



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI**  
**TROPICAL CYCLONE ADVISORY NO. 17**

**FROM: RSMC TROPICAL CYCLONES NEW DELHI DATED 09.12.2022**

**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. 17 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 2000 UTC OF 09.12.2022 BASED ON 1800 UTC OF 09.12.2022**

**SUBJECT: THE CYCLONIC STORM “MANDOUS” PRONOUNCED AS “MAN-DOUS” OVER SOUTHWEST BAY OF BENGAL (CYCLONE WARNING: NORTH TAMILNADU, PUDUCHERRY AND SOUTH ANDHRA PRADESH COASTS)**

THE CYCLONIC STORM “**MANDOUS**” PRONOUNCED AS “**MAN-DOUS**” OVER SOUTHWEST BAY OF BENGAL OFF NORTH TAMIL NADU AND PUDUCHERRY COASTS MOVED NORTHWESTWARDS WITH A SPEED OF 12 KMPH DURING PAST 06 HOURS AND LAY CENTERED AT 2330 HOURS IST OF YESTERDAY, THE 09<sup>TH</sup> DECEMBER, 2022 OVER SOUTHWEST BAY OF BENGAL CLOSE TO NORTH TAMIL NADU-PUDUCHERRY COASTS NEAR LATITUDE 12.5°N AND LONGITUDE 80.3°E, ABOUT 15 KM SOUTHEAST OF MAMALLAPURAM (MAHABALIPURAM) AND ABOUT 60 KM SOUTH-SOUTHEAST OF CHENNAI. **THE LANDFALL PROCESS CONTINUES AND WILL BE COMPLETED WITHIN A FEW HOURS.** THE CYCLONE IS BEING MONITORED BY DOPPLER WEATHER RADAR KARAIKAL AND CHENNAI.

IT IS VERY LIKELY TO MOVE NEARLY NORTHWESTWARDS AND CROSS NORTH TAMIL NADU-PUDUCHERRY COASTS AROUND MAMALLAPURAM (MAHABALIPURAM) AS A CYCLONIC STORM WITH A MAXIMUM SUSTAINED WIND SPEED OF 65-75 KMPH GUSTING TO 85 KMPH DURING NEXT 2 HOURS. THEREAFTER, IT WOULD MOVE WEST-NORTHWESTWARDS AND GRADUALLY WEAKEN INTO A DEEP DEPRESSION BY EARLY MORNING AND INTO A DEPRESSION BY NOON OF 10<sup>TH</sup> DECEMBER.

**FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:**

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
09.12.22/1800	12.5/80.3	65-75 GUSTING TO 85	CYCLONIC STORM
10.12.22/0000	12.7/80.0	55-65 GUSTING TO 75	DEEP DEPRESSION
10.12.22/0600	12.9/79.5	40-50 GUSTING TO 60	DEPRESSION
10.12.22/1200	13.1/79.0	25-35 GUSTING TO 45	LOW PRESSURE AREA

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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AS PER INSAT 3D IMAGERY, CURRENT INTENSITY IS T2.0/2.5 AND SHOWS CURVED BAND PATTERN. THE ASSOCIATED BROKEN LOW/MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LIES OVER SOUTHWEST ADJOINING WEST CENTRAL BAY OFF NORTH TAMIL NADU ADJOINING SOUTH ANDRA PRADESH COASTS AND NORTHEAST TAMIL NADU. MINIMUM CLOUD TOP TEMPERATURE (CTT) IS MINUS 93 DEG CEL.

THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 35 KNOTS GUSTING TO 45 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 997 HPA. SEA CONDITION IS HIGH OVER SOUTHWEST BAY OF BENGAL AND ROUGH TO VERY ROUGH OVER ADJOINING AREAS OF WEST CENTRAL BAY OF BENGAL AND GULF OF MANNAR. THE SYSTEM HAS SHOWED WEAKENING TREND DURING LAST 09 HOURS.

