



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 01.12.2023

SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 168 HOURS ISSUED AT 0400 UTC OF 01.12.2023 BASED ON 0000 UTC OF 01.12.2023.

SUB: DEPRESSION OVER SOUTHEAST BAY OF BENGAL

YESTERDAY'S WELL MARKED LOW PRESSURE AREA OVER SOUTHEAST BAY OF BENGAL MOVED WEST-NORTHWESTWARDS DURING PAST 12 HOURS, CONCENTRATED INTO A DEPRESSION AND LAY CENTERED AT 0000 UTC OF TODAY, THE 01ST DECEMBER, 2023 OVER SOUTHEAST AND ADJOINING SOUTHWEST BAY OF BENGAL NEAR LATITUDE 9.1°N AND LONGITUDE 86.4°E, ABOUT 790 KM EAST-SOUTHEAST OF PUDUCHERRY, 800 KM SOUTHEAST OF CHENNAI (43279), 990 KM SOUTHEAST OF BAPATLA (43220) AND 970 KM SOUTHEAST OF MACHILIPATNAM (43185).

IT IS LIKELY TO CONTINUE TO MOVE WEST-NORTHWESTWARDS, INTENSIFY INTO A DEEP DEPRESSION BY 2ND DECEMBER AND FURTHER INTO A CYCLONIC STORM OVER SOUTHWEST BAY OF BENGAL AROUND 3RD DECEMBER. THEREAFTER, IT WOULD MOVE NORTHWESTWARDS AND CROSS SOUTH ANDHRA PRADESH AND ADJOINING NORTH TAMIL NADU COASTS BETWEEN CHENNAI AND MACHILIPATNAM AROUND 1200 UTC OF 4TH DECEMBER AS A CYCLONIC STORM.

TRACK & INTENSITY FORECASTS:

DATE/TIME (UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
01.12.23/0000	9.1/86.4	35-45 KMPH GUSTING TO 55 KMPH	DEPRESSION
01.12.23/1200	9.9/85.4	40-50 KMPH GUSTING TO 60 KMPH	DEPRESSION
02.12.23/0000	10.9/84.0	50-60 KMPH GUSTING TO 70 KMPH	DEEP DEPRESSION
02.12.23/1200	11.6/82.7	55-65 KMPH GUSTING TO 75 KMPH	DEEP DEPRESSION
03.12.23/0000	12.2/81.9	60-70 KMPH GUSTING TO 80 KMPH	CYCLONIC STORM
03.12.23/1200	12.8/81.2	70-80 KMPH GUSTING TO 90 KMPH	CYCLONIC STORM
04.12.23/0000	13.4/80.8	75-85 KMPH GUSTING TO 95 KMPH	CYCLONIC STORM
04.12.23/1200	14.4/80.3	80-90 KMPH GUSTING TO 100 KMPH	CYCLONIC STORM
05.12.23/0000	15.3/80.2	70-80 KMPH GUSTING TO 90 KMPH	CYCLONIC STORM
05.12.23/1200	16.2/80.7	60-70 KMPH GUSTING TO 80 KMPH	CYCLONIC STORM

INSAT -3D IMAGERY AT 0000 UTC, INDICATED CONVECTION OVER SOUTHEAST BAY AND NEIGHBOURHOOD INCREASED WITH VORTEX CENTERED WITHIN HALF A DEGREE OF 8.5N / 87.0E WITH ASSOCIATED INTENSITY IS T1.5. SCATTERED TO BROKEN LOW/MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION OVER SOUTH AND ADJOINING CENTRAL BAY BETWEEN LAT 5.0N TO 15.0N LONG 82.0E TO 92.0E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93 DEG CELSIUS.

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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ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 20 KNOTS GUSTING TO 30 KNOTS. ESTIMATED CENTRAL PRESSURE IS 1002 HPA. SEA CONDITION IS LIKELY TO BE ROUGH TO VERY ROUGH OVER THE SOUTHWEST & ADJOINING SOUTHEAST BAY OF BENGAL. A SHIP NEAR 5.8N/90.2E REPORTED MEAN SEA LEVEL PRESSURE OF 1008 HPA AND MAXIMUM SUSTAINED WIND SPEED AS 250⁰/17.5 KT.

