REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL WEATHER OUTLOOK

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 24.11.2024

TROPICAL WEATHER OUTLOOK FOR THE NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR THE NEXT 168 HOURS ISSUED AT 0730 UTC OF 24.11.2024 BASED ON 0300 UTC OF 24.11.2024.

Sub: Well Marked Low pressure area over Southeast Bay of Bengal and adjoining East Equatorial Indian Ocean

Yesterday's low pressure area over East Equatorial Indian Ocean (EIO) and adjoining Southeast Bay of Bengal moved west-northwestwards, became well marked and lay centred at 0830 hours IST of today, the 24th November 2024 over southeast Bay of Bengal and adjoining EIO.

It is likely to continue to move west-northwestwards and intensify into a depression over central parts of south Bay of Bengal on 25th November. Thereafter, it is likely to move northwestwards towards Tamil Nadu-Sri Lanka coasts during subsequent 2 days.

As per the analysis of various observations, the system is centred near 5.0/87.0. However, there is poor confidence in determination of centre. Estimated Central Pressure in association with the system is 1005 hPa and associated maximum sustained wind speed is 10-15 kts gusting to 20 kts. Sea condition is likely to be moderate to rough over southeast BoB & adjoining east EIO.

As per latest satellite imagery, intensity of the system is characterized as T1.0. Associated scattered to broken low and medium clouds with embedded intense to very intense convection lay over south Bay of Bengal and adjoining EIO between latitude 4.0N to 12.0N and longitude 84.0E to 92.0E. Minimum cloud top temperature is minus 80-93°C. The multi-satellite based winds indicate stronger winds in the northeast sector.

A ship near 5.6N/89.5E reported Mean Sea Level Pressure of 1006.4 hPa and maximum sustained wind speed of 18KT/80°. Another ship near 5.7N/92.4E reported Mean Sea Level Pressure of 1005.3 hPa and maximum sustained wind speed of 10KT/110°.

Forecast track and intensity are given in the following table:

Date/Time (UTC)	Position (Lat. °N/ Long. °E)	Maximum Sustained Surface Wind Speed (Kmph)	Category Of Cyclonic Disturbance
24.11.24/0300	5.0/87.0	35-45 gusting to 55	Well Marked Low Pressure Area
24.11.24/1200	5.1/86.3	40-50 gusting 60	Well Marked Low Pressure Area
25.11.24/0000	5.3/85.7	45-55 gusting to 65	Depression
25.11.24/1200	6.0/84.6	45-55 gusting to 65	Depression
26.11.24/0000	7.1/83.6	50-60 gusting 70	Deep Depression
26.11.24/1200	8.4/82.7	55-65 gusting to 75	Deep Depression
27.11.24/0000	9.6/81.8	55-65 gusting to 75	Deep Depression

Environmental features:

Sea surface temperature is more than 29-30°C over south Bay of Bengal (BoB). Tropical cyclone heat potential is more than 100 KJ/cm^2 over south BoB & adjoining EIO. It is

less 40-60 KJ/cm^2 over southwest & adjoining eastcentral BoB and along & off Sri Lanka/Tamil Nadu/ Andhra Pradesh coasts. Total precipitable water imagery indicate warm moist air incursion into the core. Madden Julian Oscillation (MJO) is in phase 3 with amplitude more than 1 and would move across phases 3 & 4 during next 7 days with amplitude remaining more than 1. CFS-NCICS model forecast indicates presence of Equatorial Rossby Waves over South Andaman Sea and south BoB during 24th-30th. Strong westerly wind anomaly over south BoB and easterly wind anomaly to its north over South & adjoining central BoB is indicated during 24th - 30th November. During this period other waves including MJO, low frequency background waves, ERW are also likely over south BoB.

