



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY NO. 09**

DEMS-RSMCSPECIAL TROPICAL CYCLONES NEW DELHI DATED 30.11.2024

**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. 09 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1200 UTC OF 30.11.2024 BASED ON 0900 UTC OF 30.11.2024

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 WESTWARDS WITH A SPEED OF 7 KMPH DURING PAST 6 HOURS AND LAY CENTRED AT 0900 UTC OF TODAY, THE 30TH NOVEMBER 2024 OVER THE SAME REGION NEAR LATITUDE 12.3°N AND LONGITUDE 80.5°E, ABOUT 50 KM SOUTHEAST OF MAHABALIPURAM (TAMIL NADU), 80 KM EAST-NORTHEAST OF PUDUCHERRY (43331) AND 90 KM SOUTH-SOUTHEAST OF CHENNAI (43279).

IT IS LIKELY TO MOVE NEARLY WESTWARDS 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 AROUND 1500 UTC OF 30TH NOVEMBER. THERE IS A POSSIBILITY OF SLOW MOVEMENT OF THE SYSTEM WHILE APPROACHING THE COASTS.

THE SYSTEM IS BEING MONITORED BY THE DOPPLER WEATHER RADAR AT CHENNAI.

ESTIMATED CENTRAL PRESSURE IN ASSOCIATION WITH THE SYSTEM IS 992 HPA AND ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 40 KTS GUSTING TO 50 KTS. VERY ROUGH TO HIGH SEA CONDITIONS IS VERY LIKELY OVER SOUTHWEST

BAY OF BENGAL AND ADJOINING AREAS OF WESTCENTRAL BAY OF BENGAL, GULF OF MANNAR AND ALONG & OFF TAMIL NADU-PUDUCHERRY, SOUTH ANDHRA PRADESH AND NORTH SRI LANKA COASTS TILL 1500 UTC OF 30TH NOVEMBER. IT WILL GRADUALLY IMPROVE BECOMING VERY ROUGH TO ROUGH FROM 1800 UTC OF 30TH NOVEMBER.

AS PER LATEST SATELLITE IMAGERY, INTENSITY OF THE SYSTEM IS CHARACTERIZED AS T2.5/C.I. 3.0. AREA OF INTENSE CONVECTION IS SEEN TO THE NORTHWEST 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 8.0N TO 18.0N AND LONGITUDE 80.0E TO 90.0E WITH MINIMUM CLOUD TOP TEMPERATURE AS MINUS 80-93°C. MODERATE TO INTENSE CONVECTION LAY OVER COASTAL ANDHRA PRADESH, TELANGANA, KARNATAKA, CENTRAL TAMILNADU. SATELLITE IMAGERY INDICATES SLIGHT WEAKENING OF THE SYSTEM. MAXIMUM RADIAL VELOCITY REPORTED BY DWR CHENNAI IS 25 MPS AT A HEIGHT OF 1 KM WHICH IS APPROXIMATELY 40 KT (3-MINUTE AVERAGE WIND SPEED AT SURFACE LEVEL). GIVING WEIGHTAGE TO RADAR REPORTED WIND SPEED, INTENSITY HAS BEEN SLIGHTLY REDUCED AND FIXED AS 40 KT.

MAHABALIPURAM REPORTED MEAN SEA LEVEL PRESSURE OF 992.3 HPA AT 30/1000 UTC.

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
30.11.24/0900	12.3/80.5	70-80 gusting to 90	Cyclonic Storm
30.11.24/1200	12.2/80.1	70-80 gusting to 90	Cyclonic Storm
30.11.24/1800	12.1/79.8	55-65 gusting to 75	Deep Depression
01.12.24/0000	12.0/79.5	50-60 gusting to 70	Deep 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 27⁰C. THE TOTAL PRECIPITABLE WATER IMAGERY IS INDICATING WARM MOIST AIR AROUND SYSTEM AREA. HOWEVER, COLD DRY AIR INCURSION FROM

SOUTHWEST IS REACHING UPTO SOUTHEAST SECTOR. 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 5 WITH AMPLITUDE MORE THAN 1 AND WOULD MOVE ACROSS PHASE 5 DURING NEXT 5 DAYS. 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 30TH NOVEMBER TO 1ST DECEMBER, INDICATE A FAVOURABLE ENVIRONMENT FOR MAINTENANCE OF INTENSITY OF THE SYSTEM.