Remarks:

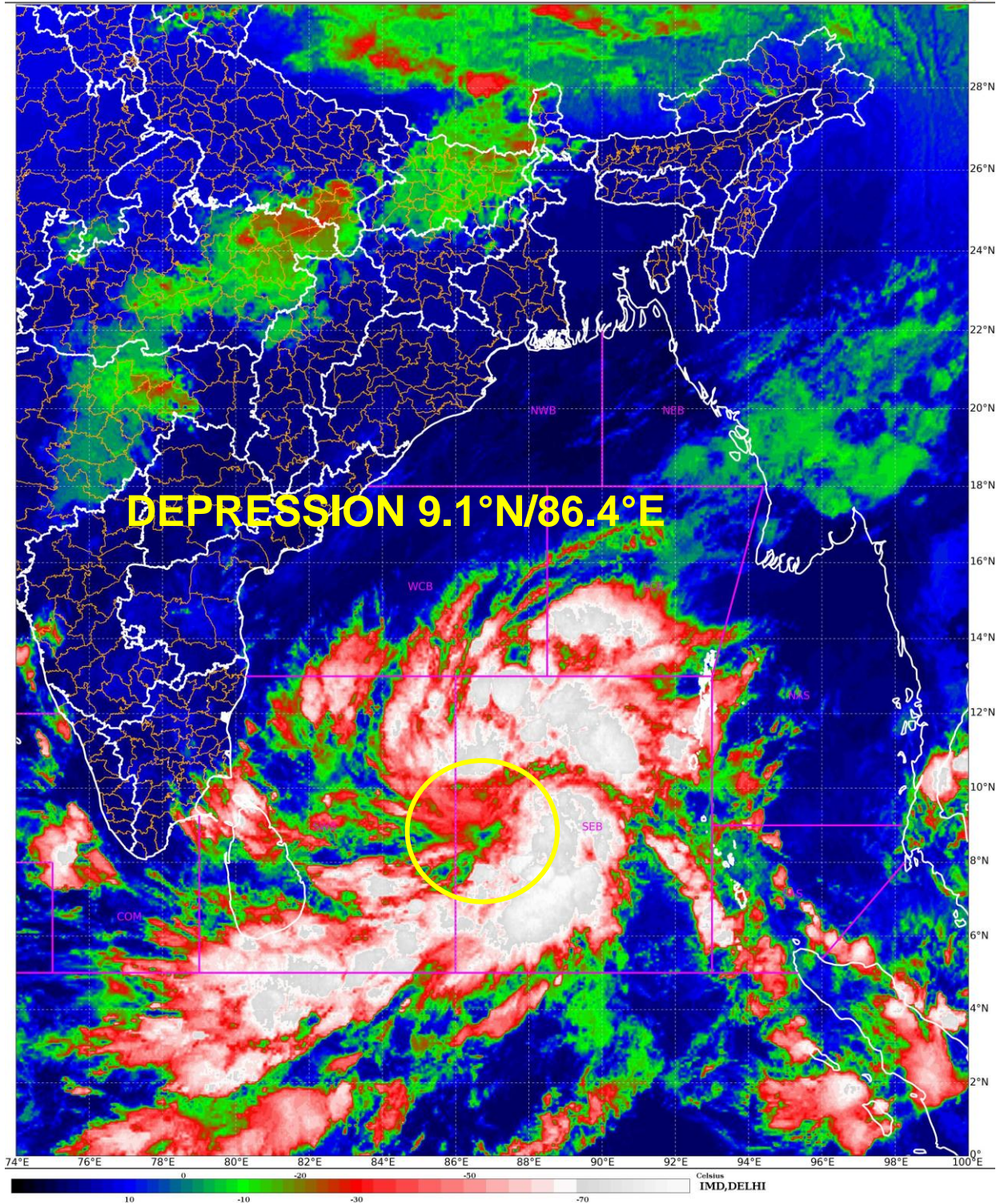
MADDEN JULIAN OSCILLATION (MJO) IS CURRENTLY IN PHASE 3 WITH AMPLITUDE GREATER THAN 1. IT WOULD MOVE ACROSS PHASES 3 AND 4 WITH AMPLITUDE GREATER THAN 1 DURING 1ST TO 6TH DECEMBER. THUS, MJO WOULD SUPPORT CYCLOGENESIS OVER THE BAY OF BENGAL (BOB) REGION TILL 6TH DECEMBER. SEA SURFACE TEMPERATURE IS 28-30⁰C OVER MAJOR PARTS OF BOB. TROPICAL CYCLONE HEAT POTENTIAL IS 60-70 KJ/CM² OVER SOUTHEAST BOB. THE NCICS BASED FORECASTS FOR EQUATORIAL WAVES INDICATE STRENGTHENING OF WESTERLY WINDS ALONGWITH PRESENCE OF EQUATORIAL ROSSBY WAVES & MJO OVER SOUTH BOB AND EASTERLY WINDS OVER CENTRAL BOB DURING 01 – 4TH DECEMBER. ALL THESE LARGE SCALE FEATURES ARE FAVOURABLE FOR CYCLOGENESIS (INTENSIFICATION INTO A CYCLONIC STORM) OVER SOUTHWEST BOB.

