



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

**DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 22.10.2024**

**SPECIAL TROPICAL WEATHER OUTLOOK FOR THE NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR THE NEXT 168 HOURS ISSUED AT 0630 UTC OF 22.10.2024 BASED ON 0300 UTC OF 22.10.2024.**

**BAY OF BENGAL:**

THE DEPRESSION OVER EASTCENTRAL BAY OF BENGAL MOVED WEST-NORTHWESTWARDS WITH A SPEED OF 6 KMPH DURING PAST 3 HOURS AND LAY CENTRED AT 0300 UTC OF TODAY, THE 22ND OCTOBER, OVER THE SAME REGION NEAR LATITUDE 15.5° N AND LONGITUDE 91.0°E, ABOUT 700 KM SOUTHEAST OF PARADIP (42976, ODISHA), 750 KM SOUTH-SOUTHEAST OF SAGAR ISLAND (42903, WEST BENGAL) AND 730 KM SOUTH-SOUTHEAST OF KHEPUPARA (41984, BANGLADESH).

IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND INTENSIFY INTO A CYCLONIC STORM BY 23RD OCTOBER, 2024 OVER EASTCENTRAL BAY OF BENGAL. THEREAFTER, CONTINUING TO MOVE NORTHWESTWARDS, IT IS VERY LIKELY TO INTENSIFY INTO A SEVERE CYCLONIC STORM OVER NORTHWEST BAY OF BENGAL AROUND 0300 UTC OF 24TH AND CROSS NORTH ODISHA AND WEST BENGAL COASTS BETWEEN PURI AND SAGAR ISLAND 1800 UTC OF 24TH AND 0000 UTC OF 25TH OCTOBER, 2024 AS A SEVERE CYCLONIC STORM WITH A WIND SPEED OF 100-110 KMPH GUSTING 120 KMPH.

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
22.10.24/0300	15.5/91.0	40-50 gusting to 60	Depression
22.10.24/0600	15.6/90.7	45-55 gusting to 65	Depression
22.10.24/1200	15.8/90.2	50-60 gusting to 70	Deep Depression
22.10.24/1800	16.1/89.7	55-65 gusting to 75	Deep Depression
23.10.24/0000	16.5/89.2	60-70 gusting to 80	Cyclonic Storm
23.10.24/1200	17.4/88.4	70-80 gusting to 90	Cyclonic Storm
24.10.24/0000	18.7/87.8	85-95 gusting to 105	Severe Cyclonic Storm
24.10.24/1200	20.0/87.5	100-110 gusting to 120	Severe Cyclonic Storm
25.10.24/0000	21.0/86.8	95-105 gusting to 115	Severe Cyclonic Storm
25.10.24/1200	21.5/85.8	70-80 gusting 90	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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BANDING FEATURES ARE APPEARING IN CLOUD ORGANISATION. THE INTENSITY IS CHARACTERISED AS T1.5. SCATTERED TO BROKEN LOW/MED CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER EAST BAY OF BENGAL, ANDAMAN ISLANDS, NORTH ANDAMAN SEA & NEIGHBOURHOOD (MINIMUM CLOUD TOP TEMPERATURE MINUS 80-93 DEG CEL).

ESTIMATED CENTRAL PRESSURE IS 1004 HPA AND MAXIMUM SUSTAINED WIND SPEED IS 20 KNOTS GUSTING TO 30 KNOTS. SEA CONDITION IS ROUGH TO VERY ROUGH OVER EASTCENTRAL BAY OF BENGAL.

#### **UNDER IT'S INFLUENCE:**

#### **(II) WIND WARNING:**

**EASTCENTRAL BAY OF BENGAL:** SQUALLY WIND SPEED REACHING 40-50 GUSTING TO 60 KMPH IS VERY LIKELY ON 22<sup>ND</sup> OCTOBER, 50-60 GUSTING TO 70 KMPH BY 22<sup>ND</sup>/ 1800 UTC, 70-90 KMPH GUSTING TO 100 KMPH FROM 23<sup>RD</sup>/ 1200 UTC TILL 24<sup>TH</sup>/ 0000 UTC.