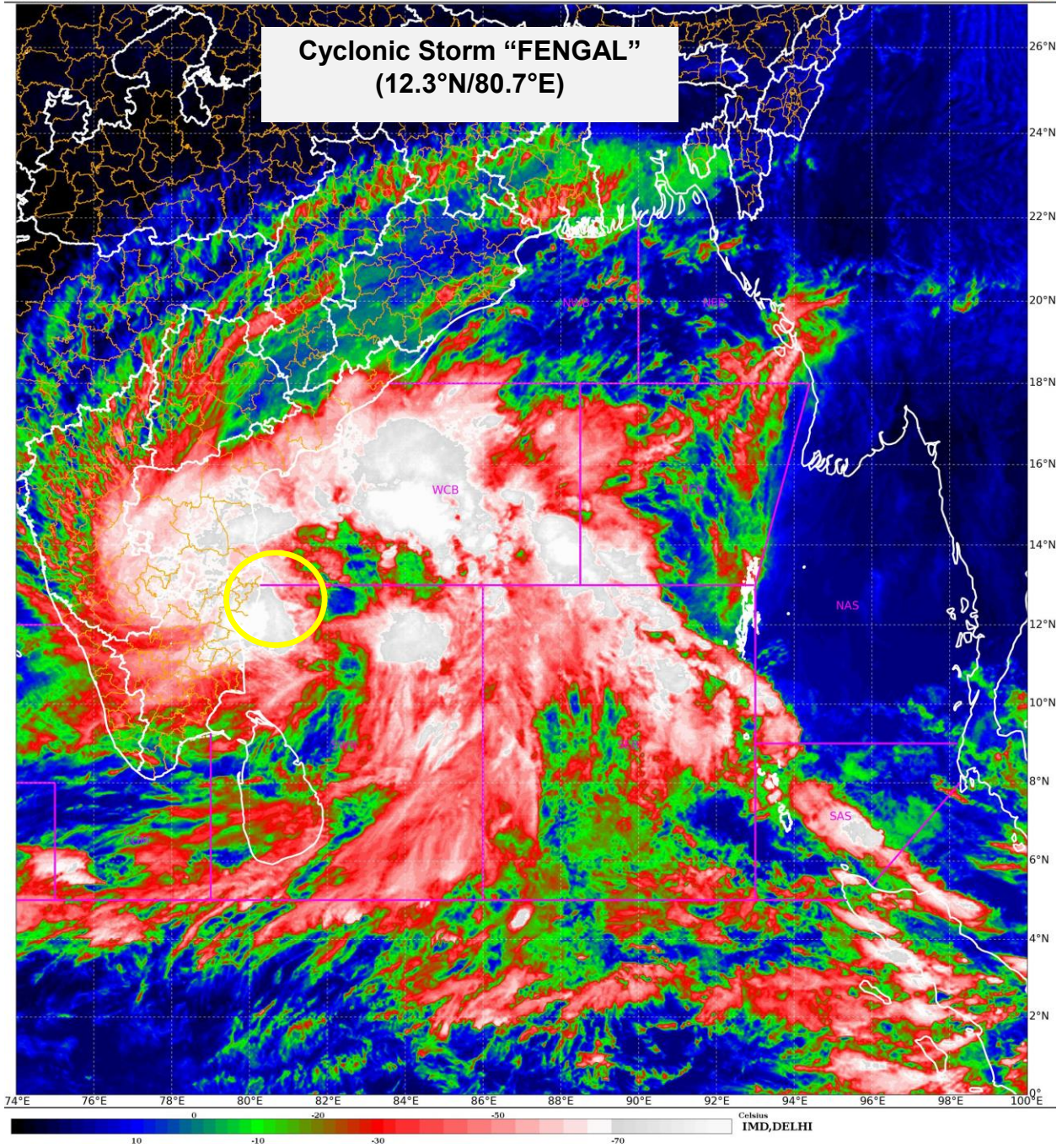
LOW LEVEL POSITIVE CYCLONIC VORTICITY AT 850 HPA LEVEL IS THE SAME DURING PAST 3 HOURS AND IS AROUND $200 \times 10^{-5} \text{ S}^{-1}$ OVER THE SYSTEM AREA WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL AND NO TILTING. THE LOW LEVEL CONVERGENCE HAS DECREASED AND IS AROUND $05-10 \times 10^{-5} \text{ S}^{-1}$ AROUND SYSTEM AREA. UPPER LEVEL DIVERGENCE IS AROUND $50 \times 10^{-5} \text{ S}^{-1}$ TO THE NORTHEAST OF SYSTEM AREA. IT IS ALSO INDICATING EQUATORWARD OUTFLOW. VERTICAL WIND SHEAR IS MODERATE (15-20 KT) OVER THE SYSTEM AREA. THE SYSTEM IS STEERED WEST-NORTHWESTWARDS UNDER THE INFLUENCE OF EAST-SOUTHEASTERLY WINDS PREVAILING IN THE WESTERN PERIPHERY OF ANTICYCLONIC CIRCULATION OVER EASTCENTRAL BAY OF BENGAL.

