



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

**DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 26.11.2024**

**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 1000 UTC OF 26.11.2024 BASED ON 0600 UTC OF 26.11.2024.**

### **Sub: Depression intensified into a Deep Depression over Southwest Bay of Bengal**

The Deep Depression over Southwest Bay of Bengal moved north-northwestwards with a speed of 12 kmph during past 6 hours and lay centred at 0600 UTC of today, the 26<sup>th</sup> November 2024 over the same region near latitude 6.6°N and longitude 82.8°E, about 280 km southeast of Trincomalee (43418), 570 km south-southeast of Nagappattinam (43347), 680 km south-southeast of Puducherry (43331) and 770 km south-southeast of Chennai (43279).

It is very likely to continue to move north-northwestwards and intensify further into a cyclonic storm on 27<sup>th</sup> November. Thereafter, it will continue to move north-northwestwards towards Tamil Nadu coast skirting Sri Lanka coast during subsequent 2 days.

A continuous watch is being maintained for the movement and intensification of system.

Estimated Central Pressure in association with the system is 1002 hPa and associated maximum sustained wind speed is 30 kts gusting to 35 kts. Sea condition is likely to be very rough over southwest Bay of Bengal & along and off Sri Lanka coast till 27<sup>th</sup> November/0000 UTC. It is likely to become High from 27<sup>th</sup>/1200 UTC till 29<sup>th</sup> November. Rough to very rough sea condition is likely along & off Tamil Nadu-Puducherry and South Andhra Pradesh coasts till 29<sup>th</sup> November. Rough to very rough sea condition is likely over adjoining westcentral Bay of Bengal from 27<sup>th</sup>/1200 UTC till 29<sup>th</sup> November.

At 0700 UTC, Colombo reported Mean Sea Level Pressure of 1002 hPa and maximum sustained wind speed of 320°/09KT and Trincomalee reported Mean Sea Level Pressure of 1005 hPa and maximum sustained wind speed of 360°/04KT.

As per latest satellite imagery, intensity of the system is characterized as 2.0. Cloud show organization in curved band pattern. 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 15.0N and longitude 80.0E to 92.0E. Minimum cloud top temperature is minus 80-93°C.

The system is monitored by Doppler Weather Radar Karaikal.

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
26.11.24/0600	6.6/82.8	50-60 gusting to 70	Deep Depression
26.11.24/1800	7.4/82.6	55-65 gusting to 75	Deep Depression
27.11.24/0600	8.3/82.4	55-65 gusting to 75	Deep Depression
27.11.24/1800	9.3/82.2	60-70 gusting to 80	Cyclonic Storm
28.11.24/0600	10.1/82.0	65-75 gusting to 85	Cyclonic Storm
28.11.24/1800	10.9/81.7	65-75 gusting to 85	Cyclonic Storm
29.11.24/0600	11.7/81.3	65-75 gusting to 85	Cyclonic Storm

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 is lying very close to an intense patch of higher SST about 30°C (6-10°N and 84-88°E) which would cause warm moist air incursion into the core and may lead to marginal intensification into a cyclonic storm for a short period over southwest BoB. However, SST is relatively lesser along the coast and may thus lead to slight weakening of the system before landfall. Similarly, tropical cyclone heat potential is more than 100 KJ/cm<sup>2</sup> over southwest BoB & adjoining EIO. It is less 40-60 KJ/cm<sup>2</sup> over southwest & adjoining eastcentral BoB and 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. Further the system is likely to track near t Sri Lanka coast and thus, land interactions may lead to slow intensification of system.

Total precipitable water imagery indicate warm moist air incursion into the core. Near to coast it is indicating cold dry air incursion. 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. 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 26<sup>th</sup> - 28<sup>th</sup> November indicate a favourable environment for intensification of system.

