension of fishing operations
50-63 (92-117)	Very high seas	Total suspension of fishing operations
≥ 64 (≥ 118)	Phenomenal	Total suspension of fishing operations

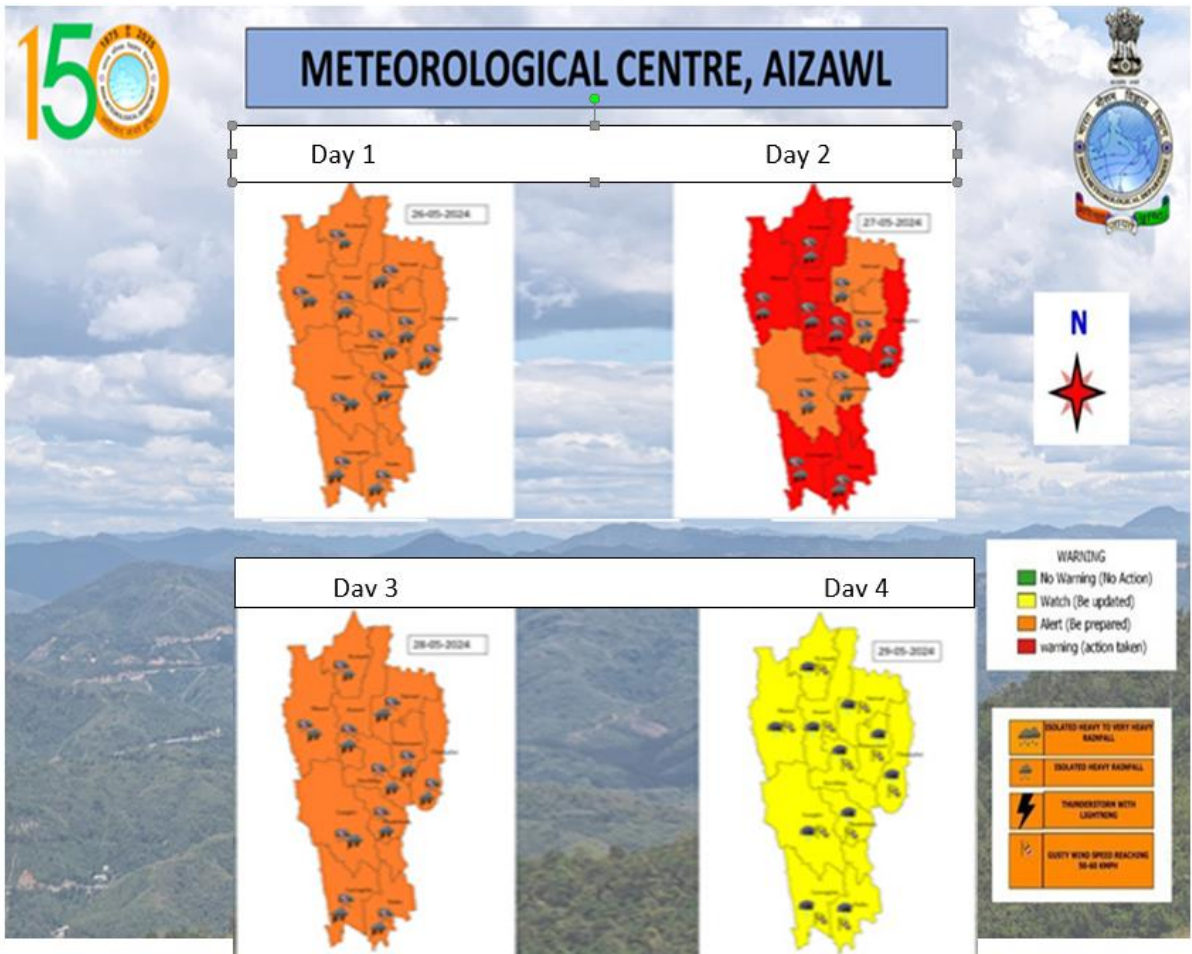
