



**India Meteorological Department  
(Ministry of Earth Sciences)**

**NATIONAL BULLETIN NO. 11 (ARB/03/2023)**

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**FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)**

**TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23093750)**

**CONTROL ROOM NDMA (FAX.NO. 26701729)**

**CABINET SECRETARIAT (FAX.NO.23012284, 23018638)**

**PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)**

**SECRETARY, MOES (FAX NO. 24629777)**

**H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)**

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**DIRECTOR GENERAL, AIR (23421105, 23421219)**

**PIB MOES (FAX NO. 23389042)**

**UNI (FAX NO. 23355841)**

**D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)**

**DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)**

**ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0413-262184)**

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**CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)**

**CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)**

**CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)**

**CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)**

**CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)**

**CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)**

**CHIEF SECRETARY, ODISHA (FAX NO. 0674-2536660)**

**CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)**

**CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029, 08645-246600)**

**CHIEF SECRETARY, TAMIL NADU (FAX NO 044-25672304)**

**CHIEF SECRETARY, PUDUCHERRY (FAX NO 0413-2334145)**

**CHIEF SECRETARY, GOVT. OF TRIPURA (FAX NO. 0381-2414013, 2413200)**

**CHIEF SECRETARY, GOVT. OF MIZORAM (FAX NO. 0389-2322745, 2320588)**

**CHIEF SECRETARY, GOVT. OF MANIPUR (FAX NO. 0385-2452629)**

**CHIEF SECRETARY, GOVT. OF NAGALAND (FAX NO. 0370-2270057)**

**ADMINISTRATOR, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)**

**Sub: (A) Very Severe Cyclonic Storm "Tej" (pronounced as Tej) over southwest Arabian Sea**

**(B) Well Marked Low pressure Area over westcentral and adjoining south Bay of Bengal concentrated into a Depression over westcentral Bay of Bengal**

**(A) Very Severe Cyclonic Storm "Tej" (pronounced as Tej) over southwest Arabian Sea**

The Very Severe Cyclonic Storm "Tej" (pronounced as Tej) over southwest Arabian Sea moved north-westwards with a speed of 20 kmph during past 6 hours, and lay centered at 2330 hours IST of 21<sup>st</sup> October over the same region, near latitude 11.3°N and longitude 56.6°E about 330 km east-southeast of Socotra (Yemen), 690 km south-southeast of Salalah (Oman) and 720 km southeast of Al Ghaidah (Yemen).

It is very likely to intensify further into an Extremely Severe Cyclonic Storm in the forenoon of 22<sup>nd</sup> October. It is very likely to move northwestwards till 24<sup>th</sup> morning & then north-northwestwards. It is likely to cross Yemen-Oman coasts between Al Ghaidah (Yemen) & Salalah (Oman) around evening of 24<sup>th</sup> October.

**Forecast track and intensity are given below:**

<b>Date/Time(IST)</b>	<b>Position (Lat. °N/ long. °E)</b>	<b>Maximum sustained surface wind speed (Kmph)</b>	<b>Category of cyclonic disturbance</b>
21.10.23/2330	11.3/56.6	135-145 gusting to 155	Very Severe Cyclonic Storm
22.10.23/0530	11.8/56.1	150-160 gusting to 175	Very Severe Cyclonic Storm
22.10.23/1130	12.3/55.6	165-175 gusting to 195	Extremely Severe Cyclonic Storm
22.10.23/1730	12.8/55.1	180-190 gusting to 210	Extremely Severe Cyclonic Storm
22.10.23/2330	13.5/54.4	180-190 gusting to 210	Extremely Severe Cyclonic Storm
23.10.23/1130	14.3/53.7	150-160 gusting to 175	Very Severe Cyclonic Storm
23.10.23/2330	15.0/53.1	135-145 gusting to 155	Very Severe Cyclonic Storm
24.10.23/1130	15.7/52.6	105-115 gusting to 125	Severe Cyclonic Storm
24.10.23/2330	16.8/52.1	90-100 gusting to 110	Cyclonic Storm
25.10.23/1130	17.7/51.7	50-60 gusting to 70	Depression

**Warnings:**

**(i) Wind warning (warning graphics enclosed):**

• **Southwest Arabian Sea:**

**Gale wind** speed reaching **135-145 kmph gusting to 155 kmph** is prevailing and likely to increase gradually becoming **150-160 kmph gusting to 175 kmph** by morning of 22<sup>nd</sup> October. Thereafter, it is likely to decrease gradually becoming **Gale wind** speed reaching **90-100 kmph gusting to 110 kmph** by morning of 23<sup>rd</sup> and **Squally wind** speed reaching **50-60 kmph gusting to 70 kmph** by morning of 24<sup>th</sup> October. It would decrease gradually thereafter.