**ADJOINING AREAS OF WESTCENTRAL BAY OF BENGAL:** SQUALLY WIND SPEED REACHING 40-50 GUSTING TO 60 KMPH IS VERY LIKELY TO COMMENCE FROM 22<sup>ND</sup>/ 1200 UTC, 70-80 GUSTING TO 90 KMPH FROM 23<sup>RD</sup>/ 0000 UTC TO 24<sup>TH</sup>/ 0600 UTC.

**NORTHWEST BAY OF BENGAL:** SQUALLY WIND SPEED REACHING 40-50 GUSTING TO 60 KMPH IS VERY LIKELY TO COMMENCE FROM 23<sup>RD</sup>/ 0000 UTC. IT WOULD GRADUALLY INCREASE BECOMING GALE WIND SPEED REACHING 70-90 GUSTING TO 100 KMPH FROM 23<sup>RD</sup>/ 1800 TO 24<sup>TH</sup>/ 0000 UTC AND 100-110 KMPH GUSTING TO 120 KMPH FROM 24<sup>TH</sup> OCT/ 1200 UTC TO 25<sup>TH</sup> OCT/ 0000 UTC AND DECREASE GRADUALLY THEREAFTER.

**ADJOINING AREAS OF NORTHEAST BAY OF BENGAL:** SQUALLY WIND SPEED REACHING 40-50 GUSTING TO 60 KMPH IS VERY LIKELY TO COMMENCE FROM 23<sup>RD</sup>/ 1800 UTC TILL 25<sup>TH</sup>/ 0000 UTC AND DECREASE GRADUALLY THEREAFTER.

**ALONG & OFF ODISHA-WEST BENGAL COASTS:** SQUALLY WIND SPEED REACHING 40-50 GUSTING TO 60 KMPH IS VERY LIKELY TO COMMENCE FROM 23<sup>RD</sup> OCT/1200 UTC. IT WOULD GRADUALLY INCREASE BECOMING GALE WIND SPEED REACHING 60-70 KMPH GUSTING TO 80 KMPH FROM 24<sup>TH</sup>/ 0000 UTC AND REACHING 100-110 KMPH GUSTING TO 120 KMPH FROM 24<sup>TH</sup>/ 1200 UTC TILL 25<sup>TH</sup> OCT/ 0000 UTC AND DECREASE GRADUALLY THEREAFTER.

#### **(III) SEA CONDITION:**

**EASTCENTRAL BAY OF BENGAL:** SEA CONDITION IS LIKELY TO BE ROUGH TO VERY ROUGH ON 22<sup>ND</sup> OCTOBER, BECOMING VERY ROUGH TO HIGH FROM 23<sup>RD</sup>/ 0000 UTC TILL 24<sup>TH</sup> OCTOBER/0000 UTC.

**ADJOINING AREAS OF WESTCENTRAL BAY OF BENGAL:** SEA CONDITION IS LIKELY TO BE ROUGH TO VERY ROUGH ON 23<sup>RD</sup> AND 24<sup>TH</sup> OCTOBER.

**NORTHWEST BAY OF BENGAL:** SEA CONDITION IS LIKELY TO BE ROUGH TO VERY ROUGH FROM 23<sup>RD</sup>/ 0000 UTC AND WOULD BECOME HIGH TO VERY HIGH FROM 23<sup>RD</sup>/ 1800 UTC TILL 25<sup>TH</sup>/ 0000 UTC AND IMPROVE GRADUALLY THEREAFTER.

**ADJOINING AREAS OF NORTHEAST BAY OF BENGAL:** SEA CONDITION IS LIKELY TO BE **ROUGH TO VERY ROUGH** FROM 23<sup>RD</sup>/ 1800 UTC TILL 25<sup>TH</sup>/ 0000 UTC AND IMPROVE GRADUALLY THEREAFTER.