Low level winds indicate broad scale circulation with Low level positive cyclonic vorticity at 850 hpa level is around 80-90x10^{-5} s^{-1} over southeast BoB & adjoining East Equatorial Indian Ocean. The zone of the maximum vorticity has become more organized. The low level convergence around the system is around 10 x10^{-5} s^{-1} over southeast BoB and adjoining East EIO. Upper level divergence is around 20x10^{-5} s^{-1} over south Andaman Sea & adjoining East EIO and also indicate establishment of an equatorward outflow. The vertical wind shear is low to moderate (10-15 knots) over south BoB & adjoining EIO. Shear tendency is decreasing over Andaman Sea & adjoining BoB. Upper tropospheric ridge is near 10°N. The environmental features are likely to contribute positively to cyclogenesis over south BoB.

Discussion of major models:

ECMWF: is indicating low pressure area (LPA) over east EIO & adjoining southeast BoB on 24th with nearly westwards movement till 26/0000 UTC. Thereafter, it is likely to move north-northwestwards with marginal intensification becoming depression (D) over westcentral BoB on 28/0000 UTC. Thereafter, it is indicating weakening trend and also crossing over Andhra Pradesh coast on 30/1800 UTC.

IMD GEFS: is indicating well marked low pressure area (WML) over east EIO & adjoining southeast BoB on 24th with nearly west-northwestwards movement and intensification into depression(D)/deep depression (DD) over southwest BoB & adjoining east EIO on 24/1200 and cyclonic storm (CS) on 26/0000 over southwest BoB close to Sri Lanka coast. Thereafter, the model is indicating northeastwards recurvature towards Myanmar-Sri Lanka coasts.

NCEP GFS: Similar to IMD GFS, NCEP is also indicating initial west-northwestwards movement till 27/1200 UTC and northeastwards recurvature thereafter towards Myanmar-Sri Lanka coasts.

NCUM: is indicating a low pressure area over southwest BoB on 24/0000 UTC. It is indicating depression over southwest BoB on 26/0000 UTC and crossing over Tamil Nadu coast near Puducherry around 28/1800 UTC.

Thus, there is large variation among various models with respect to track and intensification. Some of the models are indicating steering of system in northeastwards direction under the influence of trough in westerlies from 28th November onwards.

