



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 25.11.2024

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 0700 UTC OF 25.11.2024 BASED ON 0600 UTC OF 25.11.2024.

Sub: Depression over central parts of South Bay of Bengal and adjoining East Equatorial Indian Ocean

Yesterday’s well marked low pressure area over southeast Bay of Bengal and adjoining East Equatorial Indian Ocean moved west-northwestwards, intensified into a depression and lay centred at 0300 UTC of today, the 25th November 2024 over central parts of south Bay of Bengal and adjoining East Equatorial Indian Ocean near latitude 5.0°N and longitude 85.3°E, about 600 km southeast of Trincomalee (4418), 880 km southeast of Nagappattinam (43347), 980 km southeast of Puducherry (433331) and 1050 km south-southeast of Chennai (43279).

It is likely to move northwestwards and intensify into a deep depression during next 24 hours. Thereafter, it is likely to continue to move northwestwards towards Tamil Nadu-Sri Lanka coasts during subsequent 2 days.

Estimated Central Pressure in association with the system is 1004 hPa and associated maximum sustained wind speed is 20-25 kts gusting to 30 kts. Sea condition is likely to be rough to very rough over southwest BoB and adjoining southeast BoB & east EIO.

As per latest satellite imagery, intensity of the system is characterized as T1.5. It shows shear pattern. The convective cloud mass is sheared to the northwest of system area. 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 3.0N to 12.0N and longitude 80.0E to 90.0E. Minimum cloud top temperature is minus 80-93°C. The multi-satellite based winds indicate stronger winds in the northeast sector.

A ship near 5.4N/86.9E reported Mean Sea Level Pressure of 1007.0 hPa and maximum sustained wind speed of 20KT/140°.

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
25.11.24/0300	5.0/85.3	40-50 gusting to 60	Depression
25.11.24/1200	5.7/84.3	45-55 gusting to 65	Depression
26.11.24/0000	6.8/83.5	50-60 gusting to 70	Deep Depression
26.11.24/1200	7.9/82.8	50-60 gusting to 70	Deep Depression
27.11.24/0000	8.9/82.1	55-65 gusting to 75	Deep Depression
27.11.24/1200	9.8/81.5	55-65 gusting to 75	Deep Depression
28.11.24/0000	10.8/80.9	55-65 gusting to 75	Deep Depression

Environmental features:

Sea surface temperature is more than 28-30°C over south Bay of Bengal (BoB). An intense patch of higher SST about 30°C (6-10°N and 84-88°E). It is indicating the system to show marginal intensification 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. Tropical cyclone heat potential is more than 100 KJ/cm² over south BoB & adjoining EIO. It is less 40-60 KJ/cm² over southwest & adjoining eastcentral BoB and along & off Sri Lanka/Tamil Nadu/ Andhra Pradesh coasts. The barrier layer depth over the southwest BoB has increased upto 50 m which is unfavourable for intensification. 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. CFS-NCICS model forecast indicates presence of Equatorial Rossby Waves over South Andaman Sea and south BoB during 25th-30th. Strong westerly wind anomaly over south BoB and easterly wind anomaly to its north over South & adjoining central BoB is indicated during 25th - 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 over south and adjoining EIO. Low level positive cyclonic vorticity at 850 hpa level has increased in past 24 hours is around 100-120x10⁻⁵ s⁻¹ 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 30 x10⁻⁵ s⁻¹ over southwest BoB and adjoining East EIO to the west of system centre. Upper level divergence has increased and is around 30x10⁻⁵ s⁻¹ over the same region. The vertical wind shear is low to moderate (10-15 knots) over south BoB & adjoining EIO. Upper tropospheric ridge is near 10°N to the north of system. The southeasterly winds prevailing over the system area are likely to steer the system northwesterly.

Various environmental features (higher SST, warm moist air incursion into the core, high ocean thermal energy) are indicating favourable environment for further intensification of system till 26th/1200 UTC.