CURRENT ENVIRONMENTAL FEATURES INDICATE, POSITIVE LOW LEVEL VORTICITY OF 50-60X10⁻⁶S⁻¹ AROUND SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. POSITIVE LOW LEVEL CONVERGENCE IS THE SAME AND IS ABOUT 20 X 10⁻⁵ S⁻¹ TO THE EAST OF SYSTEM CENTRE AND ANOTHER ZONE OF 20 X 10⁻⁵ S⁻¹ LIES TO THE WEST OF SYSTEM CENTRE. POSITIVE UPPER LEVEL DIVERGENCE HAS INCREASED AND IS ABOUT 30 X 10⁻⁵ S⁻¹ TO THE EAST OF THE SYSTEM CENTRE AND IS NORTH-SOUTH ORIENTED. WIND SHEAR IS ABOUT 10-15 KNOTS OVER SOUTH BOB AND UPTO 12⁰N. LOW TO MODERATE CLOCKWISE DEEP LAYER WIND SHEAR IS SUPPORTING INTENSIFICATION OF THE SYSTEM.

GUIDANCE FROM VARIOUS NUMERICAL MODELS IS INDICATING INITIAL NORTHWESTWARDS MOVEMENT TOWARDS NORTH TAMILNADU AND ANDHRA PRADESH COASTS, WITH CROSSING OVER SOUTH ANDHRA PRADESH COAST AND NORTHEASTWARDS RECURVATURE WITH MOVEMENT ALONG THE COAST. THERE IS GOOD CONSENSUS AMONG THE MODELS WRT MOVEMENT. WRT INTENSIFICATION, MOST OF THE MODELS ARE INDICATING THE SYSTEM TO INTENSIFY INTO A CYCLONIC STORM. PEAK INTENSIFICATION OF 35 TO 45 KNOTS IS SUGGESTED. HOWEVER, ECMWF IS INDICATING INTENSIFICATION UPTO DEEP DEPRESSION STAGE. IMD GFS IS INDICATING INTENSIFICATION UPTO VERY SEVERE CYCLONIC STORM. IMD MME IS INDICATING INTENSIFICATION UPTO 45 KNOTS (CYCLONIC STORM CATEGORY).

CONSIDERING ALL THE ABOVE, THE DEPRESSION OVER SOUTHEAST AND ADJOINING SOUTHWEST BAY OF BENGAL IS LIKELY TO MOVE WEST-NORTHWESTWARDS AND INTENSIFY INTO A DEEP DEPRESSION BY 2ND DECEMBER AND FURTHER INTO A CYCLONIC STORM OVER SOUTHWEST BAY OF BENGAL AROUND 3RD DECEMBER. THEREAFTER, IT WOULD MOVE NORTHWESTWARDS AND CROSS SOUTH ANDHRA PRADESH AND ADJOINING NORTH TAMIL NADU COASTS BETWEEN CHENNAI AND MACHILIPATNAM AROUND EVENING OF 4TH DECEMBER AS A CYCLONIC STORM.