THERE IS CONVERGENCE AMONG VARIOUS MODELS WRT TRACK. HOWEVER, THERE IS LARGE VARIATION AMONG VARIOUS MODELS WRT INTENSITY. MOST OF THE MODELS ARE ALSO INDICATING THE SYSTEM TO MOVE VERY SLOW NEAR TO COAST. THERE IS AGAIN LARGE VARIATION WRT LANDFALL TIME BY VARIOUS MODELS.

HENCE, IT IS INFERRED THAT THE CYCLONIC STORM "FENGAL" OVER SOUTHWEST BAY OF BENGAL IS LIKELY TO MOVE NEARLY WESTWARDS 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 AROUND 1500 UTC OF 30TH NOVEMBER. THERE IS A POSSIBILITY OF SLOW MOVEMENT OF THE SYSTEM WHILE APPROACHING THE COASTS.

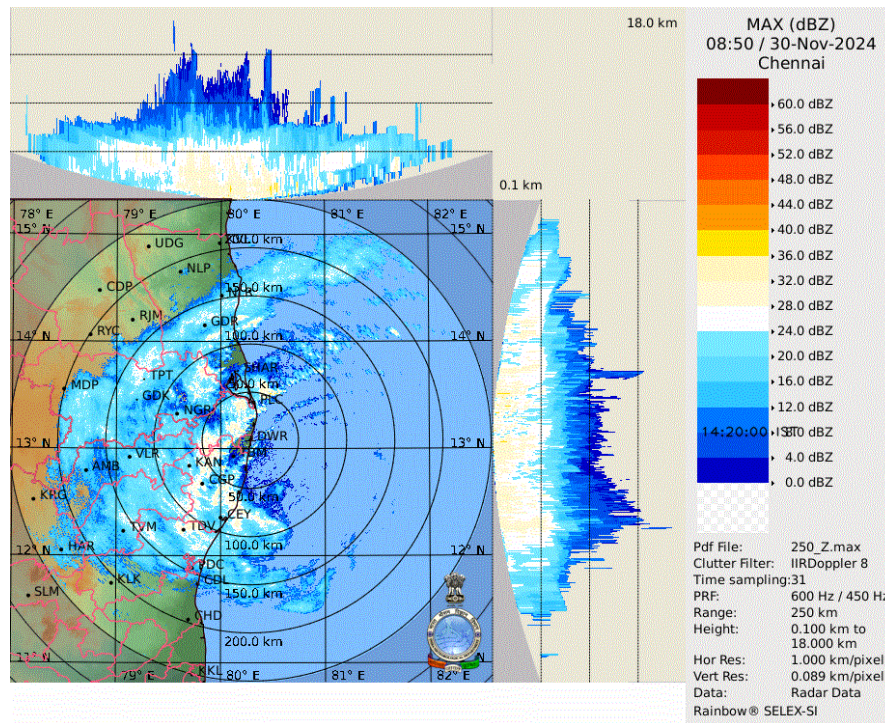
NEXT BULLETIN WILL BE ISSUED AT 1500 UTC OF 30TH NOVEMBER, 2024.