#### **REMARKS:**

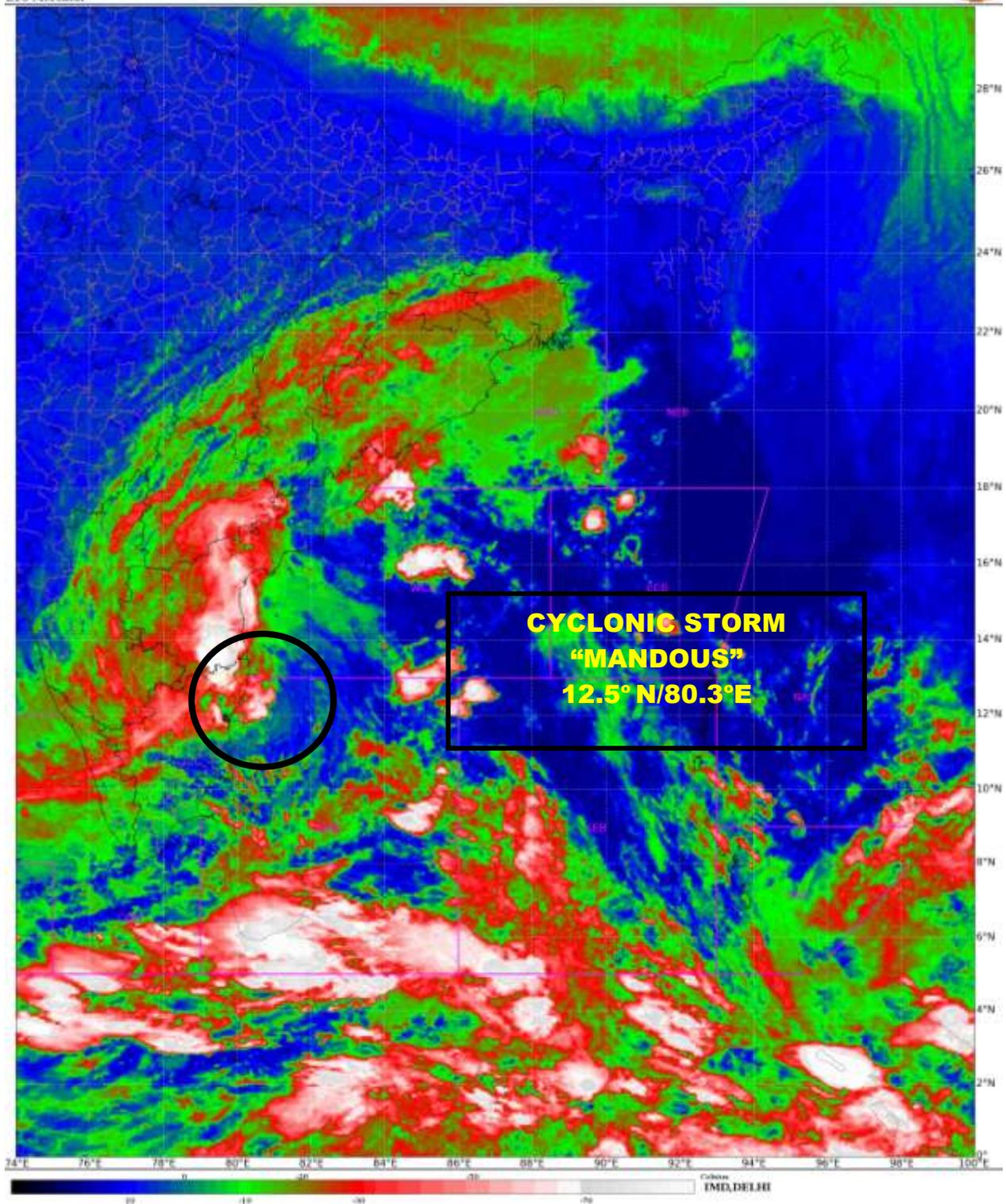
THE MADDEN JULIAN OSCILLATION (MJO) INDEX CURRENTLY LIES IN PHASE 3 AND WILL REMAIN THERE TILL 9<sup>TH</sup> DECEMBER. SEA SURFACE TEMPERATURE (SST) IS AROUND 27°C-28°C OVER SOUTHWEST AND CENTRAL BOB AND ALONG AND OFF NORTH TAMILNADU AND ADJOINING ANDHRA PRADESH COASTS. ALSO THE OCEAN HEAT CONTENT (OHC) IS 50-80 KJ/CM<sup>2</sup> OVER SOUTHWEST BOB AND LESS THAN 50 KJ/CM<sup>2</sup> OVER WESTCENTRAL BOB. THERE IS WARM AIR ADVECTION TO THE SYSTEM FROM THE SOUTHERN SECTOR WITH REDUCING TREND.