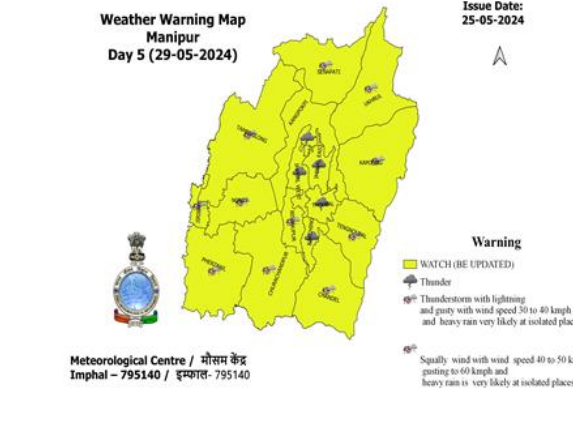
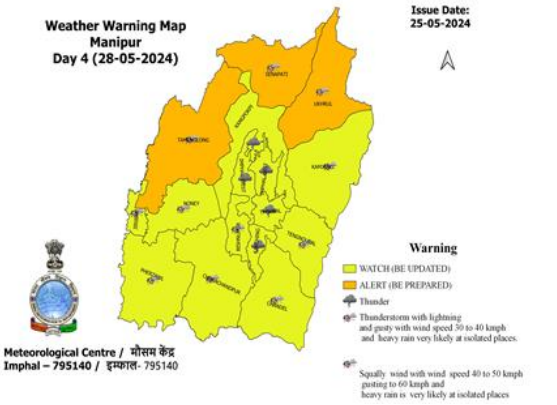
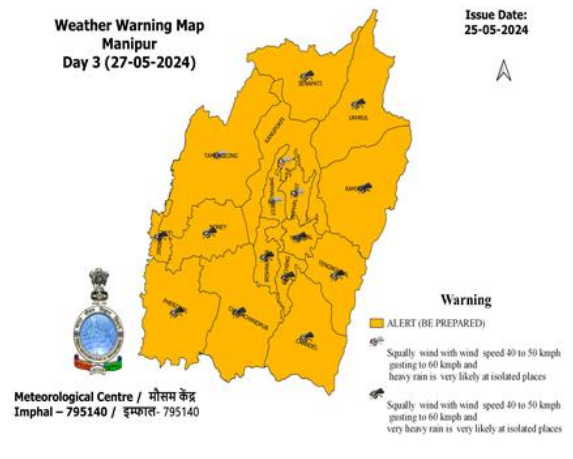
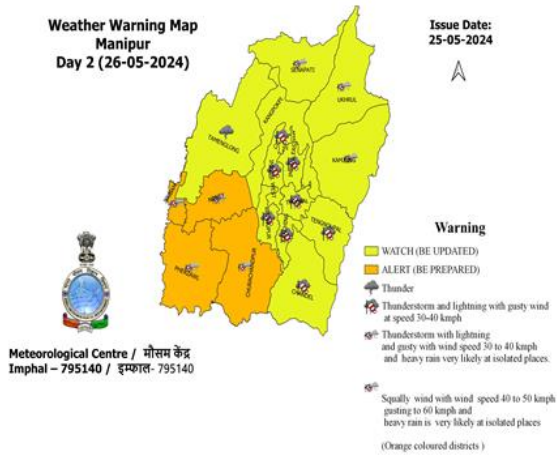
All India Warning Graphics