**(MONICA SHARMA)
SCIENTIST D, RSMC, 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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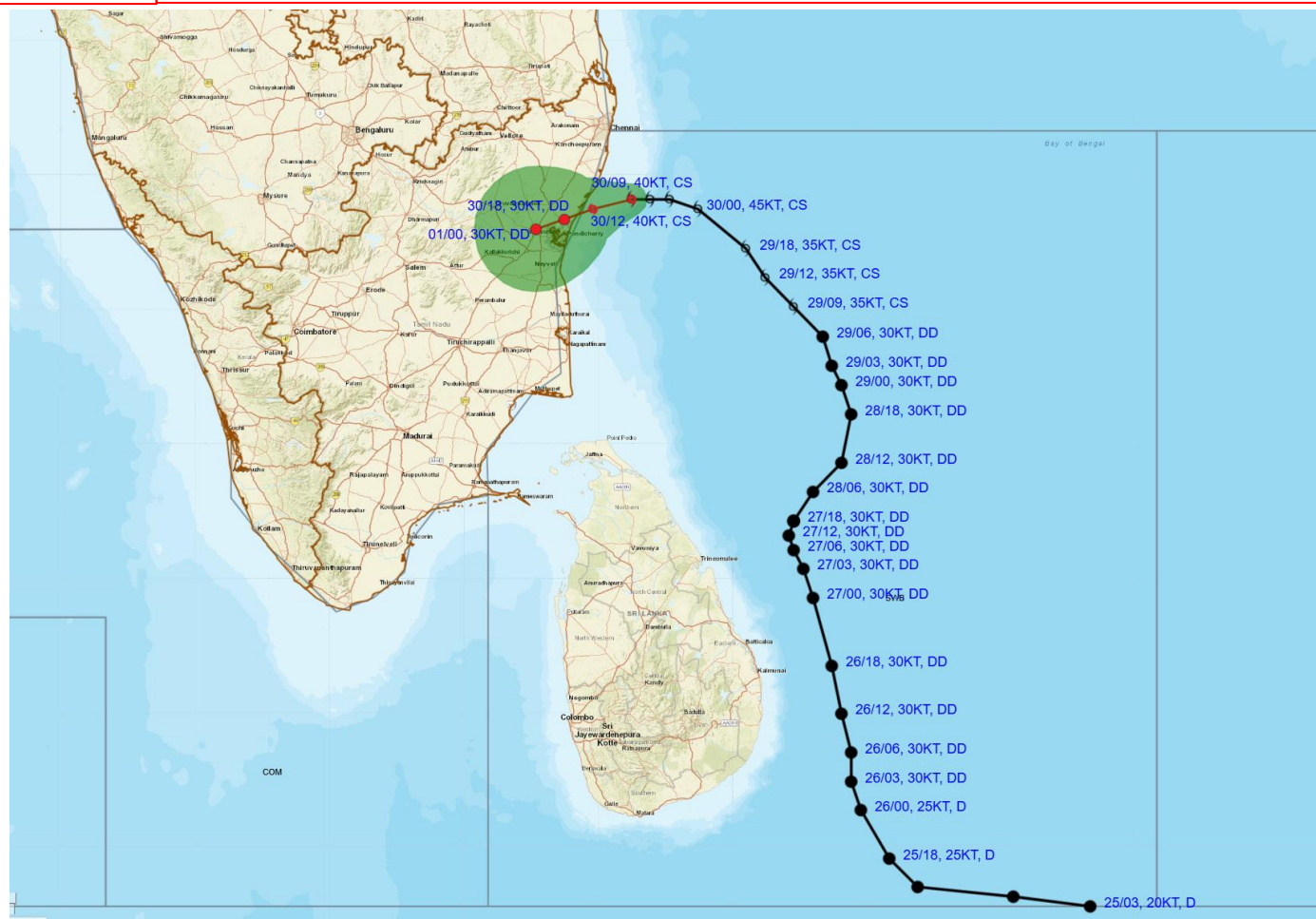
MAXIMUM REFLECTIVITY IMAGERY FROM DOPPLER WEATER RADAR, CHENNAI