• **Westcentral Arabian Sea:**

**Gale wind** speed reaching **90-100 kmph gusting to 110 kmph** is prevailing and likely to increase gradually becoming **Gale wind speed reaching 150-160 kmph gusting to 175 kmph** in the morning of 22<sup>nd</sup>, **180-190 kmph gusting to 210 kmph** in the evening of 22<sup>nd</sup> till morning of 23<sup>rd</sup> October. Thereafter, it is likely to decrease gradually from evening of 23<sup>rd</sup> October becoming **Gale wind speed reaching 125-135 kmph gusting to 150 kmph** by 24<sup>th</sup> morning and **90-100 kmph gusting to 110 kmph** on 25<sup>th</sup> morning. It would decrease rapidly after the landfall becoming **Squally wind** speed reaching **40-50 kmph gusting to 60 kmph** in the evening of 25<sup>th</sup> October.

**(ii) Sea Condition**

• **Southwest Arabian Sea:**

**Phenomenal** sea condition is prevailing and will continue till 23<sup>rd</sup> October. It is likely to improve gradually becoming **very high** from 24<sup>th</sup> morning and continue till 25<sup>th</sup> morning. Thereafter, it would improve gradually.

• **Westcentral Arabian Sea:**

**Phenomenal** sea condition is prevailing and will continue till evening of 24<sup>th</sup> October. It would improve gradually thereafter becoming **very high to high** from 24<sup>th</sup> night. Thereafter, it would improve gradually.

**(iii) Fishermen Warning (Graphics attached):**

Fishermen are advised not to venture into

- ❖ **Southwest Arabian Sea** till 25<sup>th</sup> October.
- ❖ **Westcentral Arabian Sea** till night of 25<sup>th</sup> October.
- ❖ Those out at sea are advised to return to coast.

## **(B) Well Marked Low pressure Area concentrated into a Depression over westcentral Bay of Bengal**

The well marked low pressure area over westcentral and adjoining south Bay of Bengal moved slowly northwestwards concentrated into a Depression and lay centered at 2330 hours IST of 21<sup>st</sup> October over westcentral Bay of Bengal, near latitude 14.7°N and longitude 86.4°E about 620 km south of Paradip (Odisha), 780 km south of Digha (West Bengal), and 900 km south-southwest of Khepupara (Bangladesh).

It is likely to further intensify into a deep depression during next 24 hours. It is likely to move northwestwards during next 12 hours, then recurve and move north-northeastwards during subsequent 3 days towards Bangladesh and adjoining West Bengal coasts.

**Forecast track and intensity are given below:**

<b>Date/Time(IST)</b>	<b>Position (Lat. °N/ long. °E)</b>	<b>Maximum sustained surface wind speed (Kmph)</b>	<b>Category of cyclonic disturbance</b>
21.10.23/2330	14.7/86.4	40-50 gusting to 60	Depression
22.10.23/1130	15.1/85.8	40-50 gusting to 60	Depression
22.10.23/2330	15.6/85.6	50-60 gusting to 70	Deep Depression
23.10.23/1130	16.5/85.9	50-60 gusting to 70	Deep Depression
23.10.23/2330	17.8/86.6	60-70 gusting to 80	Cyclonic Storm
24.10.23/1130	19.0/87.5	60-70 gusting to 80	Cyclonic Storm
24.10.23/2330	19.9/88.4	60-70 gusting to 80	Cyclonic Storm

### **Warnings:**

#### **(i) Rainfall Warning**

**Nagaland, Manipur, Mizoram & Tripura:** Light to moderate rainfall at most places with isolated heavy rainfall is likely on 24<sup>th</sup> and 25<sup>th</sup> October.

**Coastal Districts of Odisha:** Light to moderate rainfall at a few places is likely on 23<sup>rd</sup> and at many places on 24<sup>th</sup> & 25<sup>th</sup> October.

**Coastal Districts of West Bengal:** Light to moderate rainfall at many places is likely on 24<sup>th</sup> and 25<sup>th</sup> October.

#### **(ii) Wind warning (warning graphics enclosed):**

- **Westcentral Bay of Bengal:** Squally wind speed reaching **45-55 kmph gusting to 65 kmph** is prevailing and likely to increase gradually becoming **50-60 kmph gusting to 70 kmph** from morning of 22<sup>nd</sup> till 25<sup>th</sup> October. It is likely to decrease gradually thereafter.
- **Adjoining eastcentral & southeast Bay of Bengal:** Squally wind speed reaching **45-55 kmph gusting to 65 kmph** is prevailing near the system and likely to become **50-60 kmph gusting to 70 kmph** from morning of 22<sup>nd</sup> till 23<sup>rd</sup> October. It is likely to decrease gradually thereafter.
- **North Bay of Bengal and along & off Odisha, West Bengal and Bangladesh coasts:** Squally wind speed reaching **60-70 kmph gusting to 80 kmph** is likely to prevail from 24<sup>th</sup> to 26<sup>th</sup> October.

#### **(iii) Sea Condition**

- **Westcentral Bay of Bengal:** Rough to very rough sea condition is prevailing and will continue till 25<sup>th</sup> October. It is likely to improve gradually thereafter.
- **Adjoining eastcentral Bay of Bengal:** Moderate to rough sea condition is prevailing and likely till 24<sup>th</sup> October. It is likely to improve gradually thereafter.
- **Southwest Bay of Bengal:** Moderate to rough sea condition is prevailing and likely till 22<sup>nd</sup> October. It is likely to improve gradually thereafter.