LOW LEVEL VORTICITY IS  $200 \times 10^{-6} \text{ S}^{-1}$  AROUND THE SYSTEM CENTER WITH PEAK TO THE SOUTH OF THE SYSTEM CENTER. LOW LEVEL CONVERGENCE IS AROUND  $20 \times 10^{-5} \text{ S}^{-1}$  AROUND THE SYSTEM CENTER AND UPPER LEVEL DIVERGENCE IS  $10 \times 10^{-5} \text{ S}^{-1}$  TO THE WEST OF THE SYSTEM CENTER.

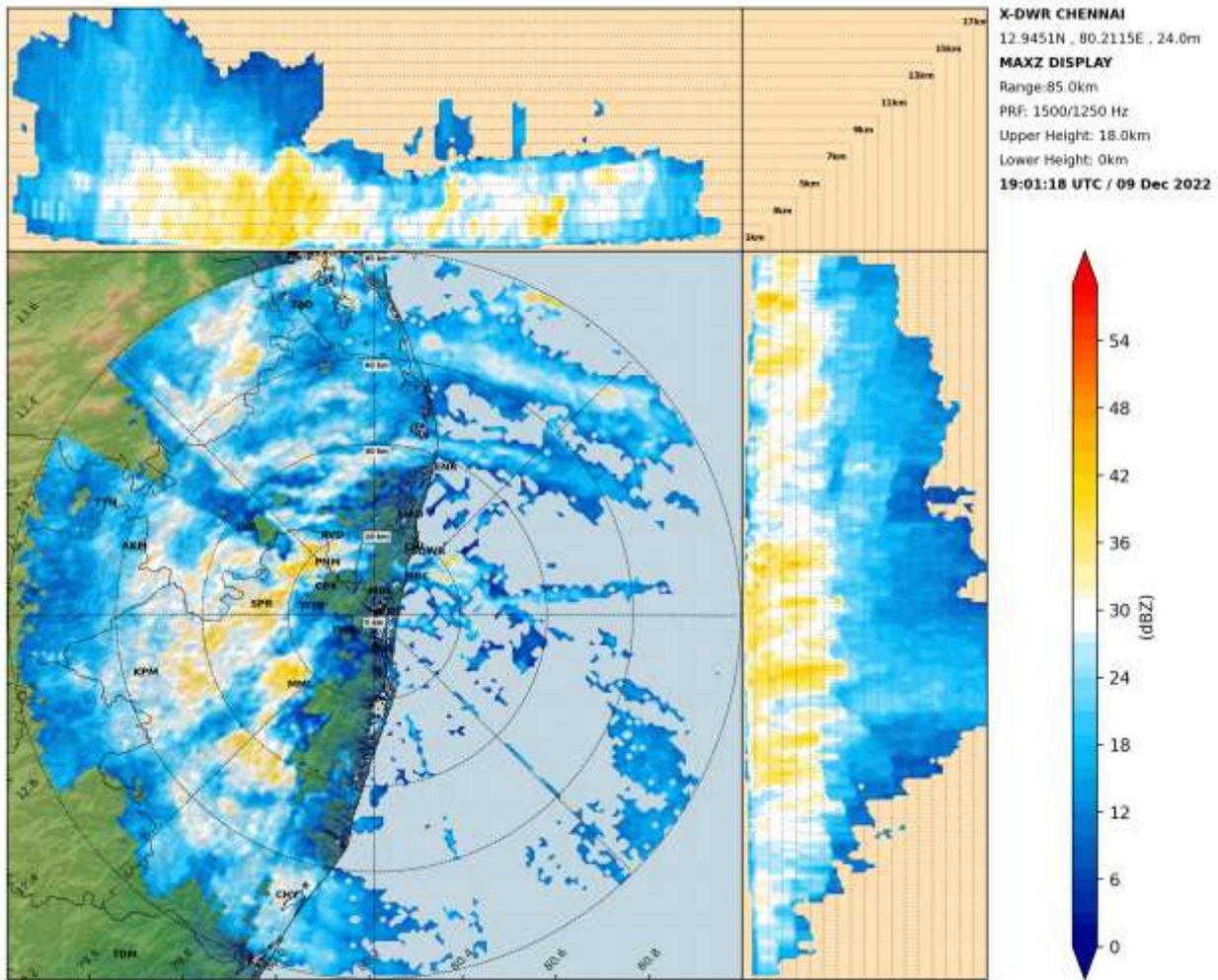
WIND SHEAR IS MODERATE TO HIGH (20-25 KNOTS) OVER & AROUND THE SYSTEM CENTER AND DECREASING ALONG THE PREDICTED TRACK. THE UPPER TROPOSPHERIC RIDGE RUNS ROUGHLY ALONG 17.0°N OVER THE BOB. THE SYSTEM LIES IN THE SOUTHERMOST PERIPHERY OF THE STEERING RIDGE IN ASSOCIATION WITH THE ANTI CYCLONIC CIRCULATION TO THE NORTHEAST OF MYANMAR. THE SYSTEM IS UNDER THE INFLUENCE OF RIDGE LINE AND IT IS VERY LIKELY TO MOVE NEARLY NORTHWESTWARDS AND CROSS NORTH TAMIL NADU-PUDUCHERRY COASTS AROUND MAMALLAPURAM (MAHABALIPURAM) AS A CYCLONIC STORM WITH A MAXIMUM SUSTAINED WIND SPEED OF 65-75 KMPH GUSTING TO 85 KMPH DURING NEXT 2 HOURS. THEREAFTER, IT WOULD MOVE WEST-NORTHWESTWARDS AND GRADUALLY WEAKEN INTO A DEEP DEPRESSION BY EARLY MORNING AND INTO A DEPRESSION BY NOON OF 10<sup>TH</sup> DECEMBER.

**R.K JENAMANI**

**SCIENTIST-F, RSMC, NEW DELHI**



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**Radar Image from Doppler Weather Radar Chennai of 1901 UTC of 9<sup>th</sup> December 2022.**



**OBSERVED AND FORECAST TRACK OF CYCLONIC STORM 'MANDOUS' OVER SOUTHWEST BAY OF BENGAL CLOSE TO NORTH TAMILNADU COAST BASED ON 1800 UTC OF 09<sup>th</sup> DECEMBER, 2022.**

