



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 27.11.2024

SPECIAL TROPICAL WEATHER OUTLOOK FOR THE NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR THE NEXT 120 HOURS ISSUED AT 1600 UTC OF 27.11.2024 BASED ON 1200 UTC OF 27.11.2024.

Sub: Deep Depression over Southwest Bay of Bengal

The Deep Depression over Southwest Bay of Bengal moved slowly north-northwestwards with a speed of 3 kmph during past 6 hours and lay centred at 1200 UTC of today, the 27th November 2024 over the same region near latitude 8.9°N and longitude 82.1°E, about 100 km east-northeast of Trincomalee (43418), 320 km southeast of Nagappattinam (43347), 420 km southeast of Puducherry (43331) and 500 km south-southeast of Chennai (43279).

It is very likely to continue to move north-northwestwards skirting Sri Lanka coast and intensify into a cyclonic storm during next 12 hours. Thereafter, it will continue to move north-northwestwards and reach near north Tamil Nadu-Puducherry coasts as a deep depression around 0300 UTC of 30th November.

The system is being tracked by DWR Karaikal. A continuous watch is being maintained for the movement and intensification of system.

Estimated Central Pressure in association with the system is 999 hPa and associated maximum sustained wind speed is 30 kts gusting to 40 kts. Sea condition is likely to be rough to very rough over southwest Bay of Bengal & along and off Sri Lanka coast till 27th November/0000 UTC. It is likely to become Very Rough to High from 27th/0000 UTC till 29th November. Rough to very rough sea condition is likely along & off Tamil Nadu - Puducherry and South Andhra Pradesh coasts till 29th November. Rough to very rough sea condition is likely over adjoining westcentral Bay of Bengal from 27th/1200 UTC till 29th November.

As per latest satellite imagery, intensity of the system is characterized as T2.0. Clouds are organized in shear pattern. Intense cloud mass is sheared 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 neighbourhood between latitude 8.0N to 16.0N and longitude 78.0E to 90.0E, Sri Lanka, Palk Strait, Gulf of Mannar, Tamil Nadu and Coastal Andhra Pradesh. Minimum cloud top temperature is 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
27.11.24/1200	8.9/82.1	55-65 gusting to 75	Deep Depression
27.11.24/1800	9.2/82.0	55-65 gusting to 75	Deep Depression
28.11.24/0000	9.6/82.0	60-70 gusting to 80	Cyclonic Storm
28.11.24/0600	10.0/81.9	60-70 gusting to 80	Cyclonic Storm
28.11.24/1200	10.4/81.8	65-75 gusting to 85	Cyclonic Storm
29.11.24/0000	11.0/81.5	65-75 gusting to 85	Cyclonic Storm
29.11.24/1200	11.5/81.0	60-70 gusting to 80	Cyclonic Storm
30.11.24/0000	11.9/80.6	55-65 gusting to 75	Deep Depression
30.11.24/1200	12.3/80.1	50-60 gusting to 70	Deep Depression

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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Remarks:

Currently, the system has moved away from the intense patch of higher SST of about 30°C (6-10°N and 84-88°E) and is an area with relatively lower SST (29°C). Further the SST is relatively less along & off the Tamil Nadu coast. The total precipitable water imagery is indicating warm moist air around system area. However, colder air incursion is seen in the southwest sector. The tropical cyclone heat potential is less than 40 KJ/cm² over southwest & adjoining westcentral BoB along & off Sri Lanka/Tamil Nadu/ Andhra Pradesh coasts. The increase in barrier layer depth over the southwest BoB may also lead to marginal weakening near coast. The land interactions with Sri Lanka coast is also inhibiting intensification of system.

Madden Julian Oscillation (MJO) is in phase 4 with amplitude more than 1 and would move across phase 5 from 29th 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 27th - 28th November indicate a favourable environment for intensification of system.