Discussion of major models:

ECMWF: is indicating low pressure area (LPA) over east EIO & adjoining southwest BoB on 25th with north-northwestwards movement till 28/1200 UTC and gradual northwards movement thereafter. Peak intensification upto depression stage is indicated. Model is indicating crossing over TamilNadu near Puducherry as a cyclonic circulation around 30/0600 UTC.

NCUM: is indicating a cyclonic circulation over southwest BoB and adjoining EIO on 25/0000 UTC. It is indicated to move north-northwestwards, intensify into a depression around 27/0000 and further into a marginal cyclonic storm around 28/1200 UTC. Thereafter it is indicated to cross Tamil Nadu coast close to Chennai as a deep depression around 29/1200 UTC.

IMD GFS: is indicating likely deep depression over southwest Bay of Bengal at 0000 UTC of 25th November. It is indicated to move north-northwestwards, cross Sri Lanka coast on 26/0000 UTC. It is indicated to move further north-northwestwards and weaken gradually into a depression around 29/0000 UTC and further into a low pressure area on 30/0000 UTC. The system is not indicated to cross land.

IMD MME: is indicating the depression over EIO and adjoining southwest BoB to move north-northwestwards, intensify into a deep depression on 26/0000 UTC and cross Tamil Nadu coast near Chennai around 29/2200 UTC.

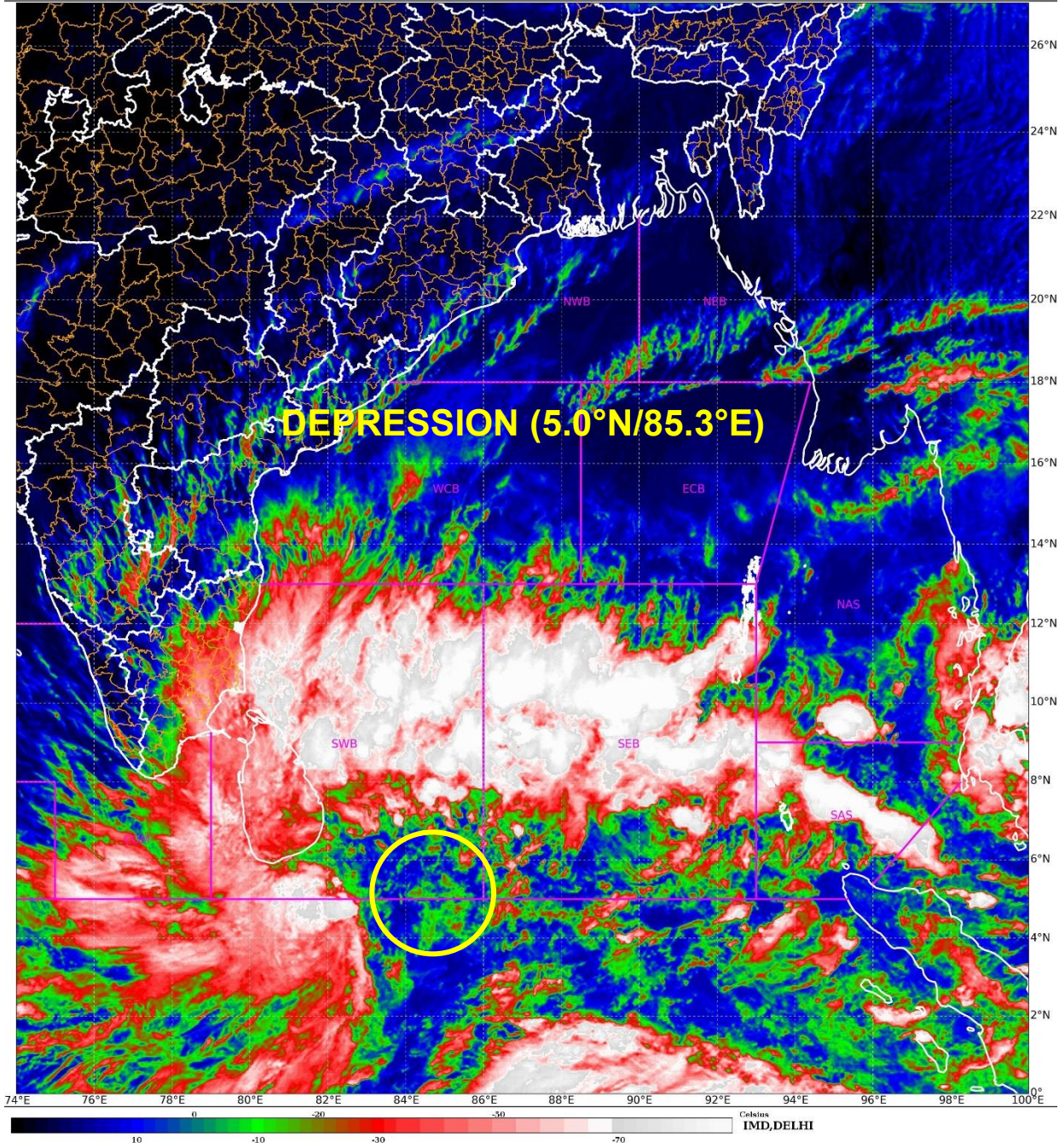
There is still variation (though reduced) among various models wrt track, intensification and landfall of system. Peak intensification is varying from depression to marginal cyclonic storm stage. However, most of the models are indicating the system to make landfall over the Tamil Nadu coast and weaken slightly prior to landfall. The landfall point is varying between Puducherry and Chennai (12-13N), landfall time is varying between 29/1200 UTC & 30/0600 UTC and intensity from 15-30 KT.