**ALONG & OFF ODISHA-WEST BENGAL COASTS:** SEA CONDITION IS LIKELY TO BE **ROUGH TO VERY ROUGH** FROM 23<sup>RD</sup>/ 1200 UTC AND WOULD BECOME **HIGH TO VERY HIGH** FROM 24<sup>TH</sup> OCTOBER/0000 UTC TO 25<sup>TH</sup> OCT/ 0600 UTC AND IMPROVE GRADUALLY THEREAFTER.

**(IV) FISHERMEN WARNING:**

FISHERMEN ARE ADVISED NOT TO VENTURE INTO:

- EASTCENTRAL BAY OF BENGAL DURING 22<sup>ND</sup>-24<sup>TH</sup> OCTOBER.
- **ADJOINING AREAS OF WESTCENTRAL BAY OF BENGAL ON 23<sup>RD</sup> AND 24<sup>TH</sup> OCT.**
- **NORTH BAY OF BENGAL AND ALONG & OFF ODISHA, WEST BENGAL AND BANGLADESH COASTS DURING 23<sup>RD</sup> TO 25<sup>TH</sup> OCTOBER.**

FISHERMEN OUT AT SEA ARE ADVISED TO RETURN TO COASTS BY 22<sup>ND</sup> OCT.

**ARABIAN SEA:**

YESTERDAY'S **LOW PRESSURE AREA** OVER WESTCENTRAL ARABIAN SEA PERSISTED OVER THE SAME REGION AT 0300 UTC OF TODAY, THE 22<sup>ND</sup> OCTOBER, 2024. IT IS LIKELY TO MOVE WEST-NORTHWESTWARDSS TOWARDS YEMEN-OMAN COASTS AND WEAKEN FURTHER DURING NEXT 12 HOURS.

**SQUALLY WEATHER WIND SPEED REACHING 20-30 GUSTING TO 40 KMPH WITH MODERATE SEA CONDITION IS VERY LIKELY OVER WESTCENTRAL ARABIAN SEA DURING NEXT 24 HOURS AND IMPROVE THEREAFTER.**

SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER EASTCENTRAL ADJOINING SOUTHEAST ARABIAN SEA OFF SOUTH MAHARASHTRA-GOJA-KARNATAKA-KERALA COASTS AND WESTCENTRAL BAY OF BENGAL (MINIMUM CLOUD TOP TEMPERATURE IS MINUS 70-80 DEGREE CELSIUS). SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER GULF OF CAMBAY REST SOUTHEAST ARABIAN SEA, LAKSHADWEEP ISLAND AREA AND COMORIN AREA.

**\*PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION) DURING NEXT 168 HRS:**

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	NIL	NIL	NIL	NIL	NIL	NIL

**\*NOTE: EVERY 24HR FORECAST IS VALID UPTO 0300 UTC (0830 IST) OF NEXT DAY**

**REMARKS:**

THE MADDEN-JULIAN OSCILLATION (MJO) IS CURRENTLY IN PHASE 5, WITH AMPLITUDE MORE THAN 1, AND IS EXPECTED TO MOVE ACROSS PHASE 5 DURING NEXT 7 DAYS WITH FURTHER INCREASING AMPLITUDE. THUS, MJO WOULD SUPPORT ENHANCEMENT OF CONVECTIVE ACTIVITY OVER BAY OF BENGAL DURING NEXT 5 DAYS.

THE GUIDANCE FROM NCICS BASED FORECAST OVER BOB INDICATES WESTERLY WINDS (1-3 MPS) OVER SOUTH BOB AND ADJOINING EQUATORIAL INDIAN OCEAN AND

EASTERLY WINDS (1-3 MPS) OVER WESTCENTRAL BOB. EASTWARD MOVING MJO & KELVIN WAVES ALONG WITH EQUATORIAL ROSSBY WAVES ARE ALSO LIKELY OVER THE CENTRAL BAY OF BENGAL DURING NEXT 5-7 DAYS. THESE FEATURES INDICATE HIGHLY FAVOURABLE ENVIRONMENT FOR CYCLOGENESIS (FORMATION OF DEPRESSION) OVER THE CENTRAL PARTS OF THE BAY OF BENGAL.