Low level winds indicate broad scale circulation over south and adjoining EIO Low level positive cyclonic vorticity at 850 hpa level is around 100-120x10<sup>-5</sup> s<sup>-1</sup> over southwest BoB & adjoining East Equatorial Indian Ocean. The zone of the maximum vorticity has become more organized and is extending upto 500 hPa level. The low level convergence has increased and is around 40 x10<sup>-5</sup> s<sup>-1</sup> over southwest BoB to the west of system centre. Upper level divergence is around 30x10<sup>-5</sup> s<sup>-1</sup> over the same region. The system is not showing tilting with height. The system is being steered north-northwestwards along the periphery of upper tropospheric ridge near 10°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 further intensification of system till 28<sup>th</sup> November.

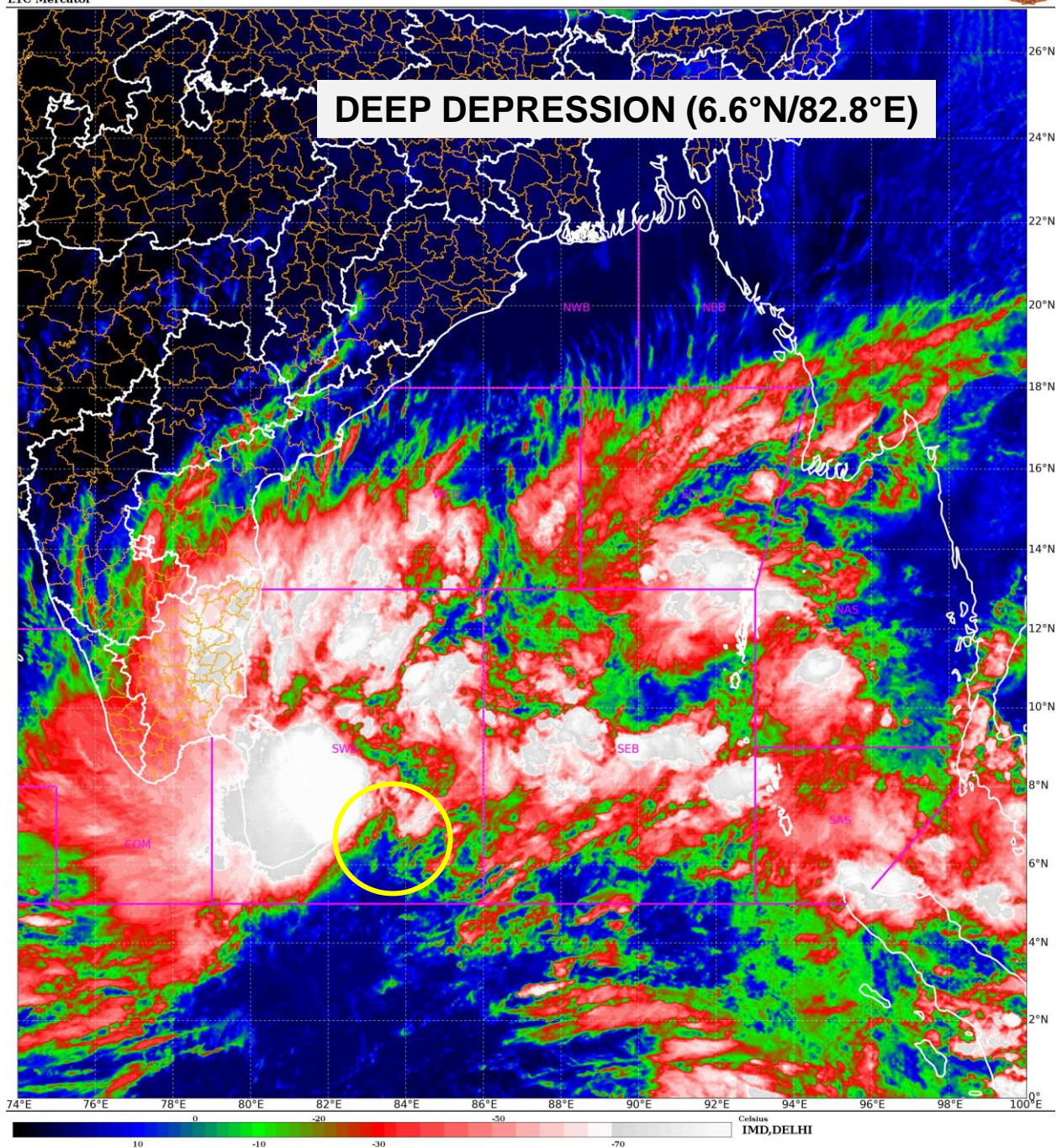
There is still divergence among various models wrt landfall and peak intensification. However, all models are indicating gradual weakening of the system and also slow movement near Tamil Nadu coast.