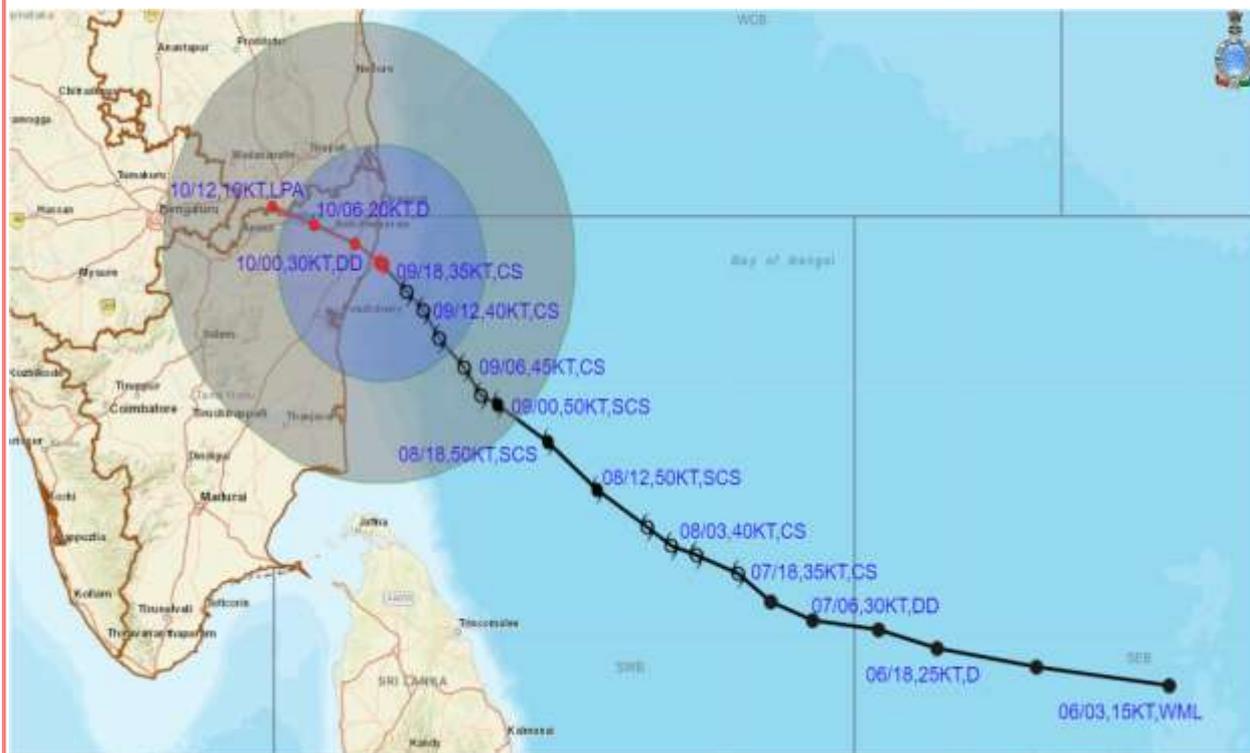


DATE/TIME IN UTC  
 IST=UTC + 0530  
 L: LOW PRESSURE AREA  
 WML: WELL MARKED LOW PRESSURE AREA  
 D: DEPRESSION (17-27 KT)  
 DD: DEEP DEPRESSION (28-33 KT)  
 CS: CYCLONIC STORM (34-47 KT)  
 SCS: SEVERE CYCLONIC STORM (48-63KT)  
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)  
 ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)  
 SuCS: SUPER CYCLONIC STORM ( $\geq$  120 KT)

- LESS THAN 34 KT
- 34-47 KT
- $\geq$  48 KT
- OBSERVED TRACK
- FORECAST TRACK
- CONE OF UNCERTAINTY



**OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF CYCLONIC STORM 'MANDOUS' OVER SOUTHWEST BAY OF BENGAL CLOSE TO NORTH TAMILNADU COAST BASED ON 1800 UTC OF 09<sup>th</sup> DECEMBER, 2022.**



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 (≥20 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)

