



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY NO. 03**

DEMS-RSMCSPECIAL TROPICAL CYCLONES NEW DELHI DATED 29.11.2024

**FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT,
MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES,
REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
NATIONAL CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT,
SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO. 03 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1730 UTC OF 29.11.2024 BASED ON 1500 UTC OF 29.11.2024

SUB: CYCLONIC STORM “FENGAL” [PRONOUNCED AS FEINJAL] OVER SOUTHWEST BAY OF BENGAL

THE CYCLONIC STORM “FENGAL” [PRONOUNCED AS FEINJAL] OVER SOUTHWEST BAY OF BENGAL MOVED NORTHWESTWARDS WITH A SPEED OF 12 KMPH DURING PAST 6 HOURS AND LAY CENTRED AT 1500 UTC OF TODAY, THE 29TH NOVEMBER 2024 OVER THE SAME REGION NEAR LATITUDE 11.6°N AND LONGITUDE 81.7°E, ABOUT 340 KM NORTH OF TRINCOMALEE (43418), 220 KM EAST-NORTHEAST OF NAGAPPATTINAM (43347), 210 KM EAST OF PUDUCHERRY (43331) AND 230 KM SOUTHEAST OF CHENNAI (43279).

IT IS LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS NORTH TAMIL NADU-PUDUCHERRY COASTS BETWEEN KARAİKAL AND MAHABALIPURAM CLOSE TO PUDUCHERRY AS A CYCLONIC STORM WITH A WIND SPEED OF 70-80 KMPH GUSTING TO 90 KMPH DURING 0600-0900 UTC OF 30TH NOVEMBER.

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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THE SYSTEM IS BEING CONTINUOUSLY MONITORED.

ESTIMATED CENTRAL PRESSURE IN ASSOCIATION WITH THE SYSTEM IS 998 HPA AND ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 35 KTS GUSTING TO 45 KTS. VERY ROUGH TO HIGH SEA CONDITIONS IS VERY LIKELY OVER SOUTHWEST BAY OF BENGAL ADJOINING AREAS OF WESTCENTRAL BAY OF BENGAL, GULF OF MANNAR AND ALONG & OFF TAMIL NADU-PUDUCHERRY, SOUTH ANDHRA PRADESH AND EAST SRI LANKA COASTS TILL 1200 UTC OF 30TH NOVEMBER. IT WILL GRADUALLY IMPROVE BECOMING VERY ROUGH TO ROUGH TILL 1800 UTC OF 30TH NOVEMBER.

AS PER LATEST SATELLITE IMAGERY, INTENSITY OF THE SYSTEM IS CHARACTERIZED AS T2.5. CLOUDS ARE ORGANISED IN CURVED BAND PATTERN. AREA OF INTENSE CONVECTION IS SEEN TO THE NORTH OF SYSTEM AREA. ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTH & ADJOINING CENTRAL BAY OF BENGAL AND NEIGHBORHOOD BETWEEN LATITUDE 7.0N TO 17.0N AND LONGITUDE 80.0E TO 90.0E WITH MINIMUM CLOUD TOP TEMPERATURE AS MINUS 80-93°C.

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 |
|---------------------|------------------------------------|---|--|
| 29.11.24/1500 | 11.6/81.7 | 60-70 gusting to 80 | CYCLONIC STORM |
| 29.11.24/1800 | 11.7/81.4 | 65-75 gusting to 85 | CYCLONIC STORM |
| 30.11.24/0000 | 11.8/80.9 | 70-80 gusting to 90 | CYCLONIC STORM |
| 30.11.24/0600 | 11.9/80.3 | 70-80 gusting to 90 | CYCLONIC STORM |
| 30.11.24/1200 | 12.0/79.5 | 55-65 gusting to 75 | DEEP DEPRESSION |
| 01.12.24/1200 | 12.1/78.0 | 45-55 gusting to 65 | DEPRESSION |

STORM SURGE WARNING:

STORM SURGE OF ABOUT 1 METRE HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY INUNDATE THE LOW LYING AREAS OF THE COASTAL DISTRICTS OF NORTH TAMIL NADU, PUDUCHERRY AND ADJOINING SOUTH ANDHRA PRADESH DURING THE TIME OF LANDFALL.