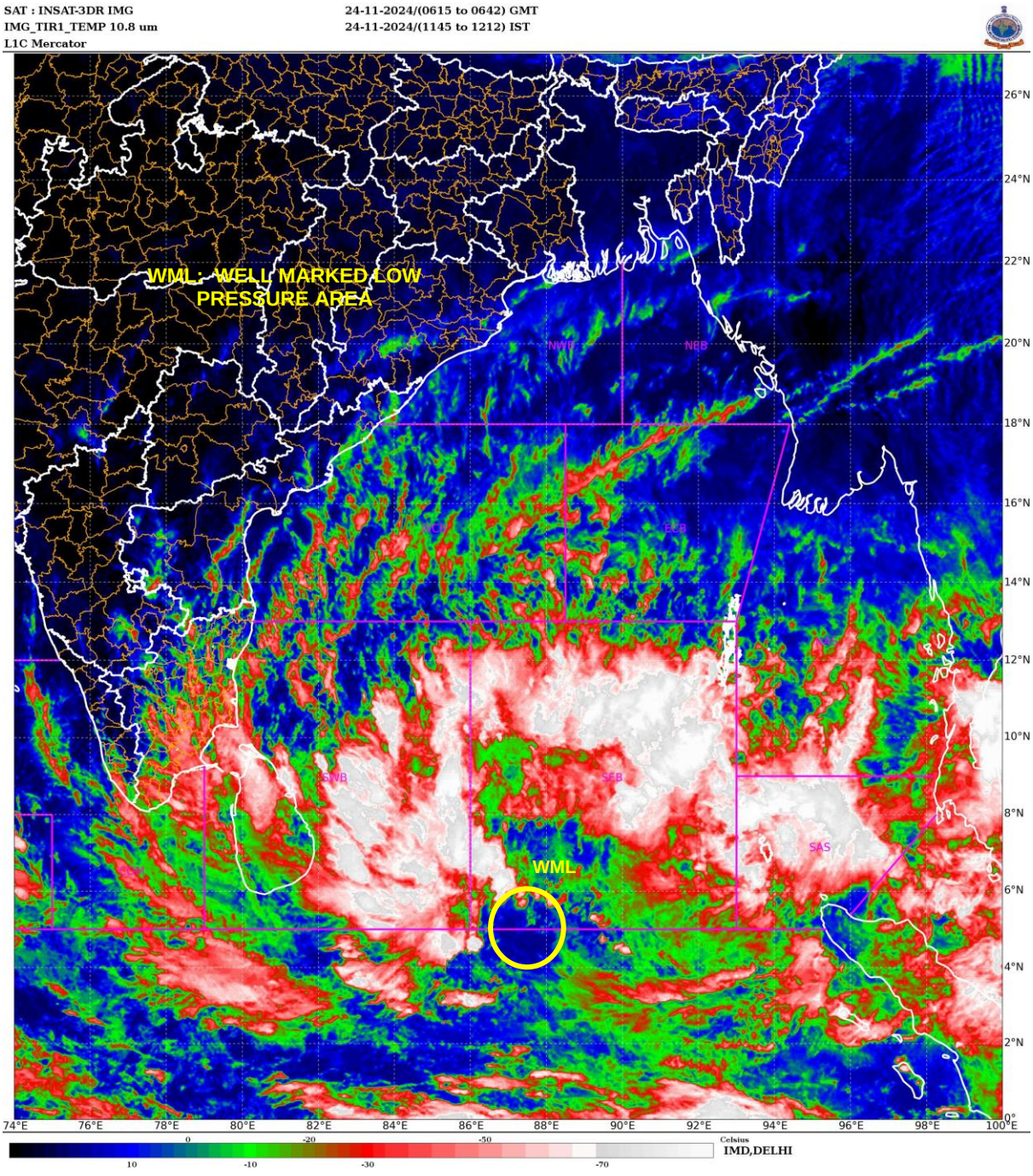
Hence it is inferred that the well marked low pressure area over Southeast Bay of Bengal and adjoining East EIO is likely to move west-northwestwards and intensify into a depression over central parts of south Bay of Bengal on 25th November. Thereafter, it is likely to move northwestwards towards Tamil Nadu-Sri Lanka coasts during subsequent 2 days.

Intense Observation Phase may be declared for East coast of Sri Lanka during 25th-27th, Tamil Nadu coast during 24th-28th November.

A continuous watch is being maintained for further intensification and movement of system towards Tamil Nadu - Sri Lanka coasts.

Next bulletin will be issued at 0600 UTC of tomorrow, the 25th November, 2024.