Hence it is inferred that the depression over central parts of South Bay of Bengal and adjoining East Equatorial Indian Ocean is likely to move northwestwards and intensify into a deep depression during next 24 hours. Thereafter, it is likely to continue to move northwestwards towards Tamil Nadu-Sri Lanka coasts 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 0900 UTC of today, the 25th November, 2024.

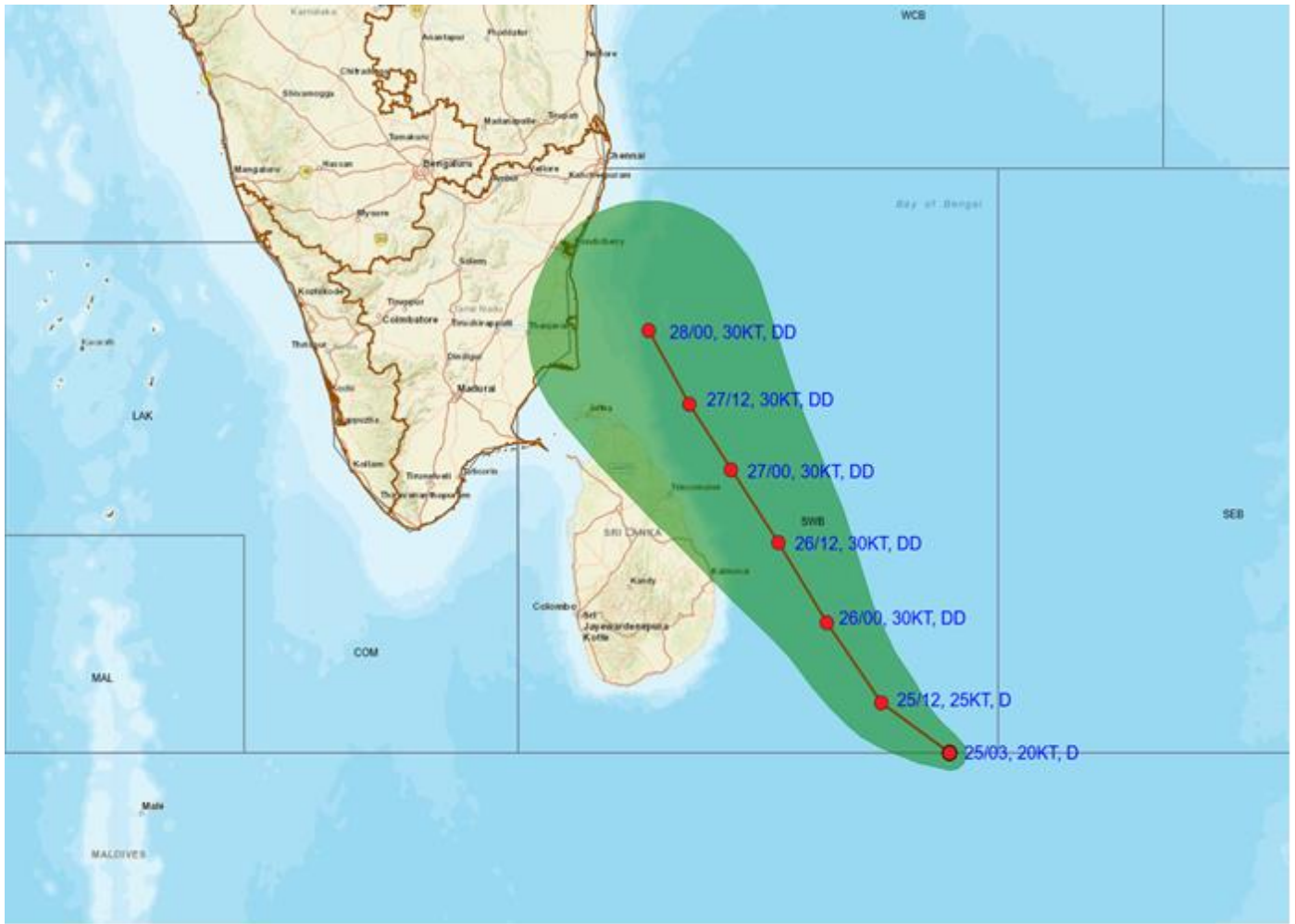
(Monica Sharma)
Scientist D, Cyclone Warning, New Delhi



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 TRACK ALONG WITH CONE OF UNCERTAINTY OF DEPRESSION OVER CENTRAL PARTS OF SOUTHEAST BAY OF BENGAL AND ADJOINING EAST EQUATORIAL INDIAN OCEAN BASED ON 0300 UTC (0830 HRS. IST) OF 25TH NOVEMBER, 2024