FISHERMAN WARNING:

- TOTAL SUSPENSION OF FISHING OPERATIONS.
- FISHERMEN ARE ADVISED NOT VENTURE INTO SOUTHWEST BAY OF BENGAL ADJOINING AREAS OF WESTCENTRAL BAY OF BENGAL, GULF OF MANNAR AND ALONG & OFF TAMIL NADU-PUDUCHERRY, SOUTH ANDHRA PRADESH AND EAST SRI LANKA COASTS TILL 30TH NOVEMEBR.
- FISHERMEN OUT AT SEA ARE ADVISED TO RETURN TO COAST.

REMARKS:

THE SYSTEM IS OVER AN AREA WITH SEA SURFACE TEMPERATURE (SST) ABOUT 29⁰C. THE SST IS LIKELY TO BE RELATIVELY LESS (28⁰C) ALONG & OFF THE TAMIL NADU COAST. THE TOTAL PRECIPITABLE WATER IMAGERY IS INDICATING WARM MOIST AIR AROUND SYSTEM AREA. THE TROPICAL CYCLONE HEAT POTENTIAL IS 40-50 KJ/CM² OVER SOUTHWEST & ADJOINING WESTCENTRAL BOB ALONG & OFF SRI LANKA/TAMIL NADU/ ANDHRA PRADESH COASTS

MADDEN JULIAN OSCILLATION (MJO) IS IN PHASE 4 WITH AMPLITUDE MORE THAN 1 AND WOULD MOVE ACROSS PHASE 5 FROM 29TH TO 30TH NOVEMBER ONWARDS. PRESENCE OF EQUATORIAL ROSSBY WAVES OVER SOUTH BOB, MJO, STRONG WESTERLY WIND ANOMALY OVER SOUTH BOB AND EASTERLY WIND ANOMALY TO ITS NORTH OVER SOUTH & ADJOINING CENTRAL BOB DURING 29TH - 30TH NOVEMBER INDICATE A FAVOURABLE ENVIRONMENT FOR GRADUAL INTENSIFICATION OF SYSTEM.

LOW LEVEL POSITIVE CYCLONIC VORTICITY AT 850 HPA LEVEL HAS INCREASED DURING PAST 6 HOURS AND IS AROUND 180-200X10⁻⁵ S⁻¹ OVER THE SYSTEM AREA WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL AND NO TILTING. THE LOW LEVEL CONVERGENCE IS AROUND 10 X10⁻⁵ S⁻¹ TO THE NORTH-NORTHEAST OF SYSTEM AREA AND 20 X10⁻⁵ S⁻¹ TO ITS SOUTHEAST. UPPER LEVEL DIVERGENCE IS AROUND 30X10⁻⁵ S⁻¹ TO THE NORTH-NORTHEAST OF SYSTEM CENTRE. VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KT) OVER THE SYSTEM AREA.