(Dr. D. R. Pattanaik)
Scientist F, Cyclone Warning, New Delhi



Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION):NIL: 0%, LOW: 1-33%, , MODERATE: 34-66% AND HIGH: 67-100%
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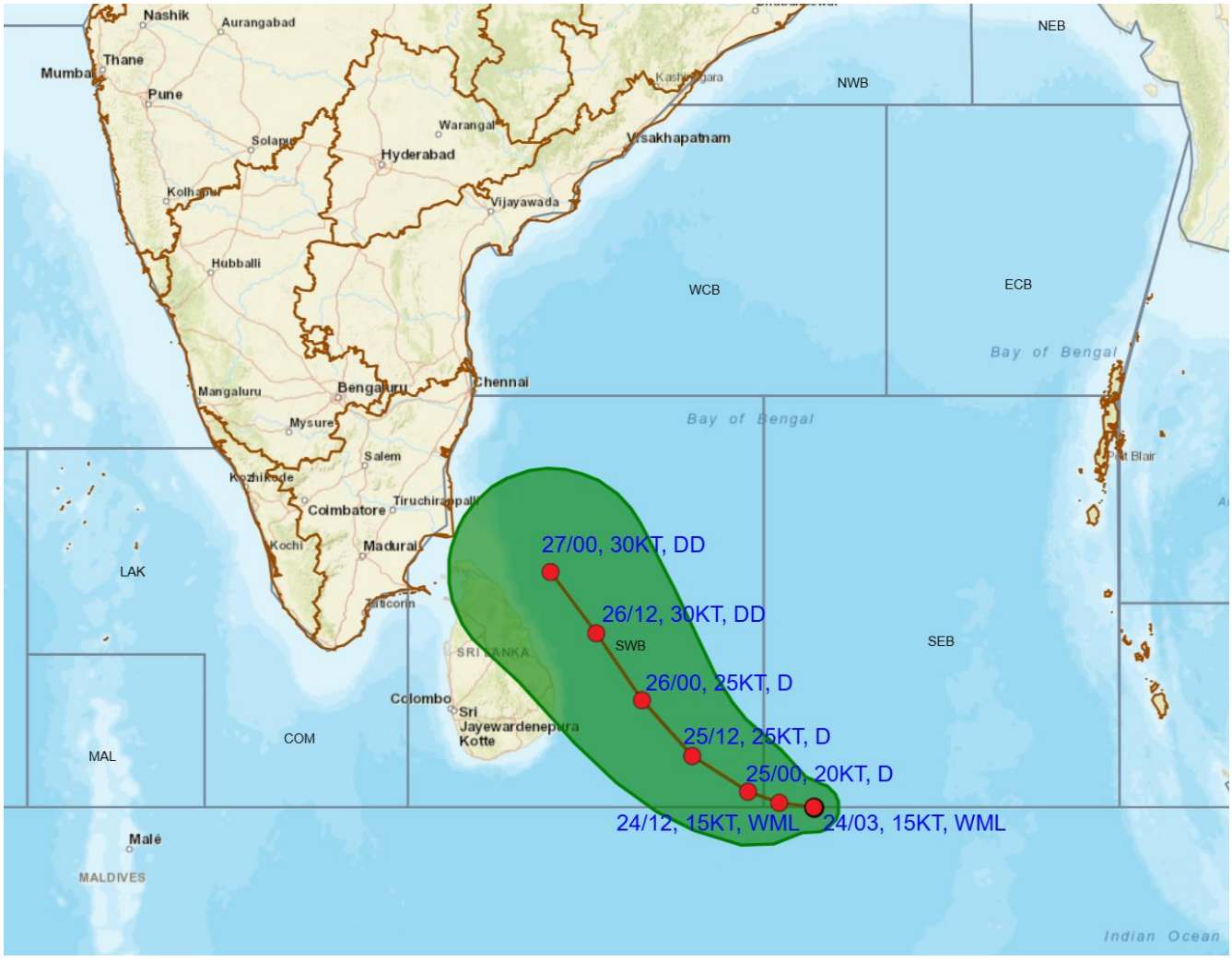
OBSERVED AND PRE-GENESIS FORECAST TRACK ALONG WITH CONE OF UNCERTITY OF WELL MARKED LOW PRESSURE AREA OVER SOUTHEAST BAY OF BENGAL ADJOINING EAST EQUATORIAL INDIAN OCEAN BASED ON 0300 UTC (0830 Hrs. IST) OF 24th NOVEMBER, 2024