### **BAY OF BENGAL (BOB)**

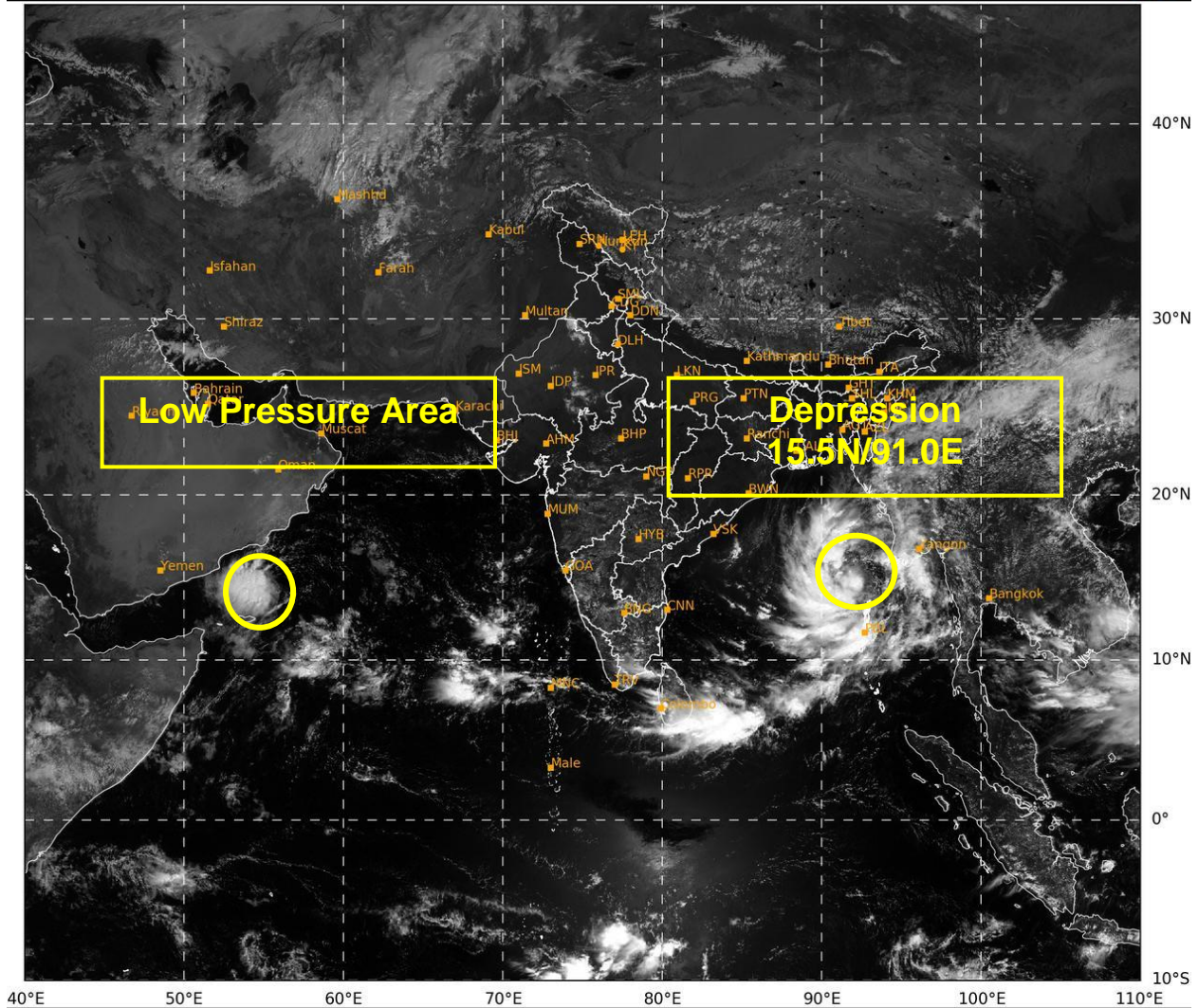
THE SEA SURFACE TEMPERATURE (SST) IS 30°C OVER CENTRAL & NORTH BOB. THE TROPICAL CYCLONE HEAT POTENTIAL (TCHP) IS >100 KJ/CM<sup>2</sup> OVER WESTCENTRAL BOB, <80 KJ/CM<sup>2</sup> OVER NORTHWEST. A ZONE OF POSITIVE CYCLONIC VORTICITY OF 100X 10<sup>-5</sup> TO THE SOUTH OF SYSTEM CENTRE OVER EASTCENTRAL BAY OF BENGAL WITH VERTICAL EXTENSION UPTO 500 HPA LEVEL. POSITIVE LOW-LEVEL CONVERGENCE IS 10 X10<sup>-5</sup>S<sup>-1</sup> TO THE SOUTH OF SYSTEM AREA. POSITIVE UPPER-LEVEL DIVERGENCE IS 20X10<sup>-5</sup>S<sup>-1</sup> TO THE SOUTH OF SYSTEM AREA. VERTICAL WIND SHEAR (VWS) IS LOW TO MODERATE OVER CENTRAL BOB AND HIGH OVER NORTH BOB. TOTAL PRECIPITABLE WATER IMAGERY INDICATES WARM MOIST AIR INCURSION INTO THE CORE OF SYSTEM.