Low level positive cyclonic vorticity at 850 hpa level is around 150x10⁻⁵ s⁻¹ over southwest BoB near system area and is extending upto 200 hPa level. The low level convergence remained the same during past 6 hours and is around 30 x10⁻⁵ s⁻¹ over system area. Upper level divergence also remained same and is around 30x10⁻⁵ s⁻¹ to the northeast of system centre. Zone of convergence and divergence are not aligned. Vertical wind shear is moderate (15-20 kt) over the system area and is high to the north of 10°N and along the Tamil Nadu coast. The system is being steered north-northwestwards along the periphery of upper tropospheric ridge near 13°N.

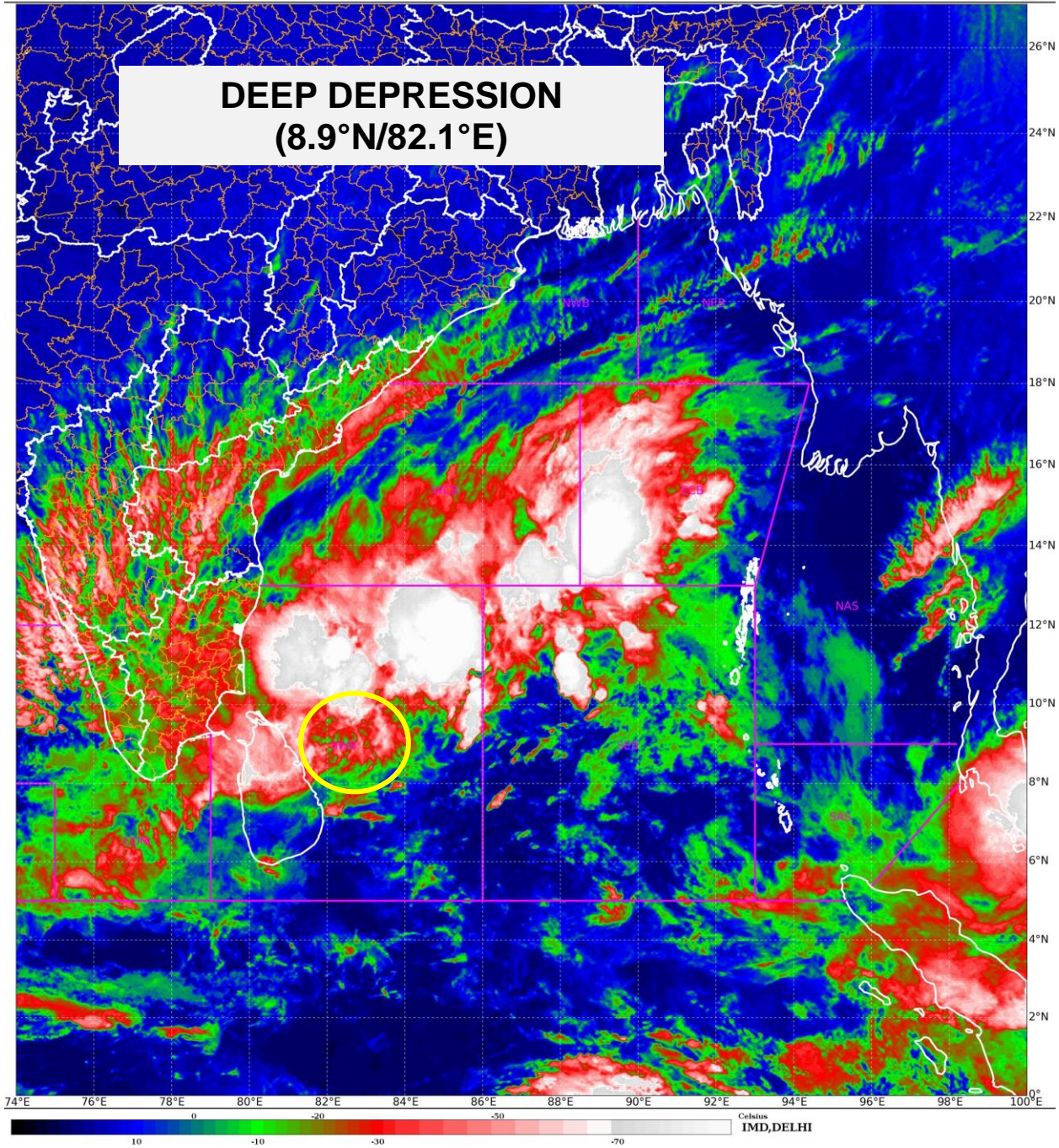
Various environmental features (higher SST, warm moist air incursion into the core, high ocean thermal energy, moderate wind shear, favourable MJO & Equatorial Rossby Waves) are indicating favourable environment for marginal intensification of system till 28th November. However, all features indicate that system would show weakening as it moves towards Tamil Nadu coast (North of 11°N).