Warning Graphics of West Bengal



Warning Graphics of North-eastern States of India

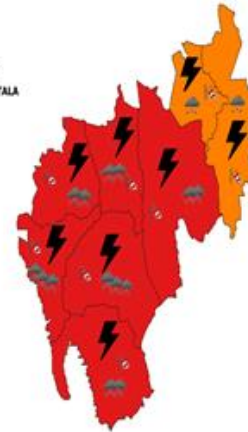




সতর্কতা
26-05-2024
(Valid from 0830 hrs IST of 26.05.2024 to 0830 hrs IST of 27.05.2024)



সতর্কতা
27-05-2024
(Valid from 0830 hrs IST of 27.05.2024 to 0830 hrs IST of 28.05.2024)



সতর্কতা
28-05-2024
(Valid from 0830 hrs IST of 28.05.2024 to 0830 hrs IST of 29.05.2024)

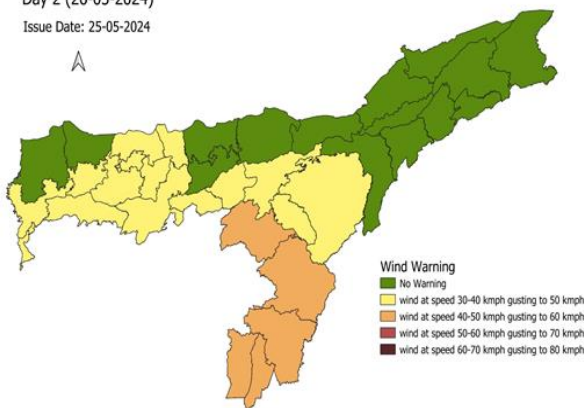


সতর্কতা
29-05-2024
(Valid from 0830 hrs IST of 29.05.2024 to 0830 hrs IST of 30.05.2024)



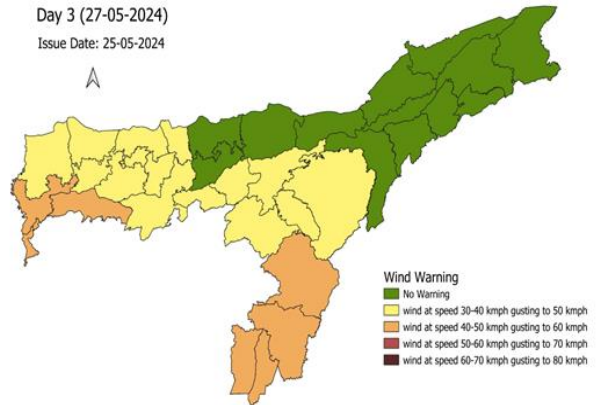
DISTRICT LEVEL WIND WARNING : ASSAM

Day 2 (26-05-2024)
Issue Date: 25-05-2024



DISTRICT LEVEL WIND WARNING : ASSAM

Day 3 (27-05-2024)
Issue Date: 25-05-2024





भारत सरकार/ Government of India
 पृथ्वी विज्ञान मंत्रालय/ Ministry of Earth Sciences
 भारत मौसम विज्ञान विभाग/ India Meteorological Department
 मौसम विज्ञान केन्द्र/ Meteorological Centre
 शिलांग, मेघालय - ७९३००५/ Shillong, Meghalaya-793005

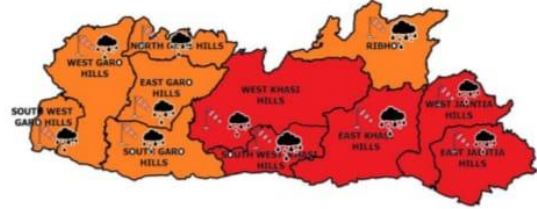


DISTRICT LEVEL WEATHER WARNING MAP FOR MEGHALAYA

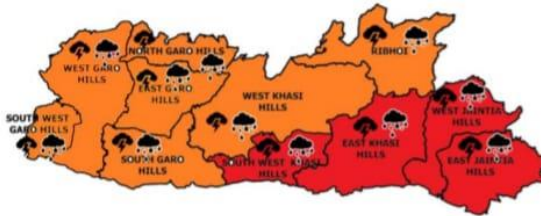
Weather Warning Map
 Meghalaya
 Day-1 (26-05-2024) Issue Date: 26-05-2024



Weather Warning Map
 Meghalaya
 Day-2 (27-05-2024) Issue Date: 26-05-2024



Weather Warning Map
 Meghalaya
 Day-3 (28-05-2024) Issue Date: 26-05-2024



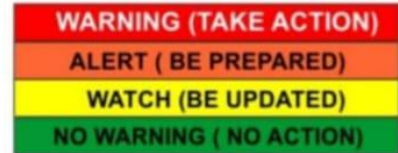
Weather Warning Map
 Meghalaya
 Day-4 (29-05-2024) Issue Date: 26-05-2024



Weather Warning Map
 Meghalaya
 Day-5 (30-05-2024) Issue Date: 26-05-2024



WARNING



INTENSITY	RAINFALL (mm)
Heavy Rain	64.5 to 115.5
Very Heavy Rain	115.6 to 204.4
Extremely Heavy rain	>204.4