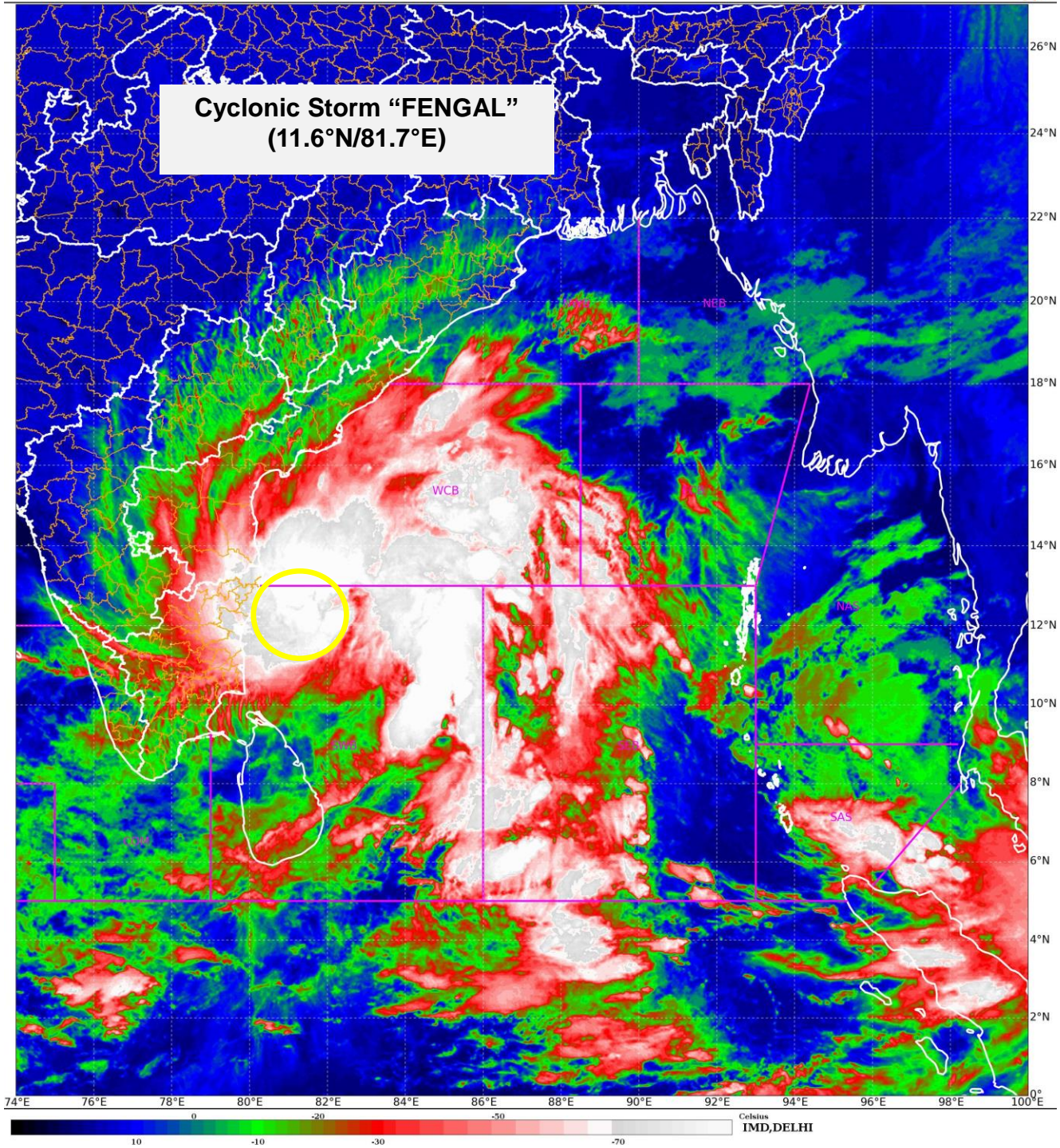
VARIOUS ENVIRONMENTAL FEATURES ARE INDICATING FAVOURABLE ENVIRONMENT (HIGH SST, LOW WIND SHEAR, CONVERGENCE, DIVERGENCE AND POSITIVE VORTICITY, MJO & EQUATORIAL WAVES) FOR GRADUAL INTENSIFICATION OF THE SYSTEM.

MOST OF THE MODELS TODAY ARE INDICATING THE SYSTEM TO CROSS TAMIL NADU COAST AS A CYCLONIC STORM DURING 0600-1200 UTC OF 30TH NOVEMBER.

HENCE, IT IS INFERRED THAT THE CYCLONIC STORM "FENGAL" OVER SOUTHWEST BAY OF BENGAL IS LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS NORTH TAMIL NADU-PUDUCHERRY COASTS BETWEEN KARAİKAL AND MAHABALIPURAM CLOSE TO PUDUCHERRY AS A CYCLONIC STORM WITH A WIND SPEED OF 70-80 KMPH GUSTING TO 90 KMPH DURING 0600-0900 UTC 30TH NOVEMBER.