There is still lack of consensus among various models wrt movement and landfall. Most of the models are indicating intensification into marginal cyclonic storm till 29th/0000 UTC and gradual weakening of the system thereafter as it moves towards the coast.

It is inferred that the deep depression over Southwest Bay of Bengal is very likely to continue to move north-northwestwards skirting Sri Lanka coast and intensify into a cyclonic storm during next 12 hours. Thereafter, it will continue to move north-northwestwards and reach near north Tamil Nadu-Puducherry coasts as a deep depression around 0300 UTC of 30th November.

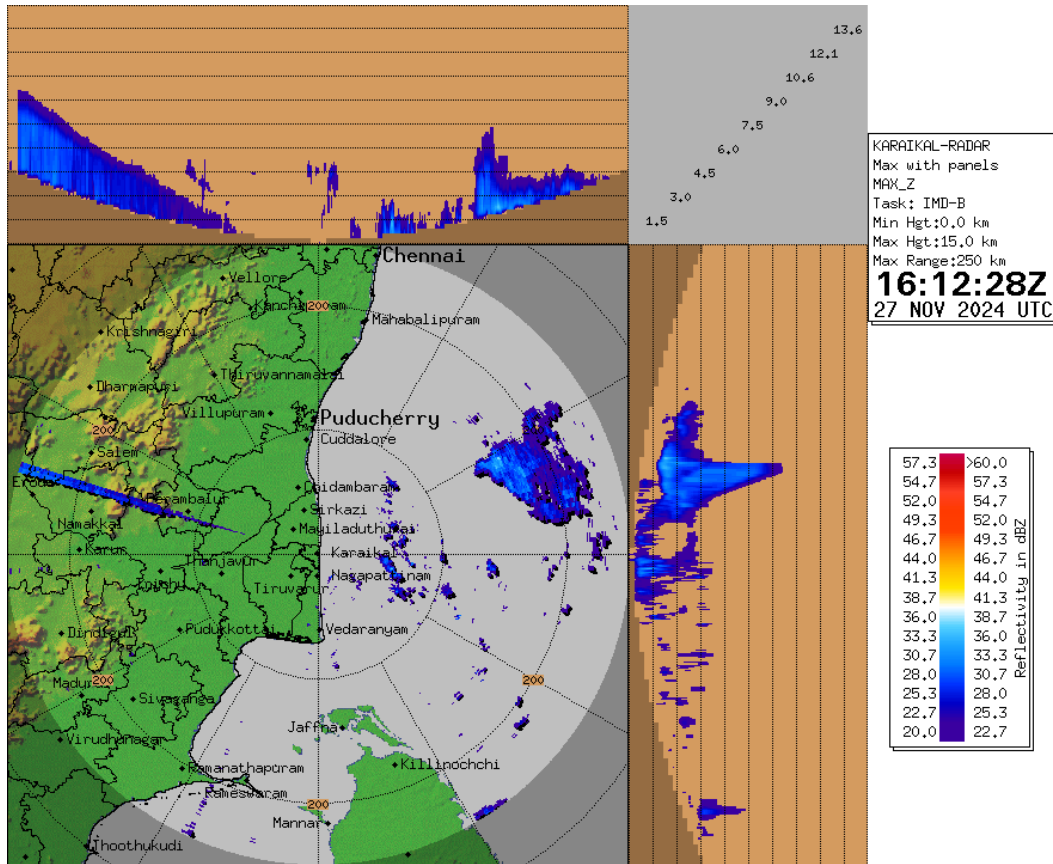
Next bulletin will be issued at 2100 UTC of 27th November, 2024.