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



Heavy Rainfall



Cyclone



Thunderstorm with Lightning



Squall/Hail



Strong Winds



Visibility

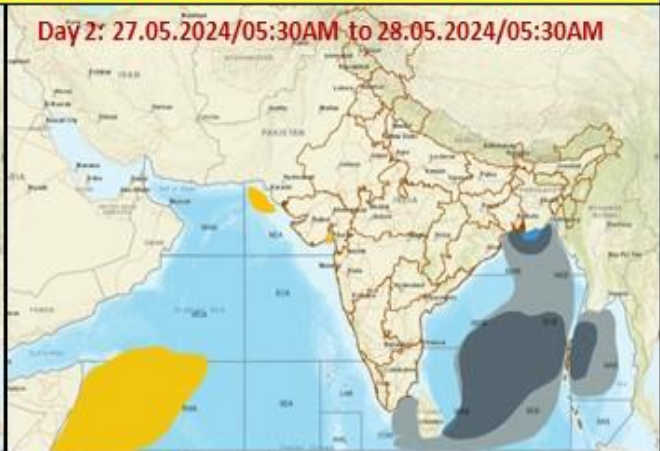








Lightning



Dense Fog

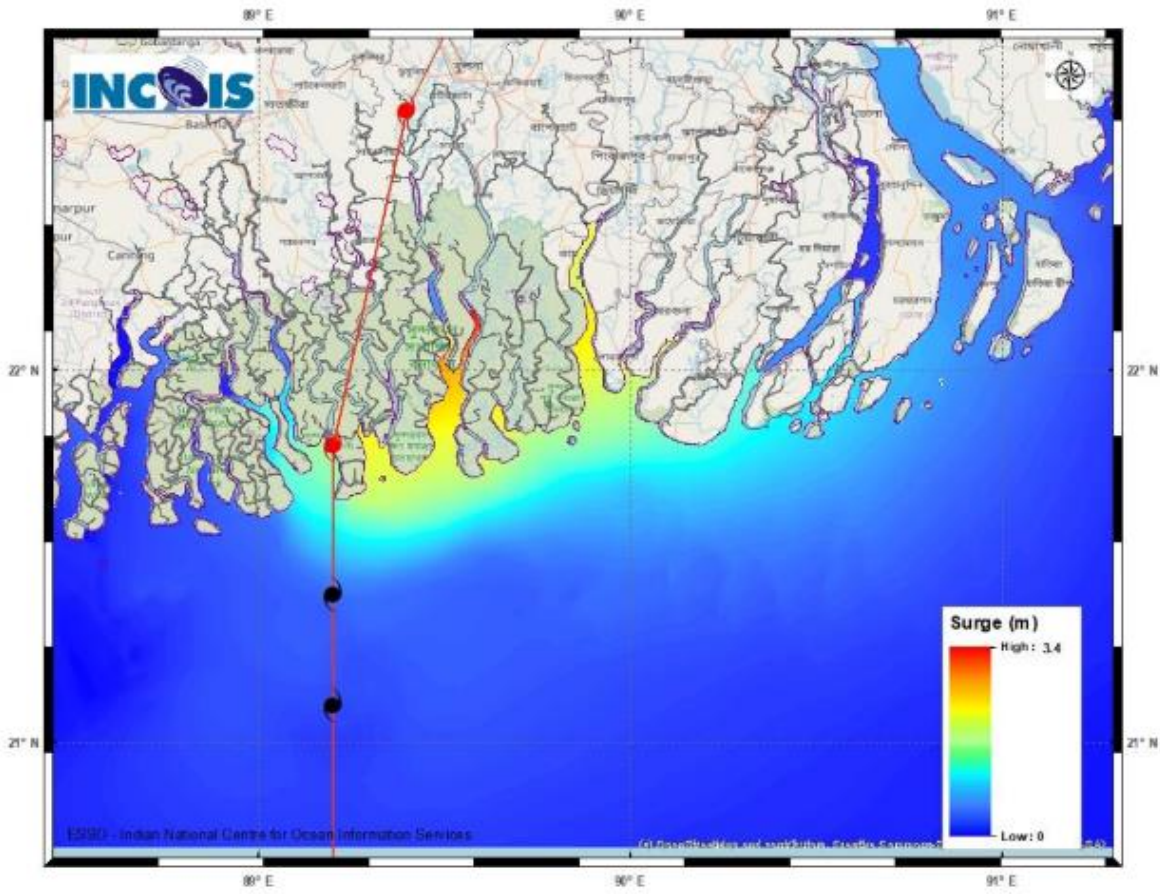
Fishermen Warning Graphics



	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
	Squally wind with speed 50-60 kmph gusting to 70 kmph
	CS with Gale wind speed 60-90 kmph gusting to 110 kmph
	SCS with Gale wind speed 90-120 kmph gusting to 135 kmph

Fishermen are advised not to venture into the marked areas.