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

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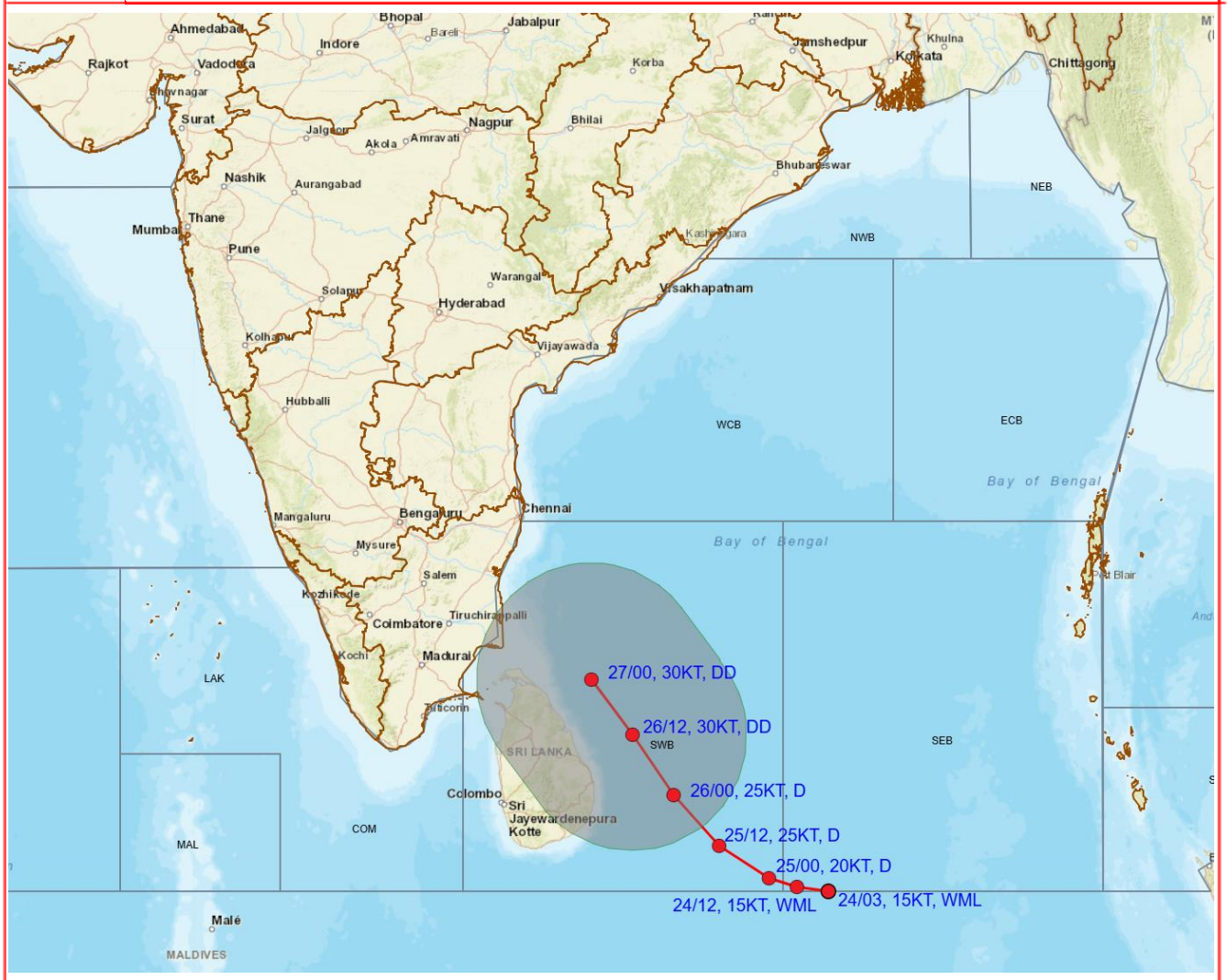

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LESS THAN 34 KT
34-47 KT
≥ 48 KT
OBSERVED TRACK
FORECAST TRACK
CONE OF UNCERTAINTY
AREA OF MAXIMUM SUSTAINED WIND SPEED:
20-30 KT (35-55 KMPH)