(Monica Sharma)
Scientist D, RSMC, New Delhi



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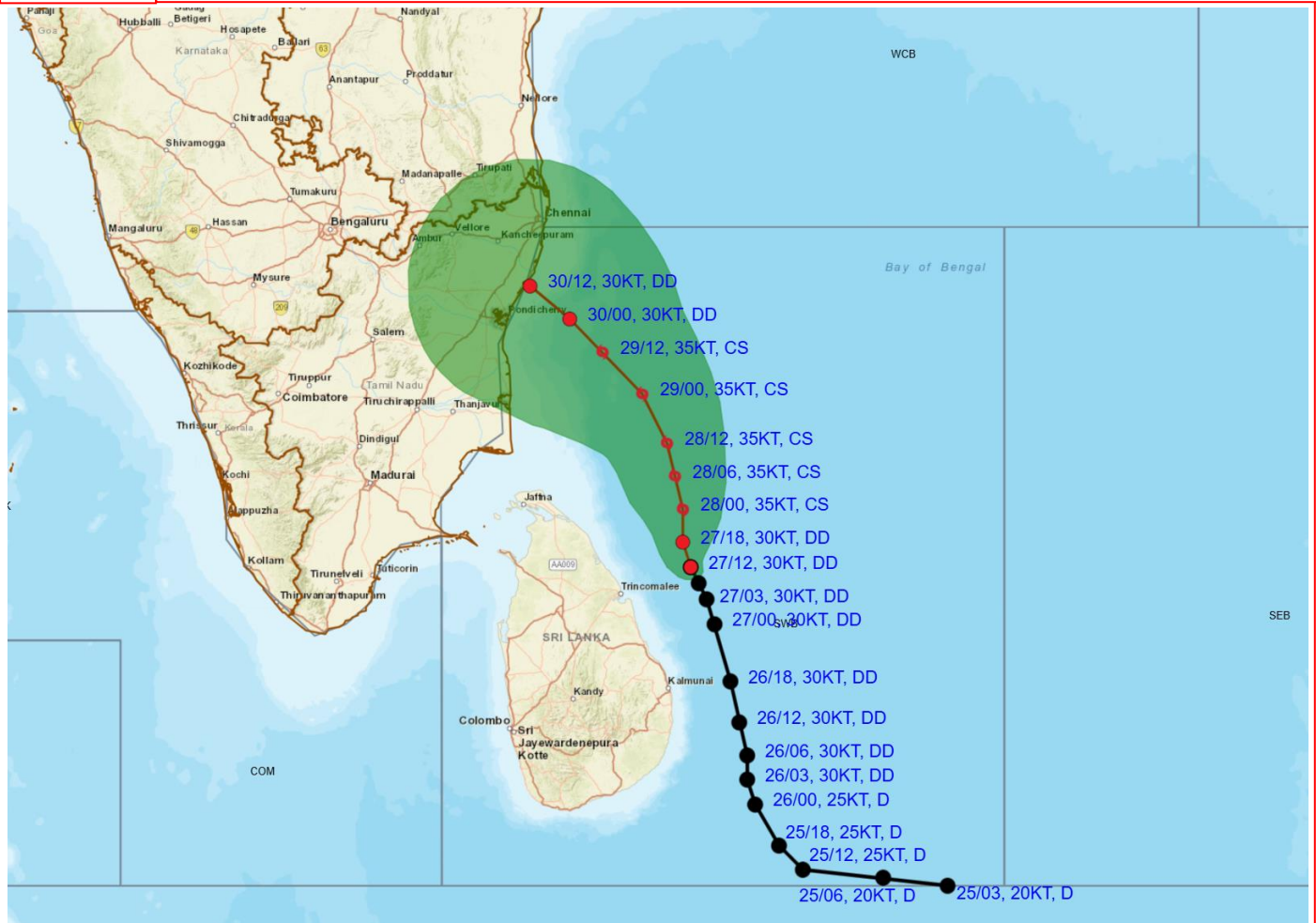
Doppler Weather Radar Observation (Max Z) at Karaikal