BASED ON INITIAL CONDITIONS OF 0000 UTC, MOST OF THE NWP MODELS ARE INDICATING CROSSING OVER NORTH ODISHA-WEST BENGAL COASTS. HOWEVER, NCUM (R) IS INDICATING CROSSING OVER SOUTH ODISHA COAST. THERE IS ALSO DIVERGENCE AMONG VARIOUS MODELS WRT PEAK INTENSIFICATION WITH IMD GFS & NCUM INDICATING INTENSIFICATION UPTO 90 KTS. NCUM, NCEP, CMC & IMD MME ARE INDICATING INTENSIFICATION UPTO 50 KT AND ECMWF IS INDICATING UPTO 35 KT.

### **ARABIAN SEA**

MOST OF THE MODELS ARE INDICATING NEARLY WESTWARDS MOVEMENT AND WEAKENING OF THE LOW PRESSURE AREA OVER WESTCENTRAL ARABIAN BY 23/00 UTC.

(M. SHARMA)  
HEAD RSMC



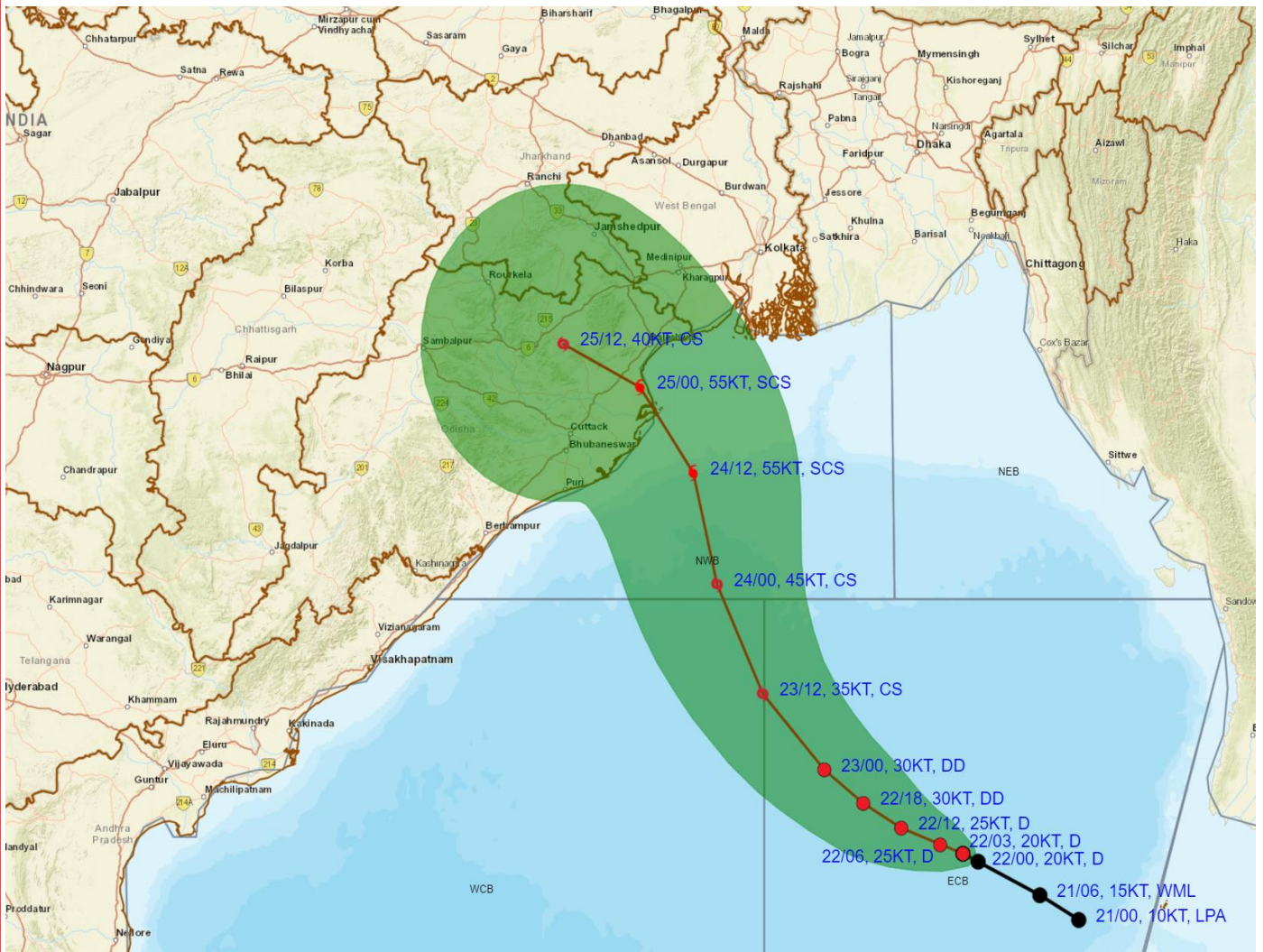
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IMD, DELHI



# OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF DEPRESSION OVER EASTCENTRAL BAY OF BENGAL BASED ON 0300 UTC (0830 Hrs. IST) OF 22ND OCTOBER 2024