**Hence it is inferred that the deep depression over Southwest Bay of Bengal is very likely to continue to move north-northwestwards and intensify further into a cyclonic storm on 27<sup>th</sup> November. Thereafter, it will continue to move north-northwestwards towards Tamil Nadu coast skirting Sri Lanka coast during subsequent 2 days. A continuous watch is being maintained for further intensification and movement of system towards Tamil Nadu - Sri Lanka coasts.**

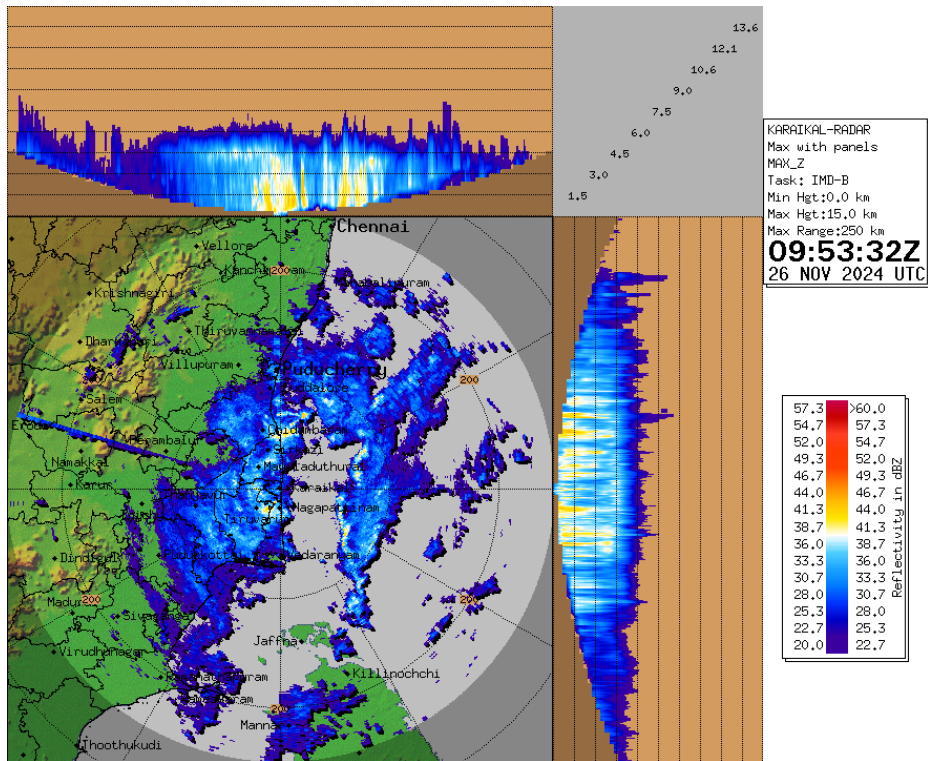
**Next bulletin will be issued at 1500 UTC of today, the 26<sup>th</sup> November, 2024.**