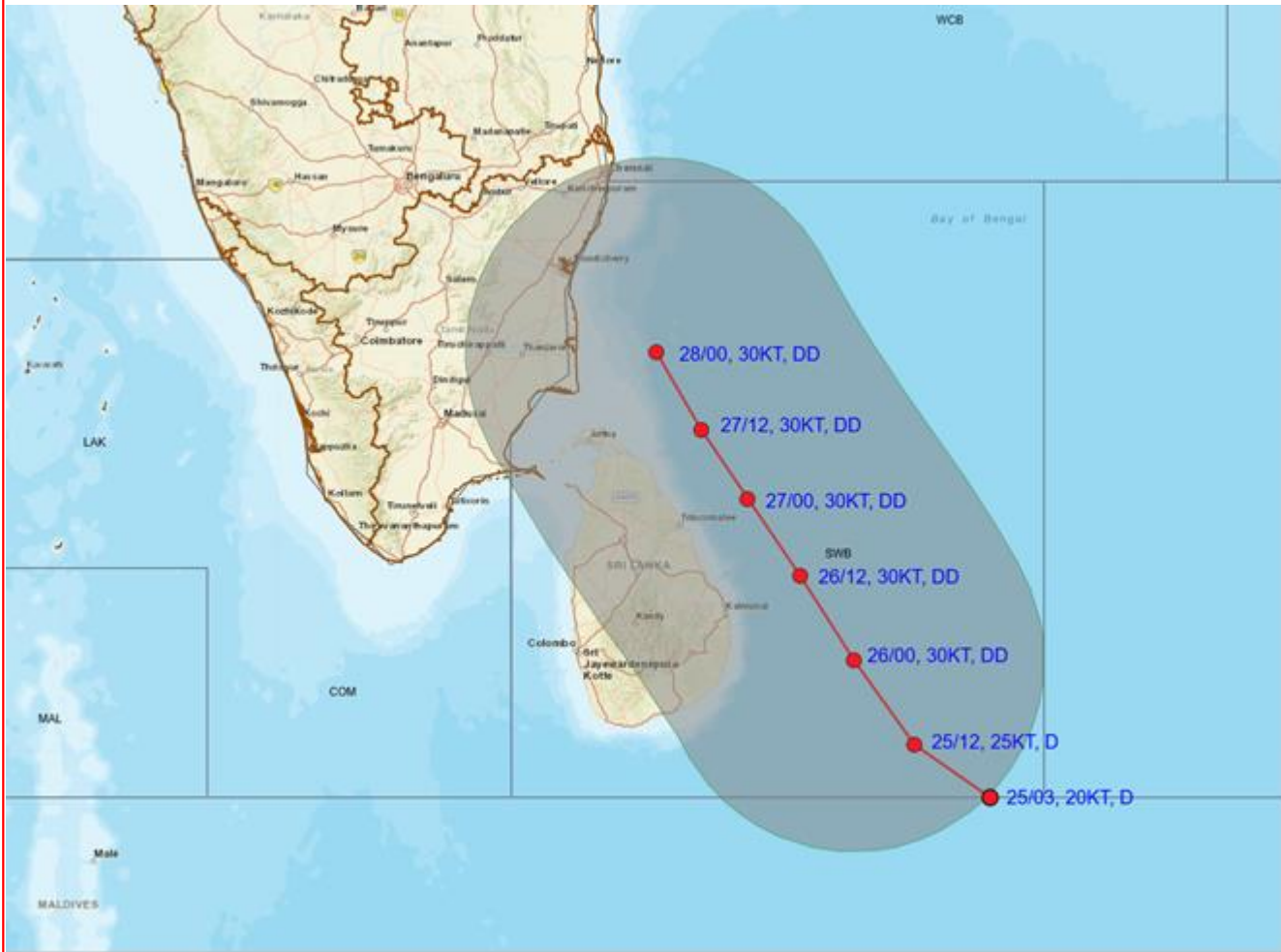
DATE/TIME : IN UTC
 IST : UTC + 0530
 KT : NAUTICAL MILE S/HOUR = 1.85 KM/HOUR
 LPA : LOW PRESSURE AREA
 WML : WELL MARKED LOW PRESSURE AREA
 D : DEPRESSION (17-27 KT)
 DD : DEEP DEPRESSION (28-33 KT)
 CS : CYCLONIC STORM (34-47 KT)
 SCS : SEVERE CYCLONIC STORM (48-63 KT)
 VSCS : VERY SEVERE CYCLONIC 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
25.11.24/0300	500, SE	590, SE	870, SE	980, SE	1050, SSE
26.11.24/0000	230, ESE	320, SE	600, SE	700, SE	780, SSE
27.11.24/0000	160, NNE	120, ENE	320, SE	420, SE	490, SSE
28.11.24/0000	350, N	250, N	150, E	200, SE	270, SSE



OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEPRESSION OVER CENTRAL PARTS OF SOUTHEAST BAY OF BENGAL AND ADJOINING EAST EQUATORIAL INDIAN OCEAN BASED ON 0300 UTC (0830 HRS. IST) OF 25TH NOVEMBER, 2024



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 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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Fishermen Warning Graphics