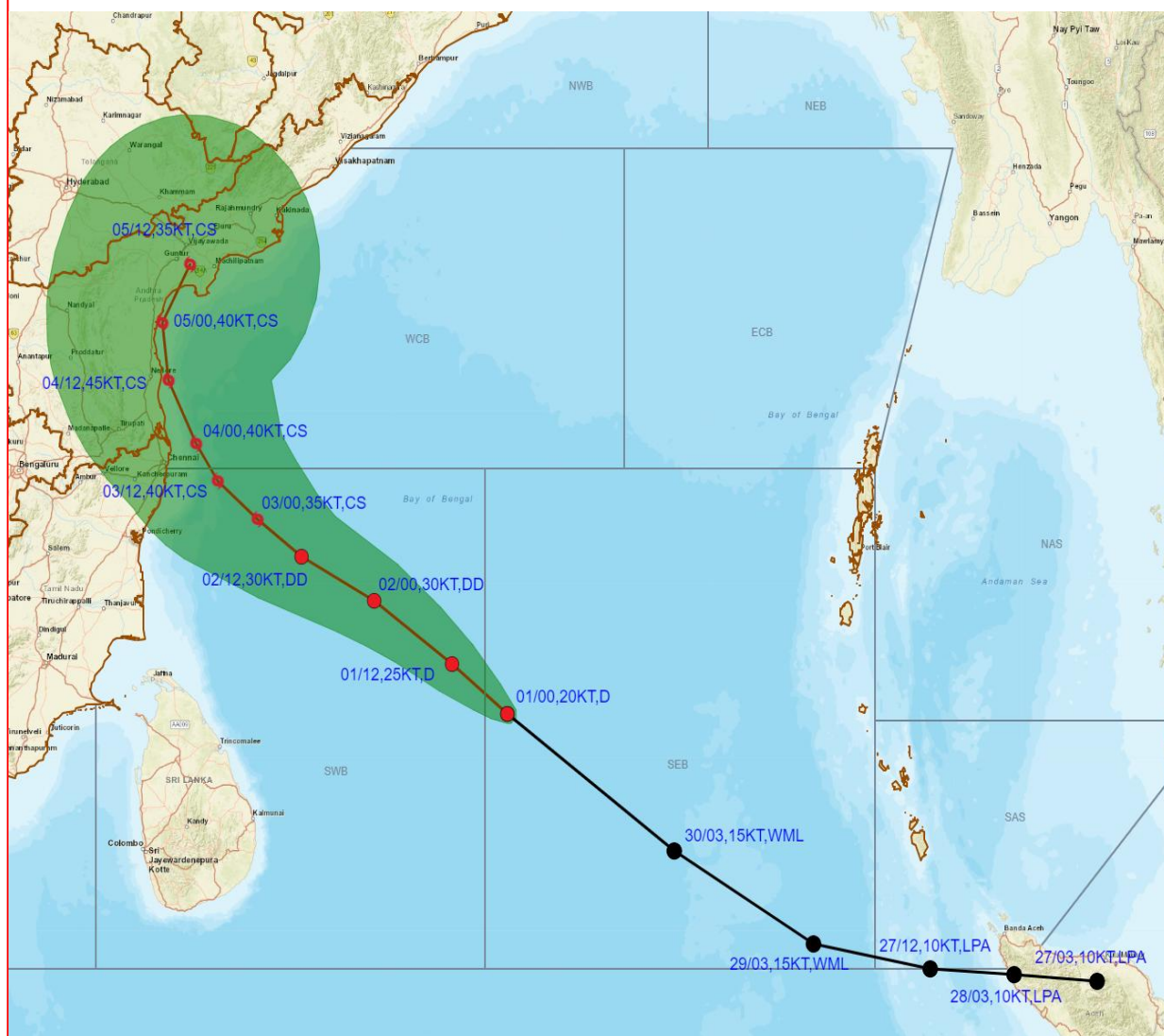
(D R PATTANAİK)
RSMC NEW DELHI



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OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH DEPRESSION OVER SOUTHEAST ADJOINING SOUTHWEST BAY OF BENGAL BASED ON 0000 UTC (0530 IST) OF 01ST DECEMBER 2023.