**(Monica Sharma)  
Scientist D, RSMC, New Delhi**





## Doppler Weather Radar Observations at Karaikal (Max Z)

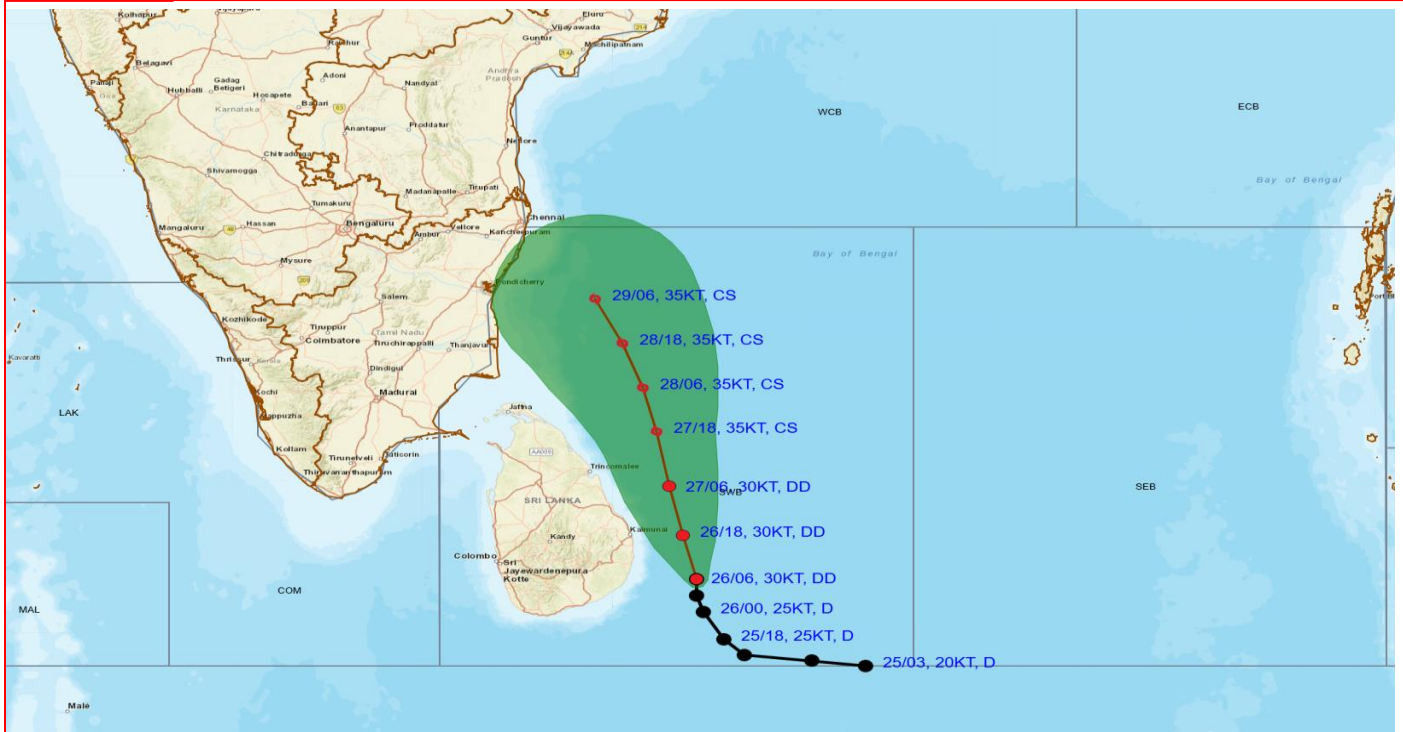


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# OBSERVED AND FORCAST TRACK ALONG WITH CONE OF UNCERTAINTY OF DEEP DEPRESSION OVER SOUTHWEST BAY OF BENGAL BASED ON 0600 UTC (1130 HRS. IST) OF 26<sup>TH</sup> NOVEMBER, 2024



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)  
ECS : EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)  
SuCS : SUPER CYCLONIC STORM (≥120 KT)