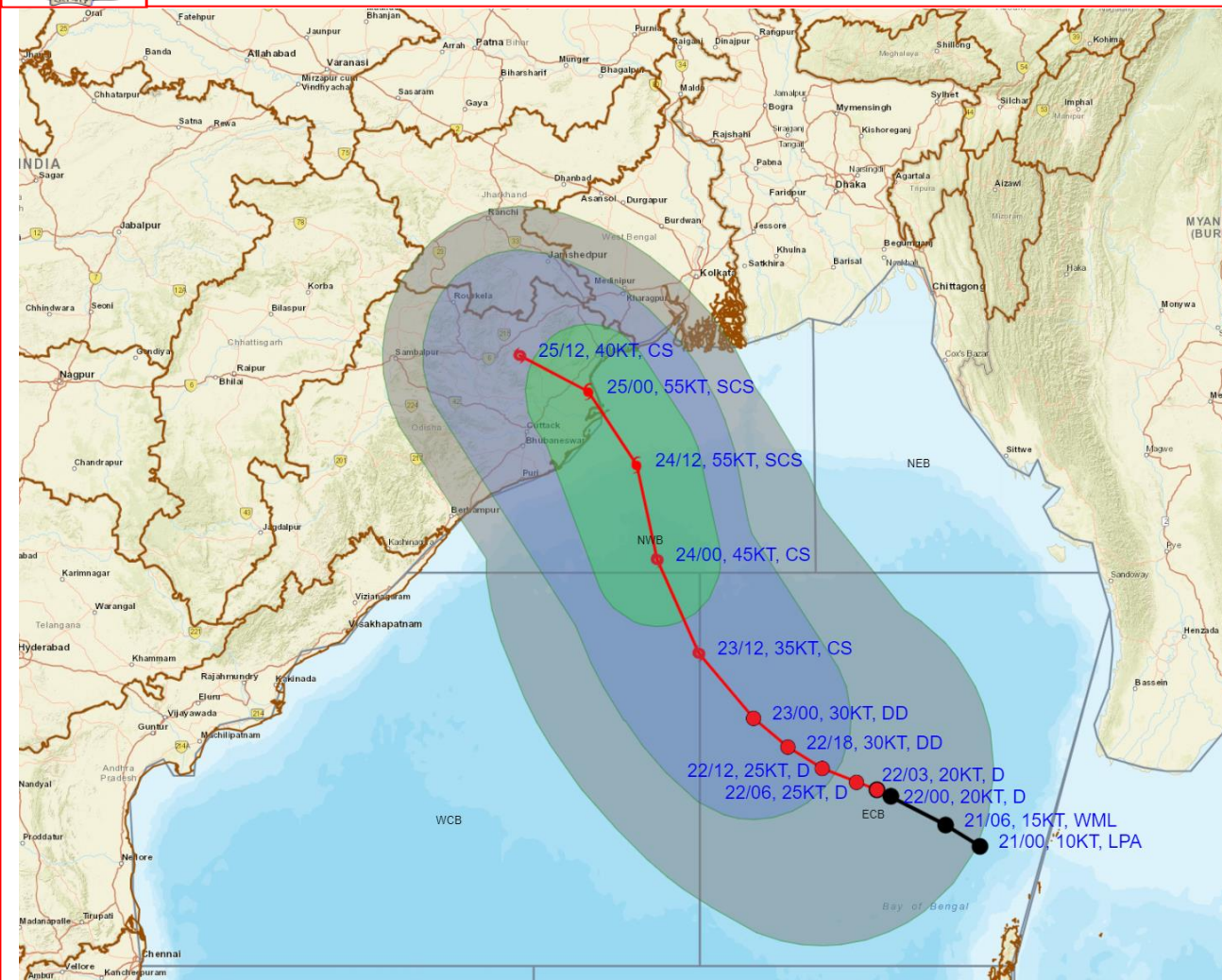
DATE/TIME	: IN UTC
IST	: UTC + 0530
KT	: NAUTICAL MILE S/HOUR = 1.85 KM/HOUR
LPA	: LOW PRESSURE AREA
WML	: WELL MARKED LOW PRESSURE AREA
D	: DEPRESSION (17-27 KT)
DD	: DEEP DEPRESSION (28-33 KT)
CS	: CYCLONIC STORM (34-47 KT)
SCS	: SEVERE CYCLONIC STORM (48-63 KT)
VSCS	: VERY SEVERE CYCLONIC STORM (64-89 KT)
E SCS	: 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

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 DEPRESSION OVER EASTCENTRAL BAY OF BENGAL BASED ON 0300 UTC (0830 Hrs. IST) OF 22ND OCTOBER 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 ( $\geq 120$  KT)