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OBSERVED AND FORECAST TRACK ALONG WITH CONE OF UNCERTAINTY OF CYCLONIC STORM "FENGAL" OVER SOUTHWEST BAY OF BENGAL BASED ON 0900 UTC (1430 HRS. IST) OF 30TH 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)

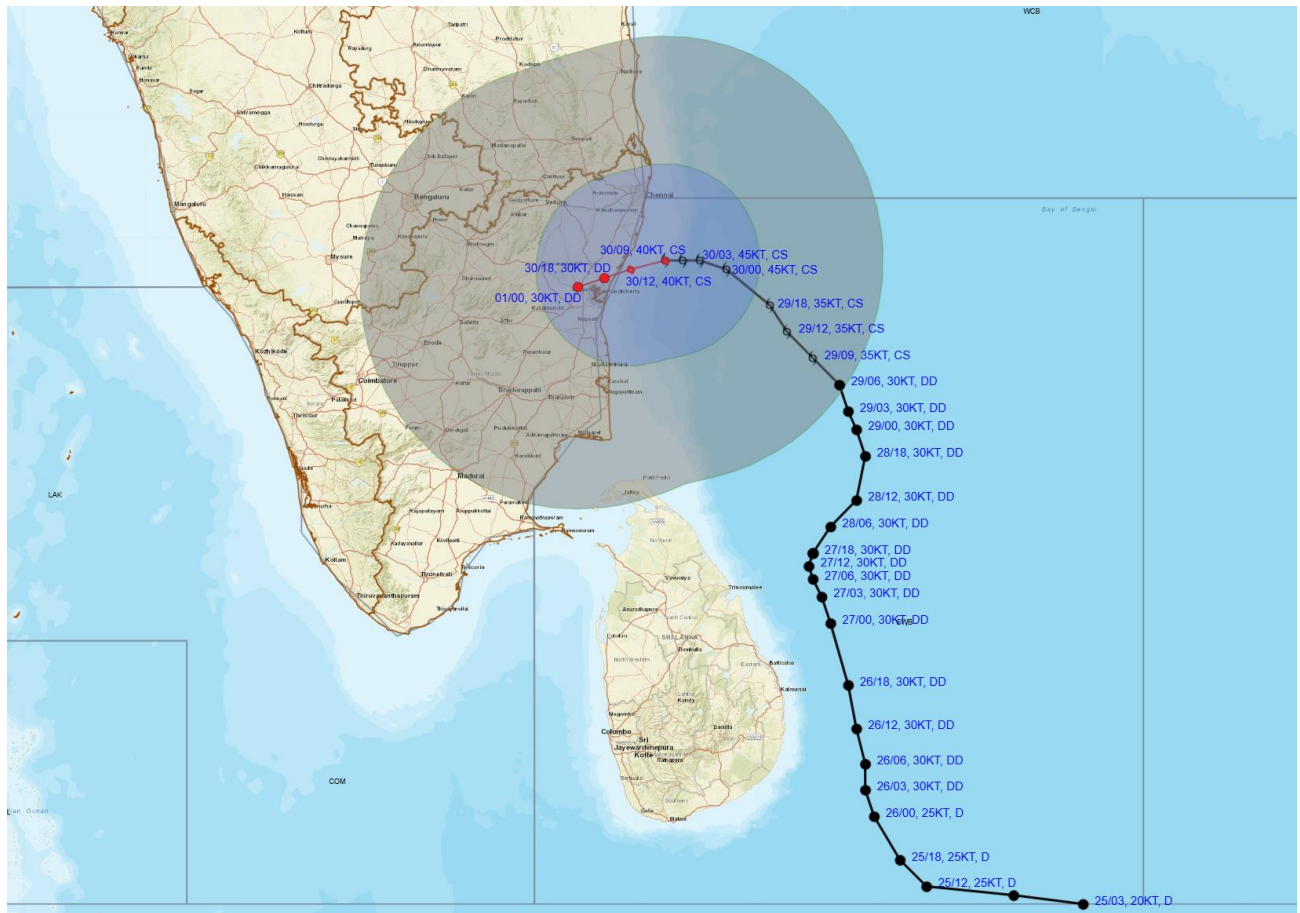
LESS THAN 34 KT
 34-47 KT
 ≥ 48 KT
 OBSERVED TRACK
 FORECAST TRACK
 CONE OF UNCERTAINTY