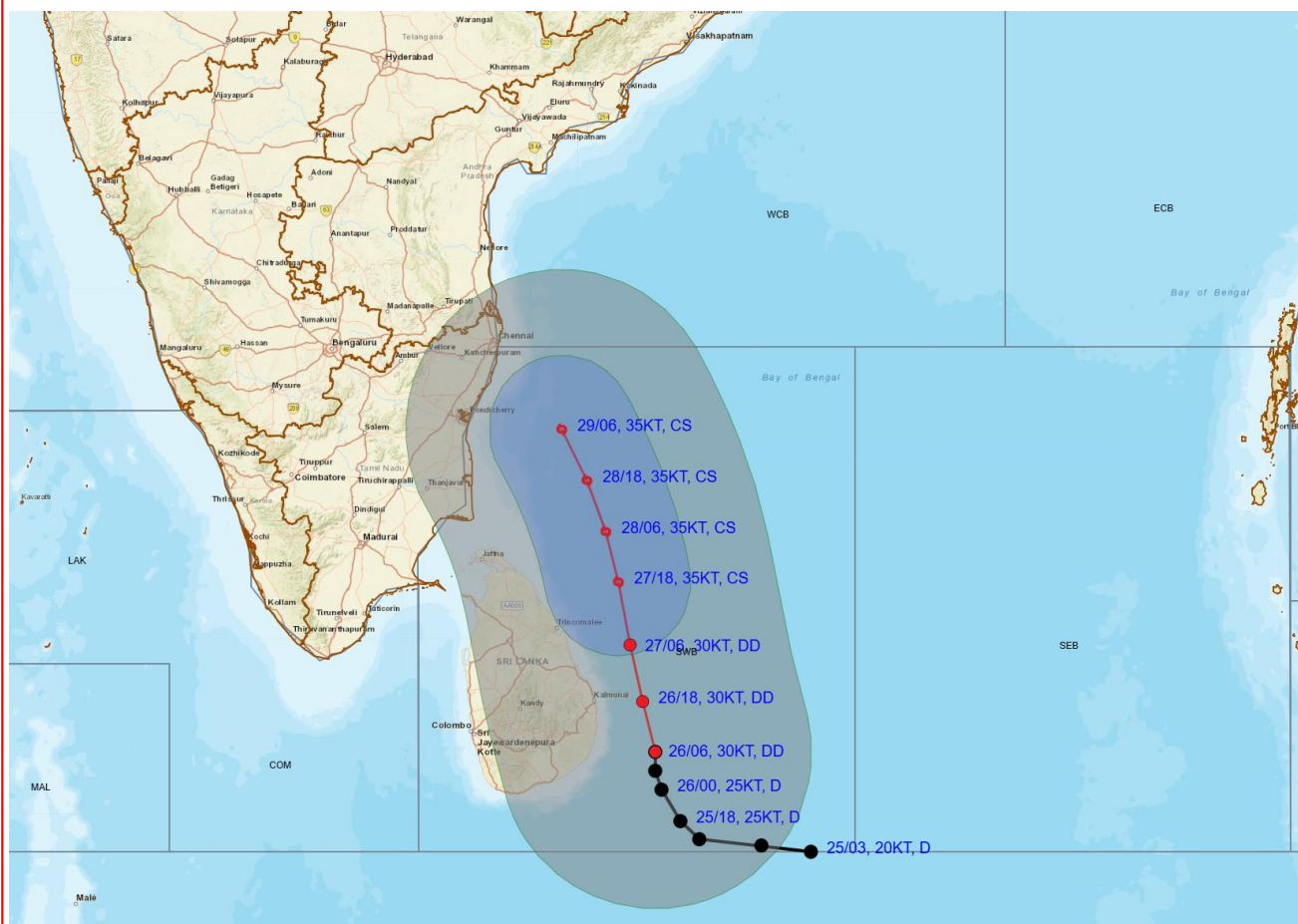
● LESS THAN 34 KT  
○ 34-47 KT  
○ ≥ 48 KT  
— OBSERVED TRACK  
— FORECAST TRACK  
■ CONE OF UNCERTAINTY