NEXT BULLETIN WILL BE ISSUED AT 2100 UTC OF 29TH NOVEMBER, 2024.

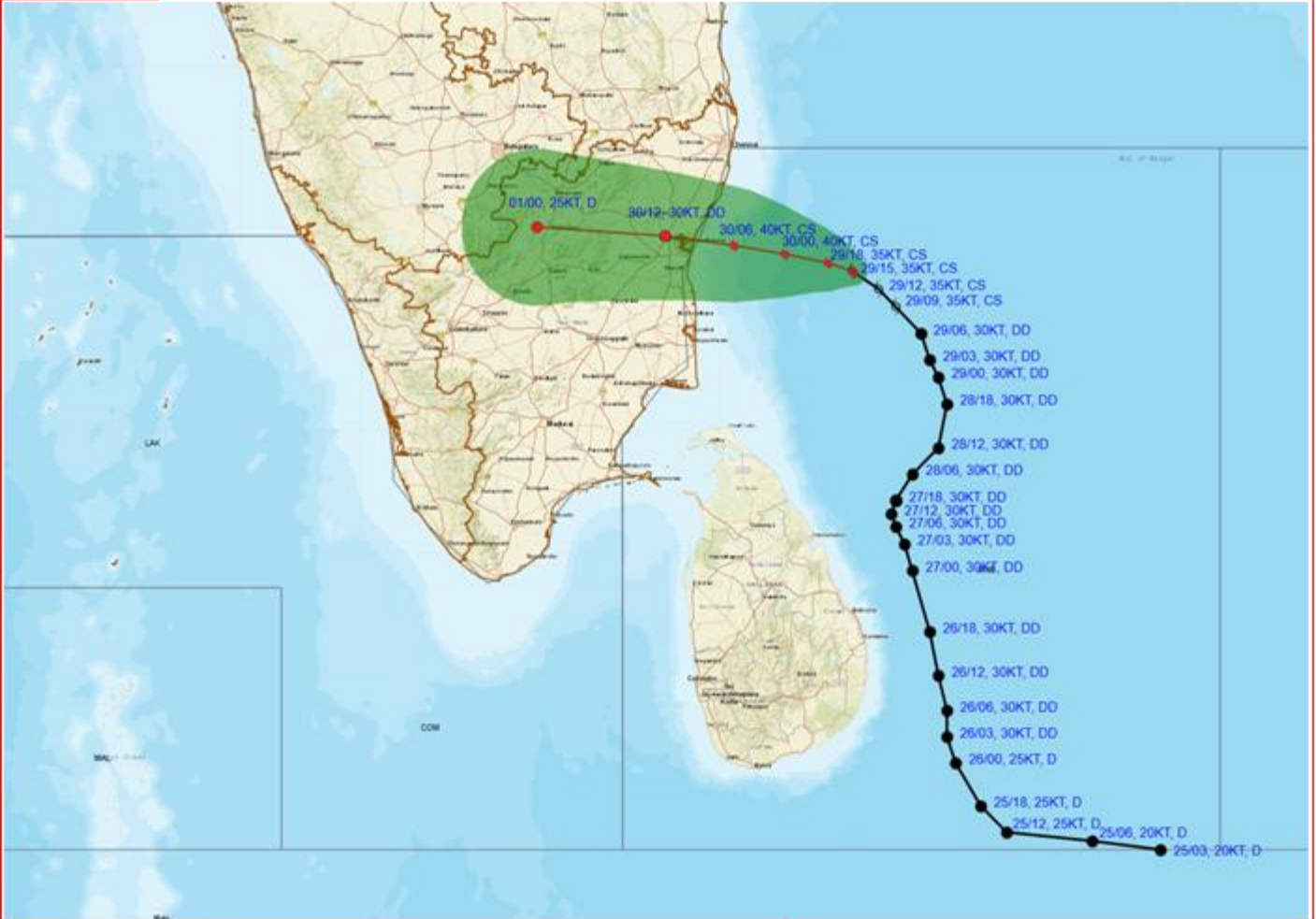
**(M. T. BUSHAIR)
SCIENTIST C, RSMC, NEW DELHI**



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OBSERVED AND FORECAST TRACK ALONG WITH CONE OF UNCERTAINTY OF CYCLONIC STORM "FENGAL" OVER SOUTHWEST BAY OF BENGAL BASED ON 1500 UTC (2030 HRS. IST) OF 29TH NOVEMBER, 2024