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OBSERVED AND FORECAST TRACK ALONG WITH CONE OF UNCERTAINTY OF DEEP DEPRESSION OVER SOUTHWEST BAY OF BENGAL BASED ON 1200 UTC (1730 HRS. IST) OF 27TH 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)

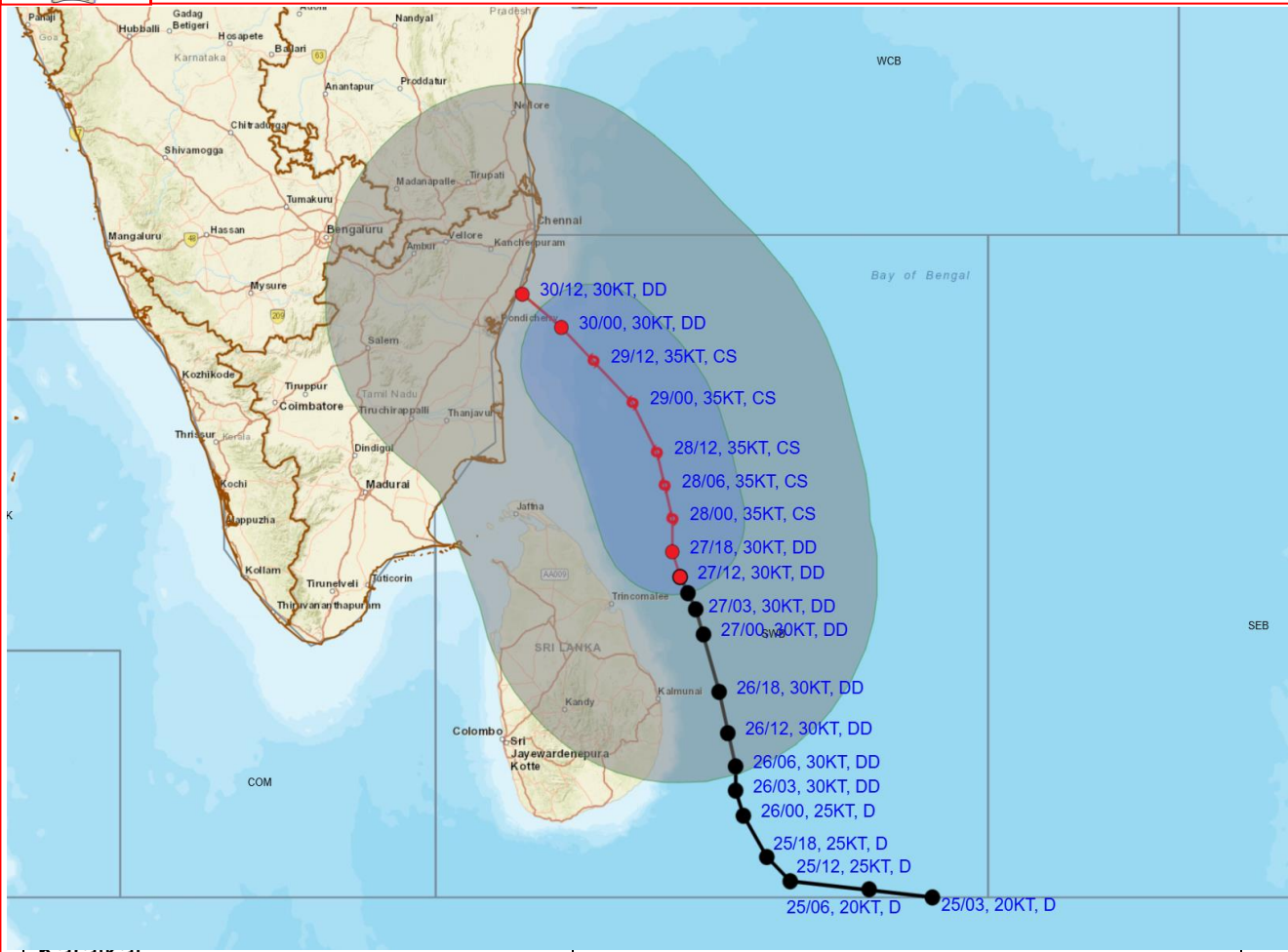
LESS THAN 34 KT
 34-47 KT
 ≥ 48 KT
 OBSERVED TRACK
 FORECAST TRACK
 CONE OF UNCERTAINTY