Forecast	DISTANCE (KM) AND DIRECTION FROM STATIONS				
Date and Time (UTC)	BATTICALOA	TRINCOMALEE	NAGAPPATTINAM	PUDUCHERRY	CHENNAI/MINAMBAKKAM
26.11.24/0600	170, SE	280, SE	570, SE	680, SSE	770, SSE
27.11.24/0600	100, NE	130, ESE	390, SE	500, SE	580, SSE
28.11.24/0600	270, N	190, NNE	250, ESE	320, SE	380, SSE
29.11.24/0600	450, N	350, N	190, ENE	160, E	190, SE

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  
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# OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEEP DEPRESSION OVER SOUTHWEST BAY OF BENGAL BASED ON 0600 UTC (1130 HRS. IST) OF 26<sup>TH</sup> 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)  
ECS : 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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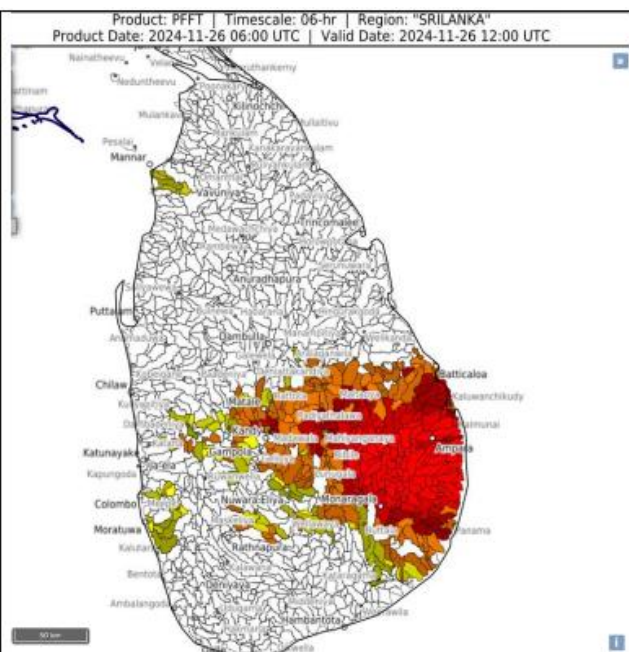


## **Persistent Flash Flood Threat (PFFT)**

**Till 1200 UTC of 26.11.2024:**

**Moderate to High flash flood threat** likely over few watersheds & neighbourhood of South-East parts of Sri Lanka during next 6 hours.

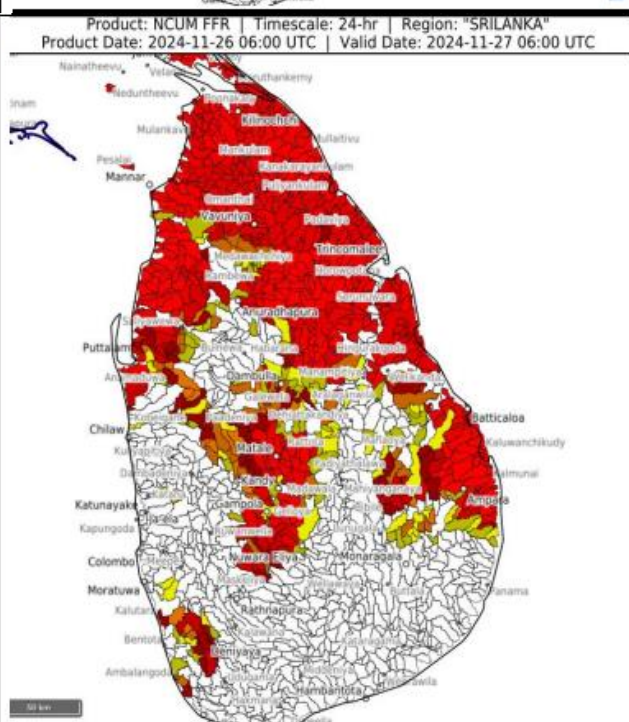
Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 6 hours.