DATE/TIME : IN UTC
IST : UTC + 0530
KT : NAUTICAL MILE S/HOUR = 1.85 KM/HOUR
LPA : 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 (48-63 KT)
VSCS : VERY SEVERE CYCLONIC STORM (64-89 KT)
ESCS : EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)
SuCS : SUPER CYCLONIC STORM (≥120 KT)

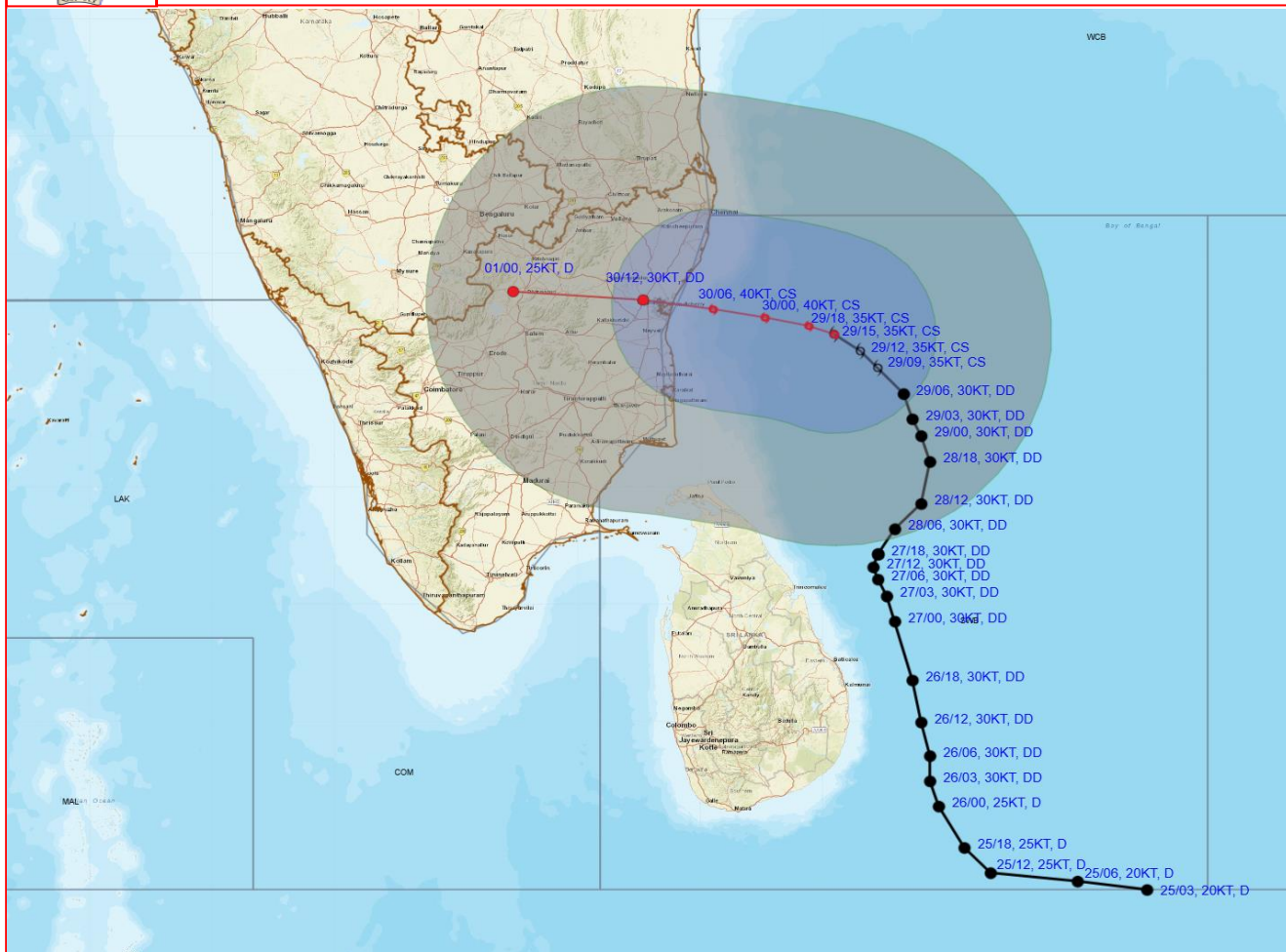
LESS THAN 34 KT
 34-47 KT
 ≥ 48 KT
 OBSERVED TRACK
 FORECAST TRACK
 CONE OF UNCERTAINTY