Forecast	DISTANCE (KM) AND DIRECTION FROM STATIONS		
	MAHABALIPURAM	CHENNAI/MINAMBAKKAM	MO PONDICHERRY
30.11.24/0900	50,SE	90, SSE	80, ENE
30.11.24/1200	50,SSW	90, S	40, NE
30.11.24/1800	70,SW	110, SSW	10, N
01.12.24/0000	100, SW	130, SW	30, W

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OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF CYCLONIC STORM "FENGAL" OVER SOUTHWEST BAY OF BENGAL BASED ON 0900 UTC (1430 HRS. IST) OF 30TH NOVEMBER, 2024.



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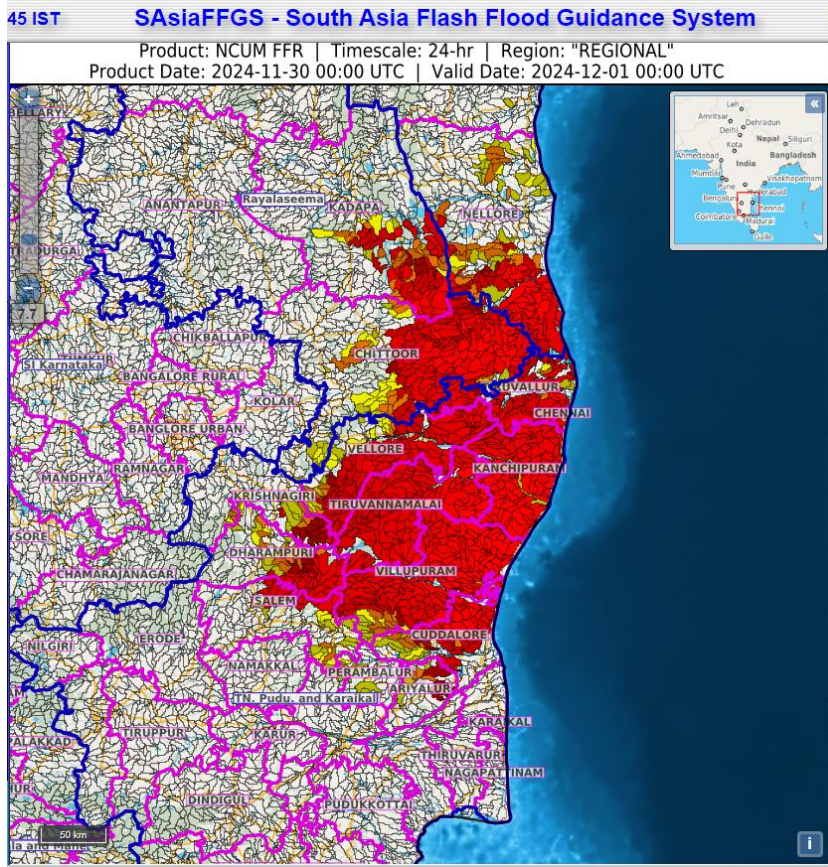
- LESS THAN 34 KT
- 34-47 KT
- ≥ 48 KT
- OBSERVED TRACK
- FORECAST TRACK
- CONE OF UNCERTAINTY
- AREA OF MAXIMUM SUSTAINED WIND SPEED:
- 28-33 KT (52-61 KMPH)
- 34-49 KT (62-91 KMPH)
- 50-63 KT (92-117 KMPH)
- ≥ 64 KT (≥118 KMPH)