## **24 hours Flash Flood Risk Outlook till 0600 UTC of 27.11.2024:**

**High flash flood risk** likely over few watersheds & neighbourhood of North, East and Central parts of Sri Lanka during next 24 hours.

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.



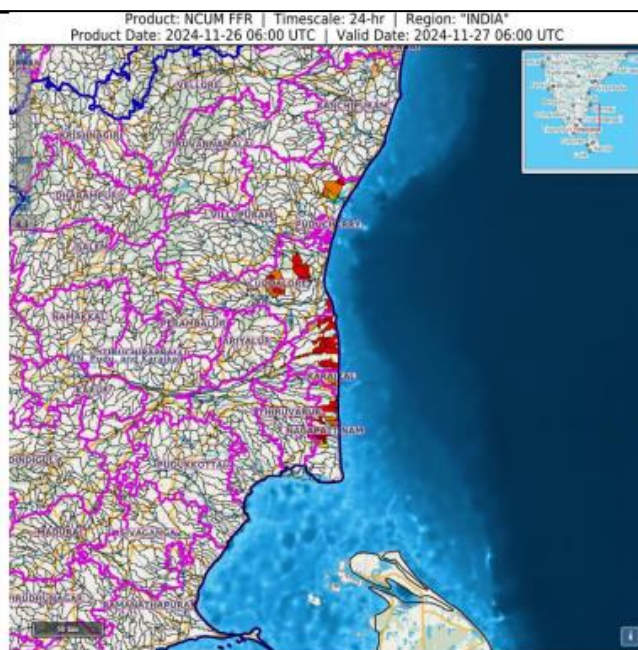
Flash Flood Threat	Flash Flood Risk
 <b>High Threat (Take Action)</b>	 <b>High Risk (Take Action)</b>
 <b>Moderate threat (Be Prepared)</b>	 <b>Moderate Risk (Be Prepared)</b>
 <b>Low Threat (Be Updated)</b>	 <b>Low Risk (Be Updated)</b>







## 24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 27-11-2024:

**Low to Moderate flash flood risk** likely over few watersheds & neighbourhoods of following Met-subdivision in next 24 hours.

**Tamilnadu, Puducherry & Karaikal:**  
Cuddallur, Villupuram, Nagapattinam, Karaikal 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 24 hours.

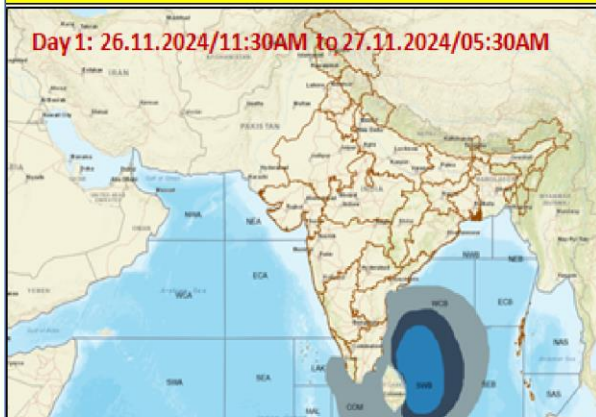


Flash Flood Threat	Flash Flood Risk
 <b>High Threat (Take Action)</b>	 <b>High Risk (Take Action)</b>
 <b>Moderate threat (Be Prepared)</b>	 <b>Moderate Risk (Be Prepared)</b>
 <b>Low Threat (Be Updated)</b>	 <b>Low Risk (Be Updated)</b>