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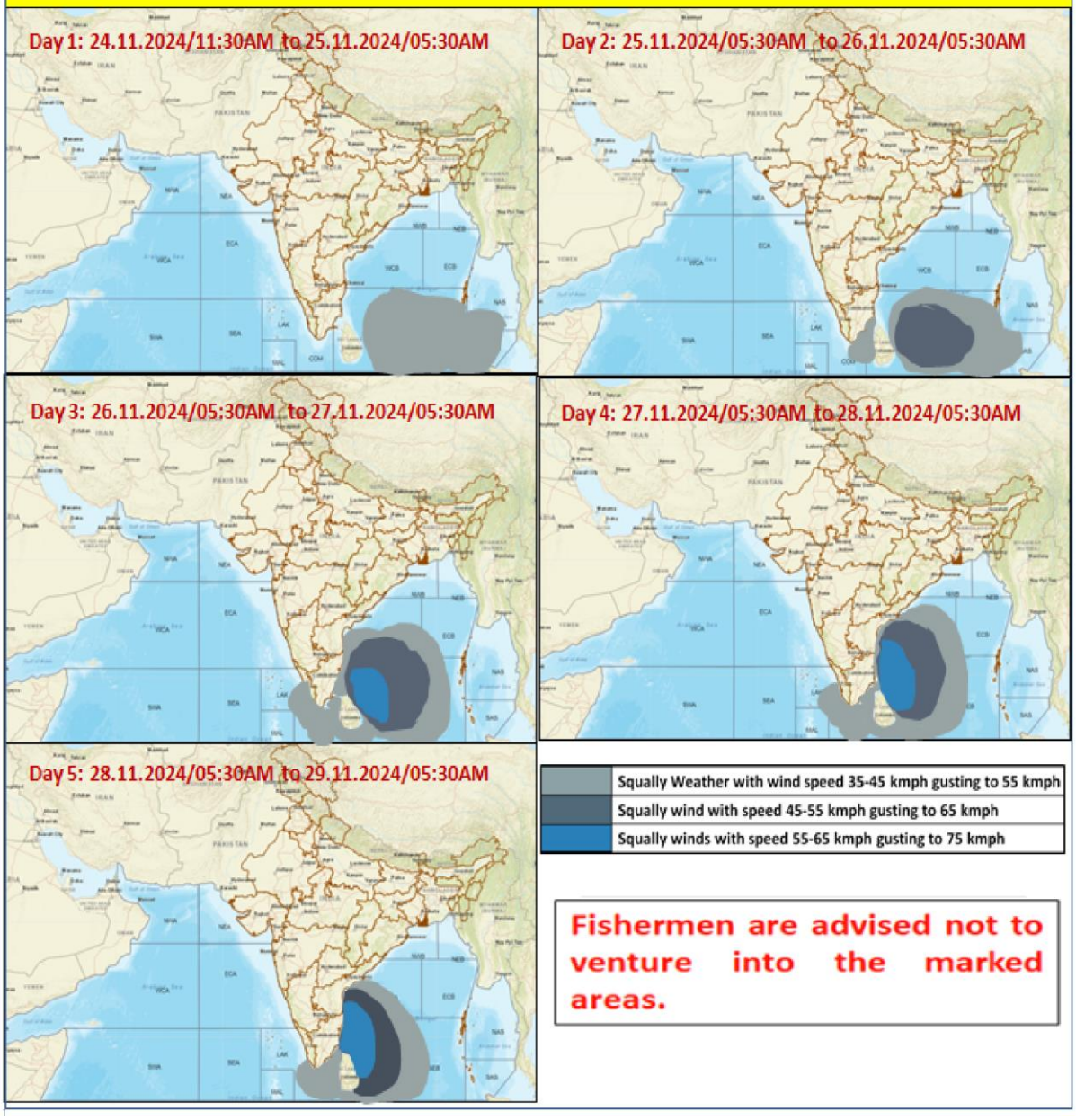
Fishermen Warning Graphics