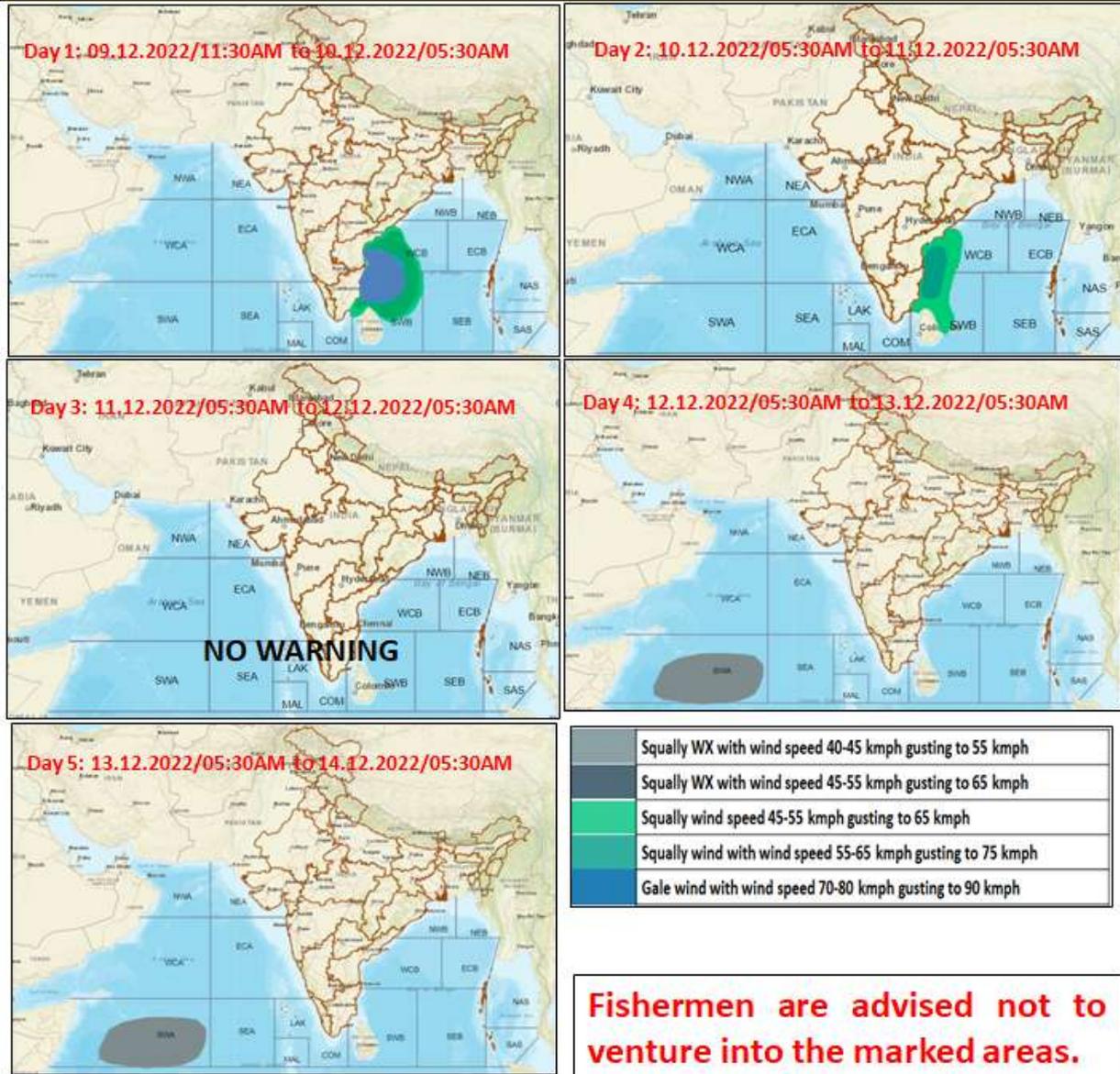
■ 50-63 KT (92-117 KMPH)

■ ≥ 64 KT (≥118 KMPH)