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

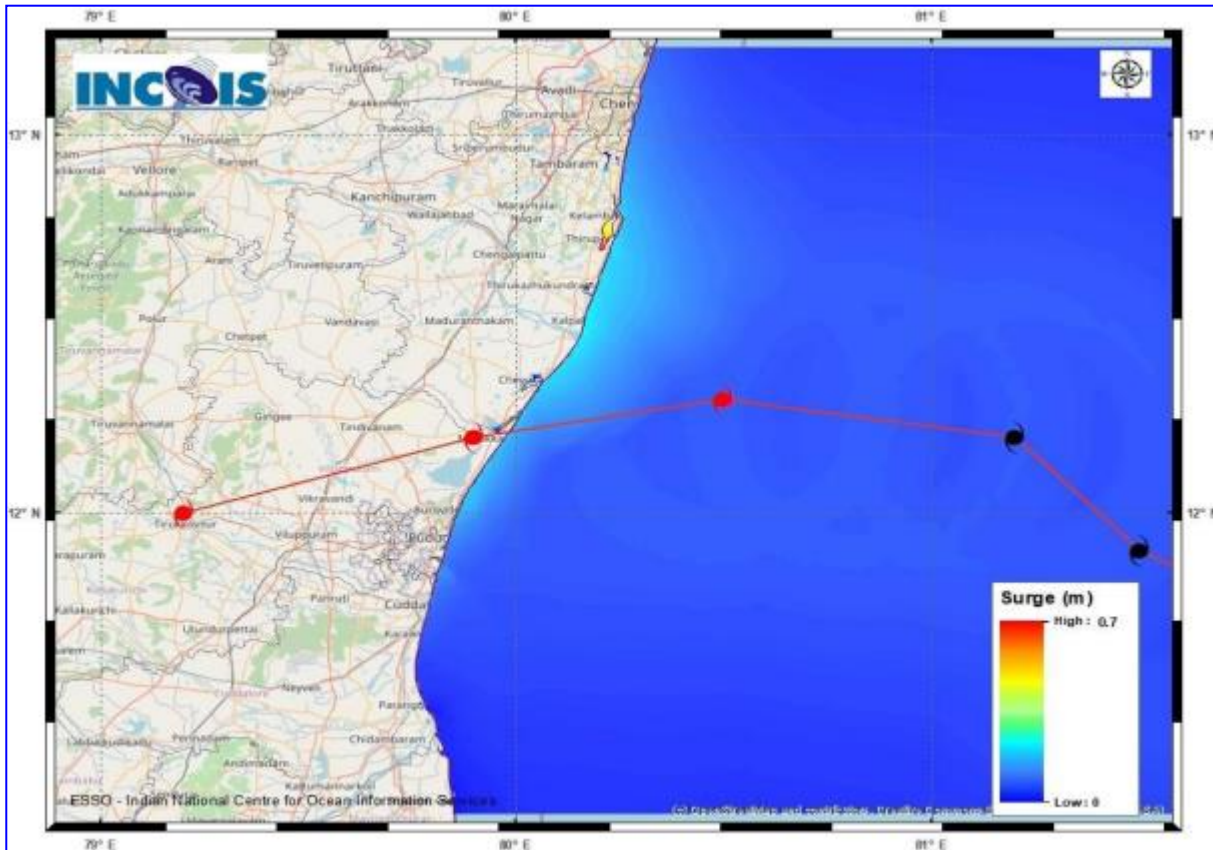


Flash Flood Risk

	High Risk (Take Action)
	Moderate Risk (Be Prepared)
	Low Risk (Be Updated)