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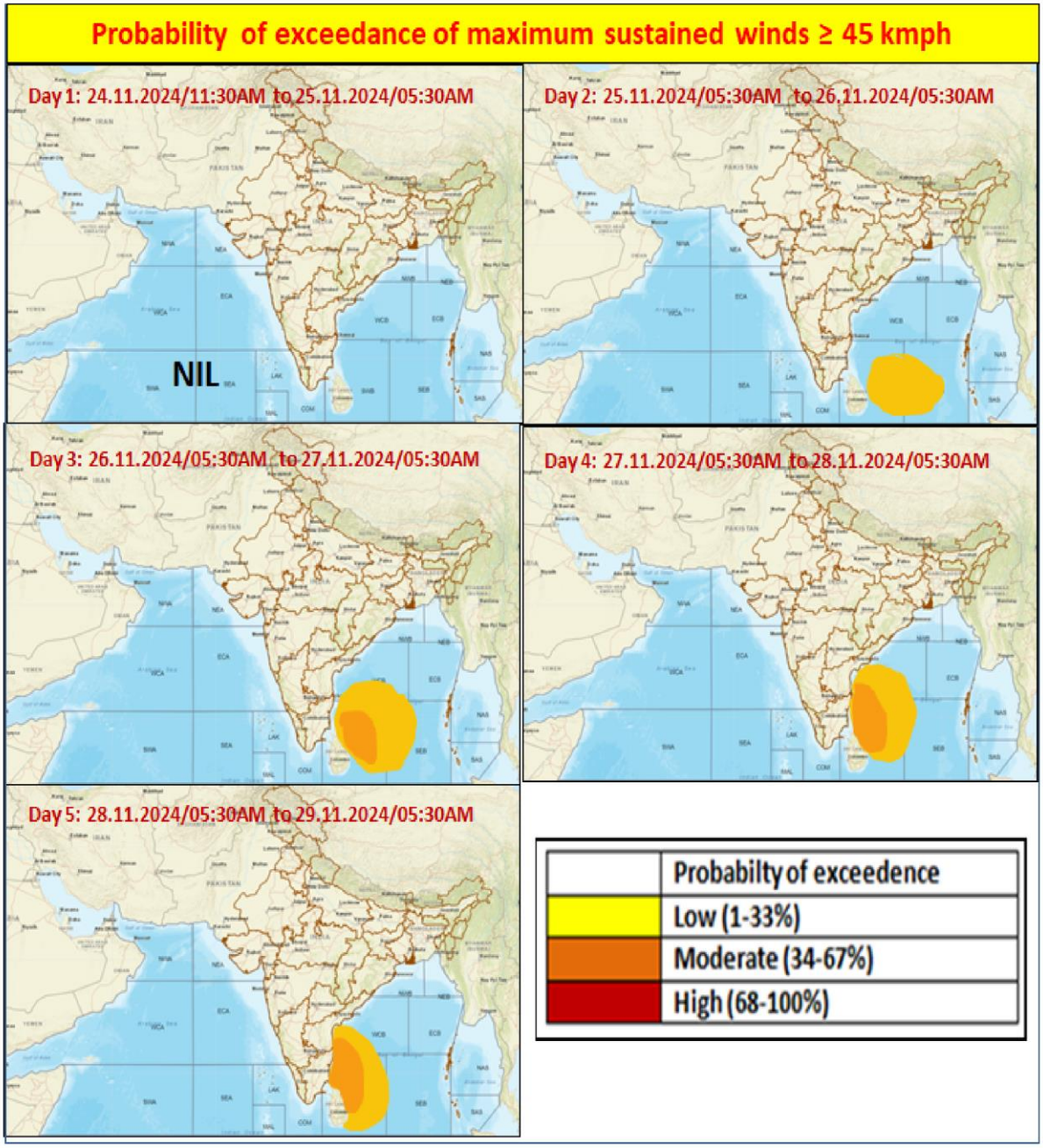

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