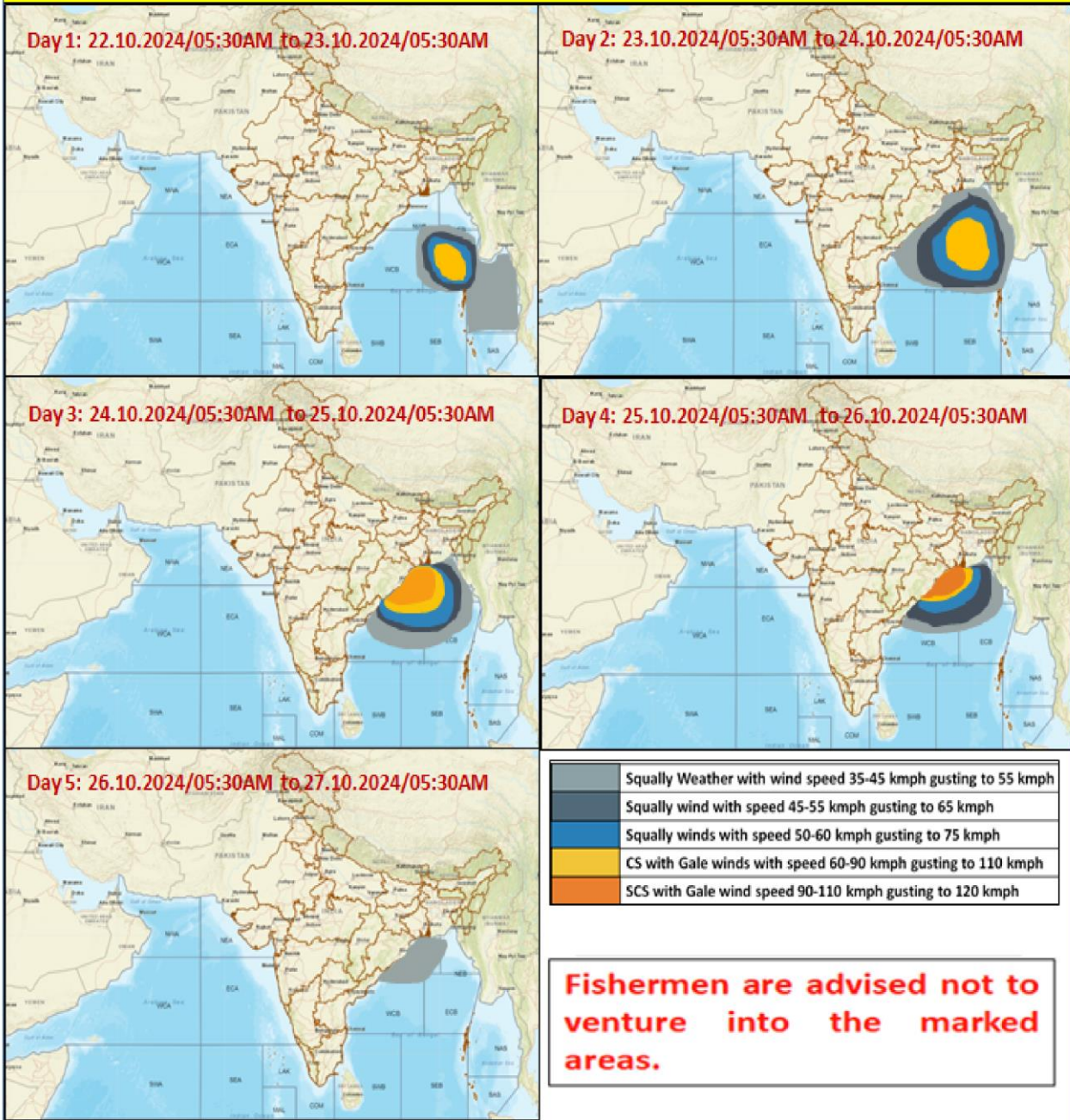
● LESS THAN 34 KT  
 ○ 34-47 KT  
 ○  $\geq 48$  KT  
 — OBSERVED TRACK  
 — FORECAST TRACK  
 ● CONE OF UNCERTAINTY  
**AREA OF MAXIMUM SUSTAINED WIND SPEED:**  
 ■ 28-33 KT (52-61 KMPH)  
 ■ 34-49 KT (62-91 KMPH)  
 ■ 50-63 KT (92-117 KMPH)  
 ■  $\geq 64$  KT ( $\geq 118$  KMPH)

### 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
$\geq 64$ ( $\geq 118$ )	Phenomenal	Total suspension of fishing operations

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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### Fishermen Warning Graphics



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