Storm Surge Warning Graphics

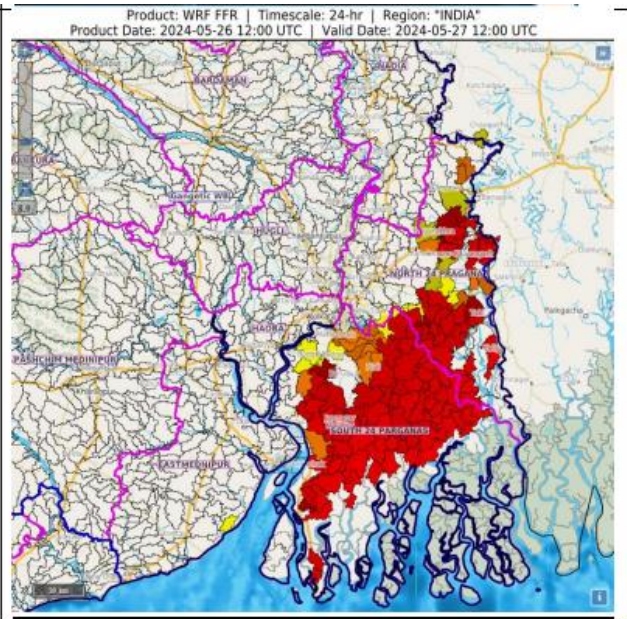


Flash Flood Guidance for West Bengal

24 hours Outlook for the Flash Flood Risk (FFR) till 1730 IST of 27-05-2024 :

Moderate to High flash flood risk likely over few watersheds & neighbourhoods of **extreme southern parts of Gangetic West Bengal** Met Sub-divisions during next 24 hours.

Surface runoff may occur on low lying areas due to persistent rainfall under the influence of impending Severe Cyclonic Storm "Remal" in next 24 hours.

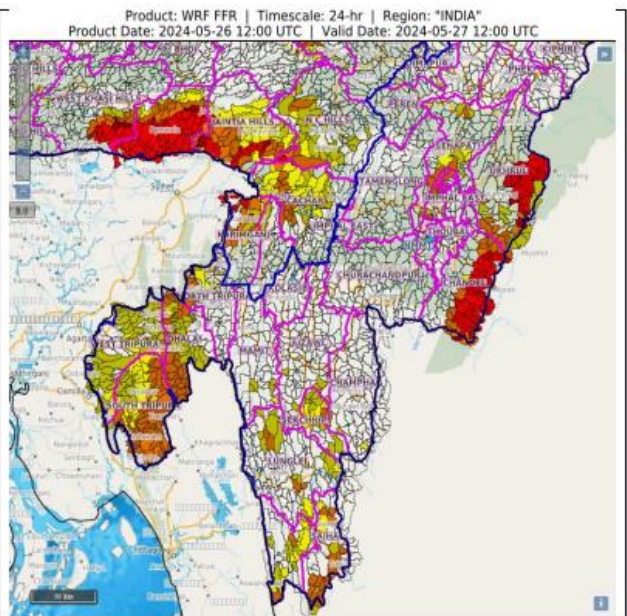


Flash Flood Guidance for Northeastern States

24 hours Outlook for the Flash Flood Risk (FFR) till 1730 IST of 27-05-2024 :

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of **Southern parts of Assam & Meghalaya and NMMT** Met Sub-divisions during next 24 hours.

Surface runoff may occur on low lying areas due to persistent rainfall under the influence of impending Severe Cyclonic Storm "Remal" in next 24 hours.



Flash Flood Threat	Flash Flood Risk
High Threat (Take Action)	High Risk (Take Action)
Moderate threat (Be Prepared)	Moderate Risk (Be Prepared)
Low Threat (Be Updated)	Low Risk (Be Updated)

Wind & Flood Hazard Maps of West Bengal