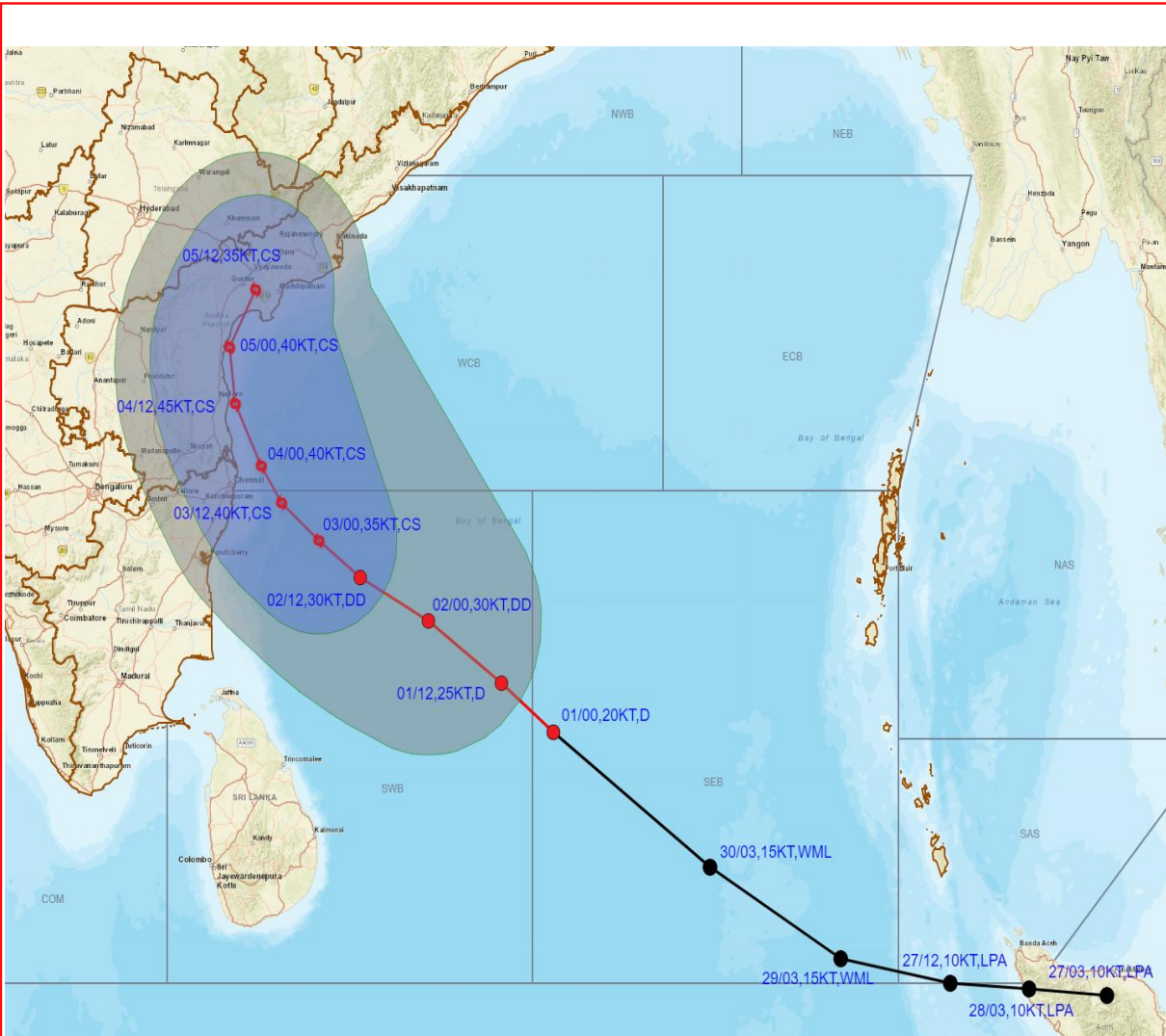
DATE/TIME IN UTC
 IST=UTC + 0530
 L: LOW PRESSURE AREA
 WML: WELL MARKED LOW PRESSURE AREA
 D: DEPRESSION (17-27 KT)
 DD: DEEP DEPRESSION (28-33 KT)
 CS: CYCLONIC STORM (34-47 KT)
 SCS: SEVERE CYCLONIC STORM (48-63KT)
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
 ESCS: EXTREMELY SEVERE CYCLONIC STORM (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

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OBSERVED AND FORECAST TRACK ALONG WITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH DEPRESSION OVER SOUTHEAST ADJOINING SOUTHWEST BAY OF BENGAL BASED ON 0000 UTC (0530 IST) OF 01ST DECEMBER 2023.