Forecast	DISTANCE (KM) AND DIRECTION FROM STATIONS				
Date and Time (UTC)	BATTICALOA	TRINCOMALEE	NAGAPPATTINAM	PUDUCHERRY	CHENNAI/MINAMBAKKAM
27.11.24/1200	140, NNE	100, ENE	320, SE	420, SE	500, SSE
28.11.24/1200	300, N	210, NNE	220, E	280, SE	340, SSE
29.11.24/1200	430, N	330, N	150, ENE	140, ESE	190, SSE
30.11.24/1200	540, NNW	430, NNW	170, N	50, NE	80, S

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OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEEP DEPRESSION OVER SOUTHWEST BAY OF BENGAL BASED ON 1200 UTC (1730 HRS. IST) OF 27TH 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)
 VS CS : VERY SEVERE CYCLONIC STORM (64-89 KT)
 ES CS : 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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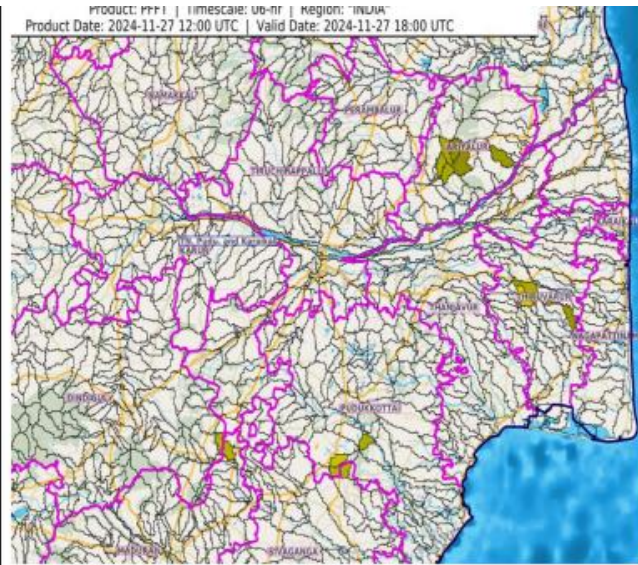
Flash Flood Risk

Persistent Flash Flood Threat (PFFT) till 2330 IST of 27-11-2024 :

Low to Moderate flash flood threat likely over few watersheds & neighbourhoods of following Met Sub-divisions during next 6 hours.

Tamil Nadu - Pudu & Karaikal - Ariyalur, Pudukkottai, Madurai and Thiruvavarur districts.

Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 6 hours.

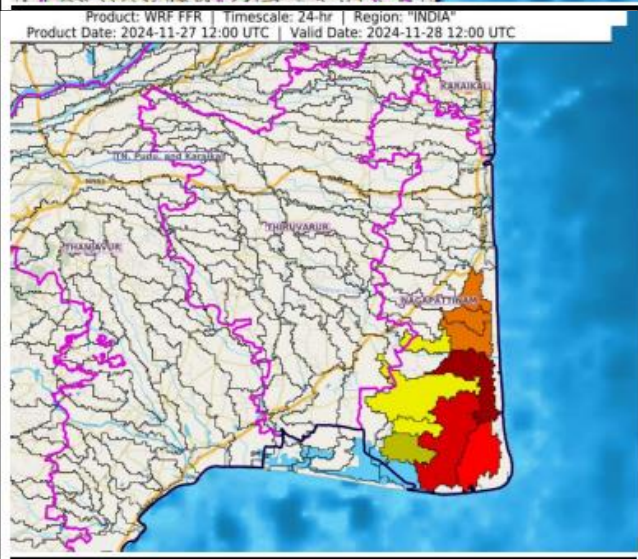


24 hours Outlook for the Flash Flood Risk (FFR) till 1730 IST of 28-11-2024 :

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

Tamil Nadu - Pudu & Karaikal – Nagapattinam district.

Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over 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