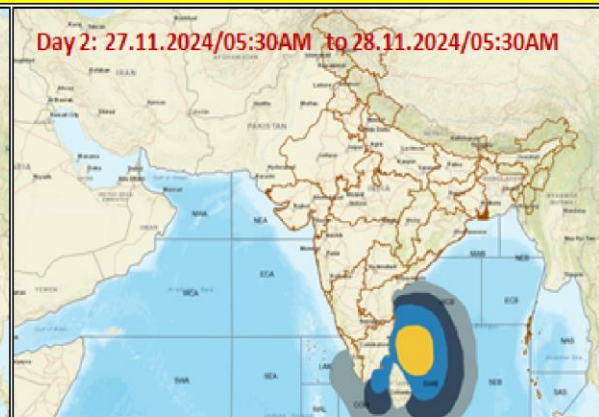


## Fishermen Warning Graphics

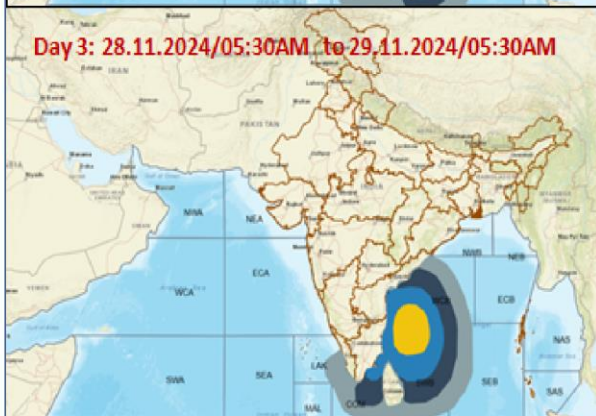
**Day 1: 26.11.2024/11:30AM to 27.11.2024/05:30AM**



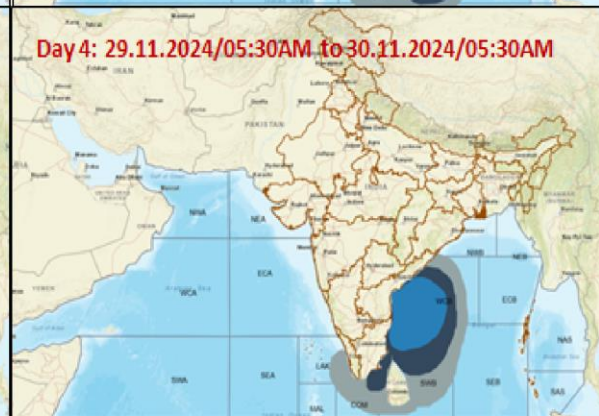
**Day 2: 27.11.2024/05:30AM to 28.11.2024/05:30AM**



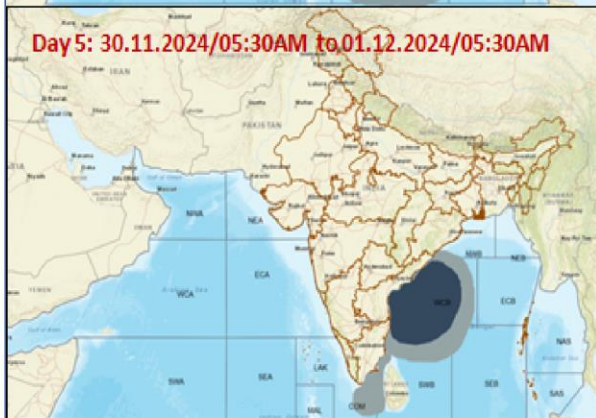
**Day 3: 28.11.2024/05:30AM to 29.11.2024/05:30AM**



**Day 4: 29.11.2024/05:30AM to 30.11.2024/05:30AM**



**Day 5: 30.11.2024/05:30AM to 01.12.2024/05:30AM**



Squally Weather with wind speed 35-45 kmph gusting to 55 kmph

Squally wind with speed 45-55 kmph gusting to 65 kmph

Deep depression with wind speed 55-65 kmph gusting to 75 kmph

CS with Gale winds with speed 60-80 kmph gusting to 90 kmph

**Fishermen are advised not to venture into the marked areas.**