| Forecast | DISTANCE (KM) AND DIRECTION FROM STATIONS | | | | |
|---------------------|---|------------|---------------|------------|---------------------|
| Date and Time (UTC) | TRINCOMALEE | BATTICALOA | NAGAPPATTINAM | PUDUCHERRY | CHENNAI/MINAMBAKKAM |
| 29.11.24/1500 | 340, N | 430, N | 220, ENE | 210, E | 230, SE |
| 30.11.24/1200 | 430, NNW | 530, NNW | 140, NNW | 30, W | 130, SW |

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OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF CYCLONIC STORM "FENGAL" OVER SOUTHWEST BAY OF BENGAL BASED ON 1500 UTC (2030 HRS. IST) OF 29TH NOVEMBER, 2024.



DATE/TIME : IN UTC
IST : UTC + 0530
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D : DEPRESSION (17-27 KT)
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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 |

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Flash Flood Guidance

24 hours Outlook for the Flash Flood Risk (FFR) till 1730 IST of 30-11-2024 :

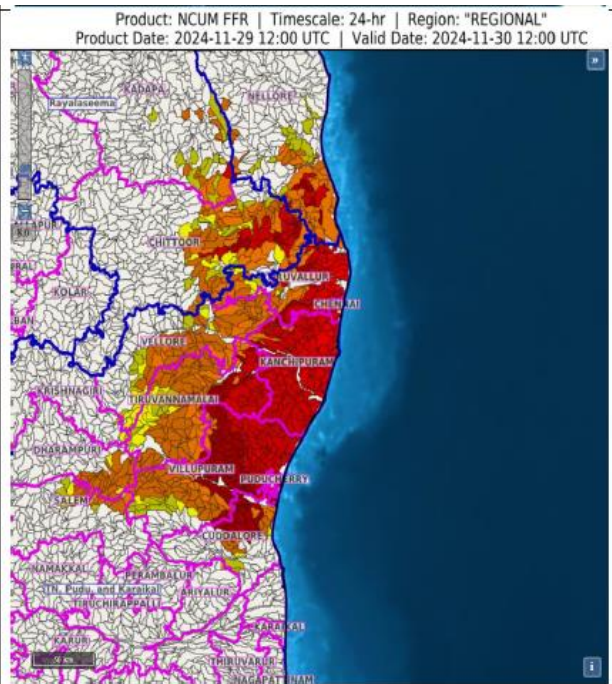
Moderate to High flash flood risk likely over few watersheds & neighbourhoods of following Met Sub-divisions during next 24 hours.

Coastal Andhra Pradesh & Yanam - Nellore district.

Rayalaseema - Chittoor and Kadapa districts.

Tamil Nadu - Puducherry & Karaikal - Puduchery, Chennai, Cuddalore, Dharampuri, Kanchipuram, Krishnagiri, Salem, Tiruvallur, Tiruvannamalai, Vellore and Villupuram districts.