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Storm Surge Guidance

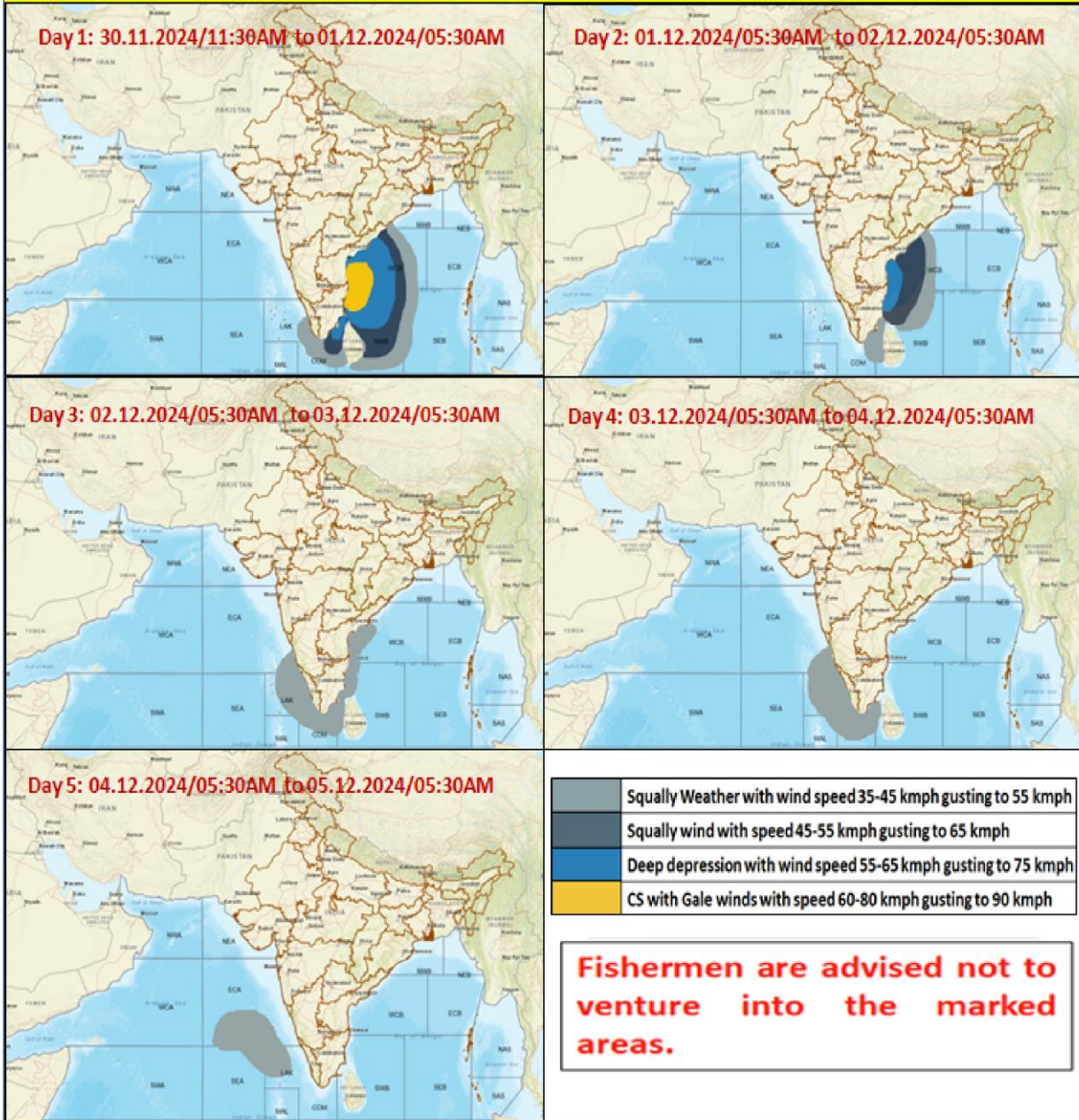


STORM SURGE HEIGHT INFORMATION:

* The below listed surge heights are over and above astronomical tide.

MANDAL/ TALUK	DISTRICT	STATE / UNION TERRITORY	NEAREST PLACE OF HABITATION	STORM SURGE (m)*	EXPECTED INUNDATION EXTENT (km)
Chengalpattu	Kancheepuram	Tamil Nadu	Muthukadu	0.2-0.7	Upto 0.13

Fishermen Warning Graphics



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