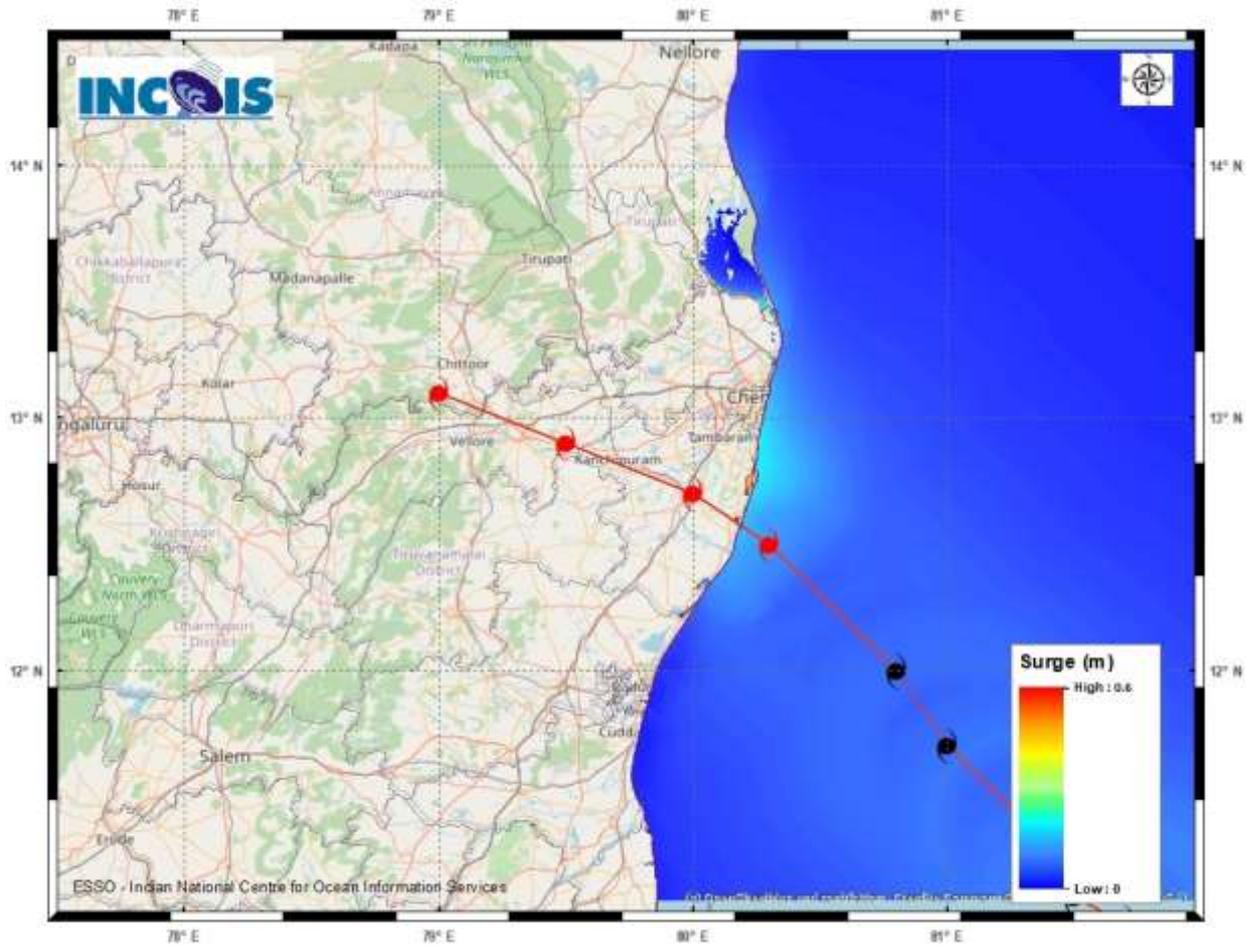
**IMPACT OVER THE SEA**

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

## Fishermen warning graphics



## 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	0.3-0.7	Upto 0.13