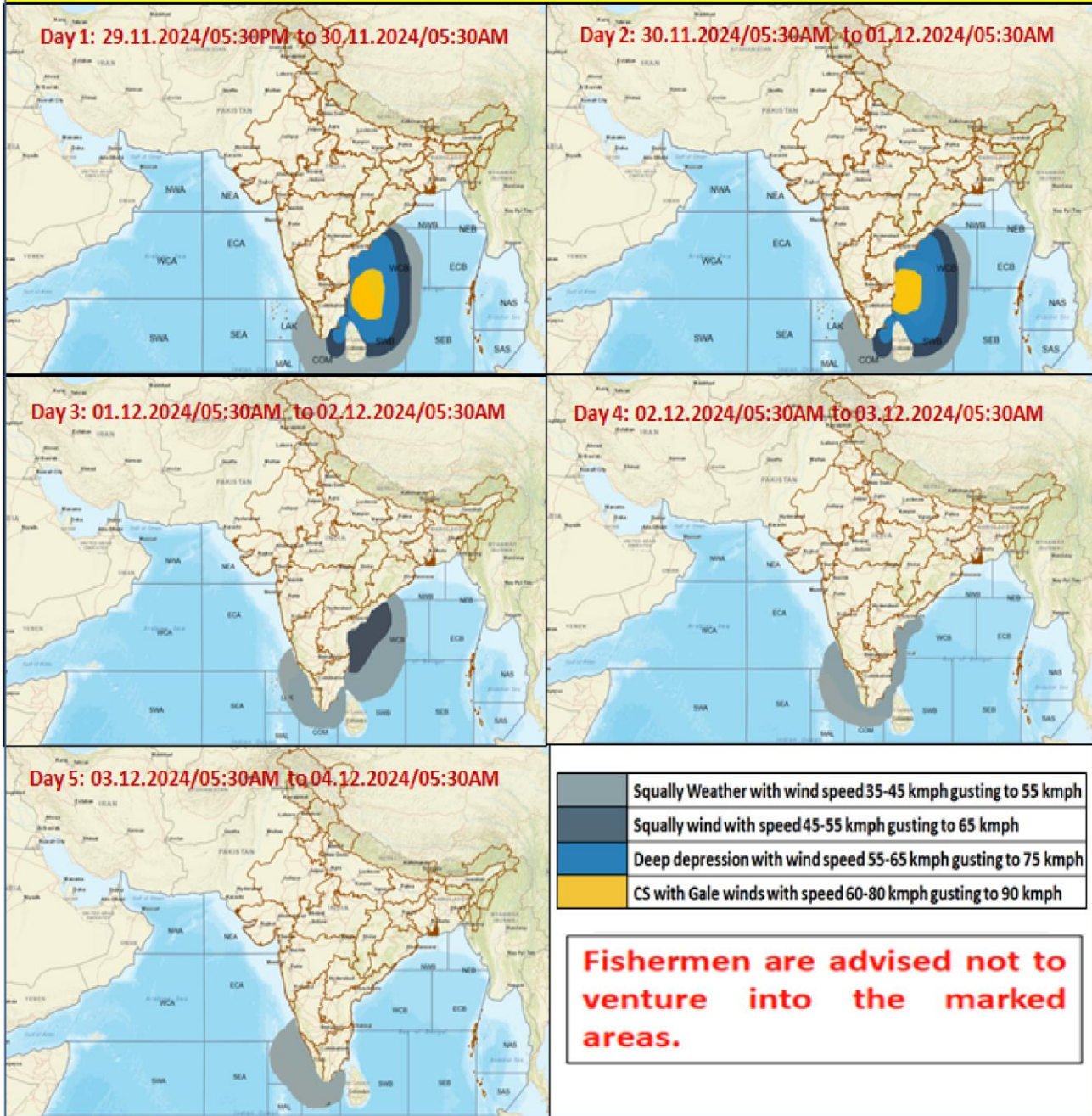
Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over Area of Concern (AoC) as shown in map due to expected rainfall occurrence in next 24 hours.



| Flash Flood Risk | |
|--|------------------------------------|
| | High Risk (Take Action) |
| | Moderate Risk (Be Prepared) |
| | Low Risk (Be Updated) |

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Fishermen Warning Graphics



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