DATE/TIME IN UTC
 IST=UTC + 0530
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 D: DEPRESSION (17-27 KT)
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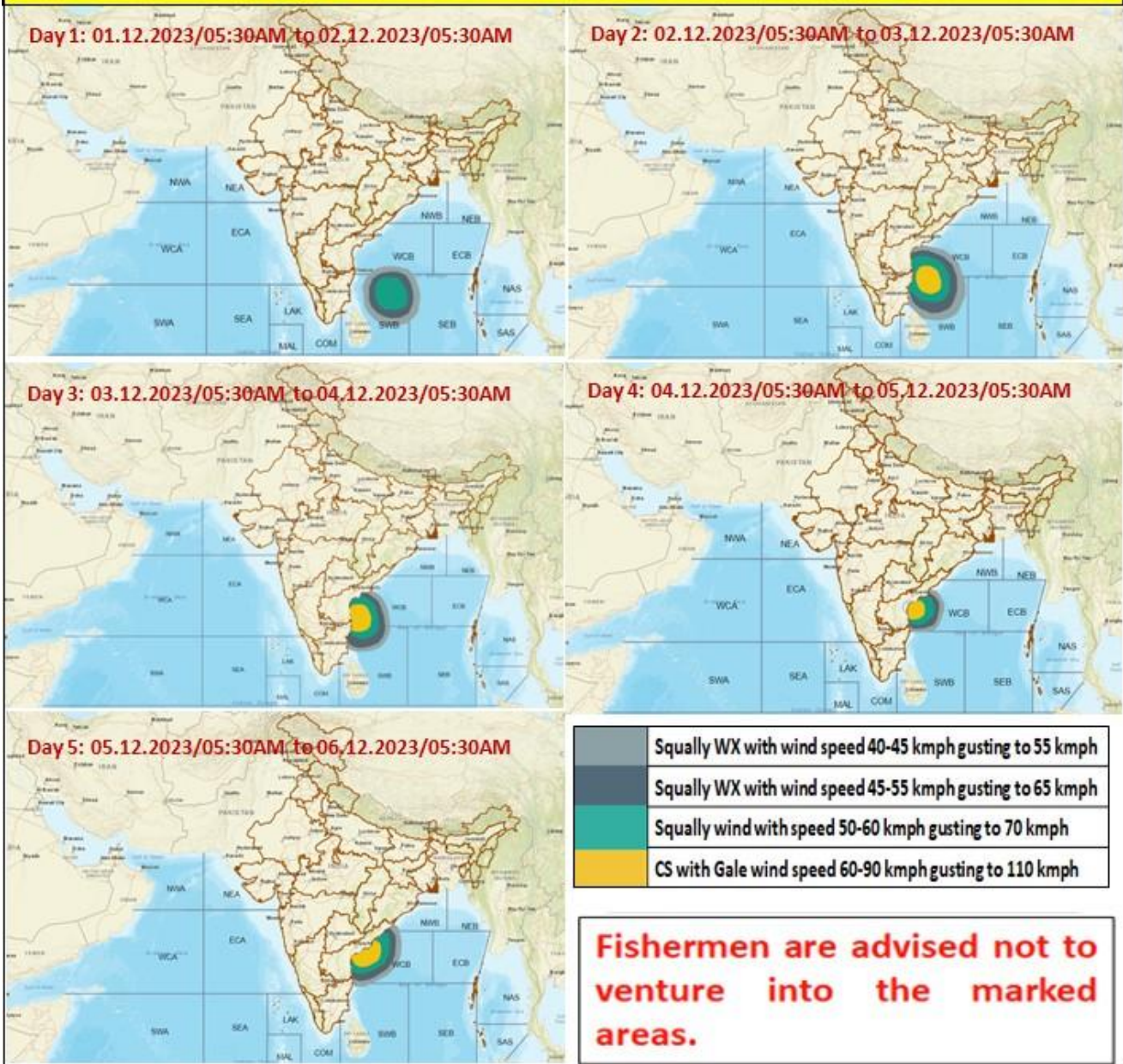
● LESS THAN 34 KT
 ○ 34-47 KT
 ○ ≥ 48 KT
 — OBSERVED TRACK
 — FORECAST TRACK
 — CONE OF UNCERTAINTY
 AREA OF MAXIMUM SUSTAINED WIND SPEED:
 — 28-33 KT (52-61 KMPH)
 — 34-49 KT (62-91 KMPH)
 — 50-63 KT (92-117 KMPH)
 — ≥ 64 KT (≥118 KMPH)

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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Fishermen warning graphics



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