- 
- **North Bay of Bengal and along & off Odisha, West Bengal and Bangladesh coasts:**  
Rough to very rough sea condition is likely from 24<sup>th</sup> to 26<sup>th</sup> October.

**(iv) Fishermen Warning (Graphics attached):**

Fishermen are advised not to venture into

- ❖ **Westcentral Bay of Bengal** till 25<sup>th</sup> October.
- ❖ **Adjoining eastcentral & southeast Bay of Bengal** till 23<sup>rd</sup> October.
- ❖ **North Bay of Bengal and along & off Odisha, West Bengal and Bangladesh coasts** from 24<sup>th</sup> to 26<sup>th</sup> October.

Those out at sea are advised to return to coast.

**Both the systems are under continuous surveillance and the next bulletin will be issued at 0530 hours IST of 22<sup>nd</sup> October, 2023.**

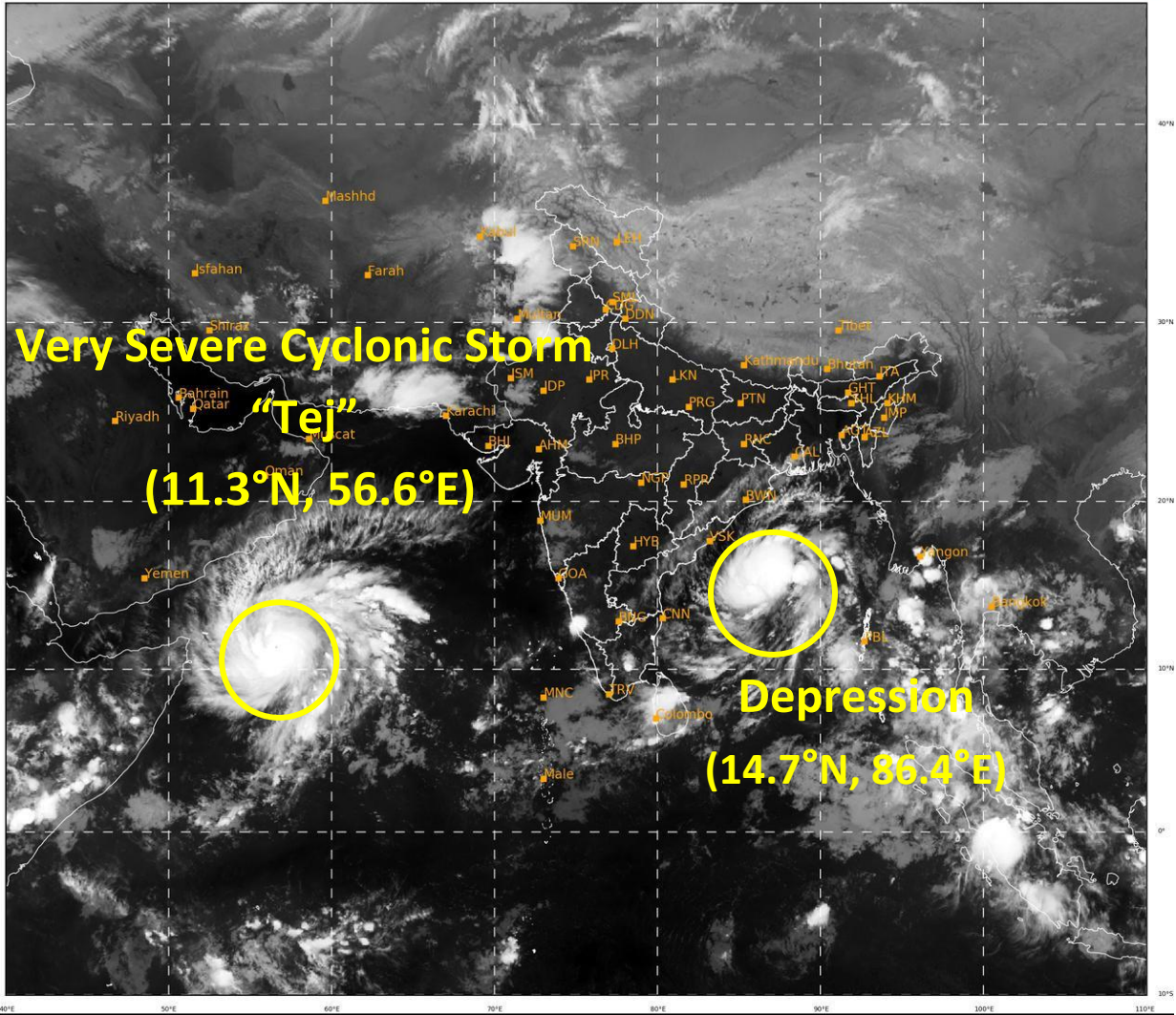
**(S. P. Singh)**

**Scientist C, Cyclone Warning, New Delhi**

*Copy to: ACWC Mumbai/ ACWC Chennai/ ACWC Kolkata/CWC Ahmedabad/CWC Bhubaneswar/CWC Vishakhapatnam/CWC Thiruvananthapuram/MC Goa*

**Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%**

**Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.**



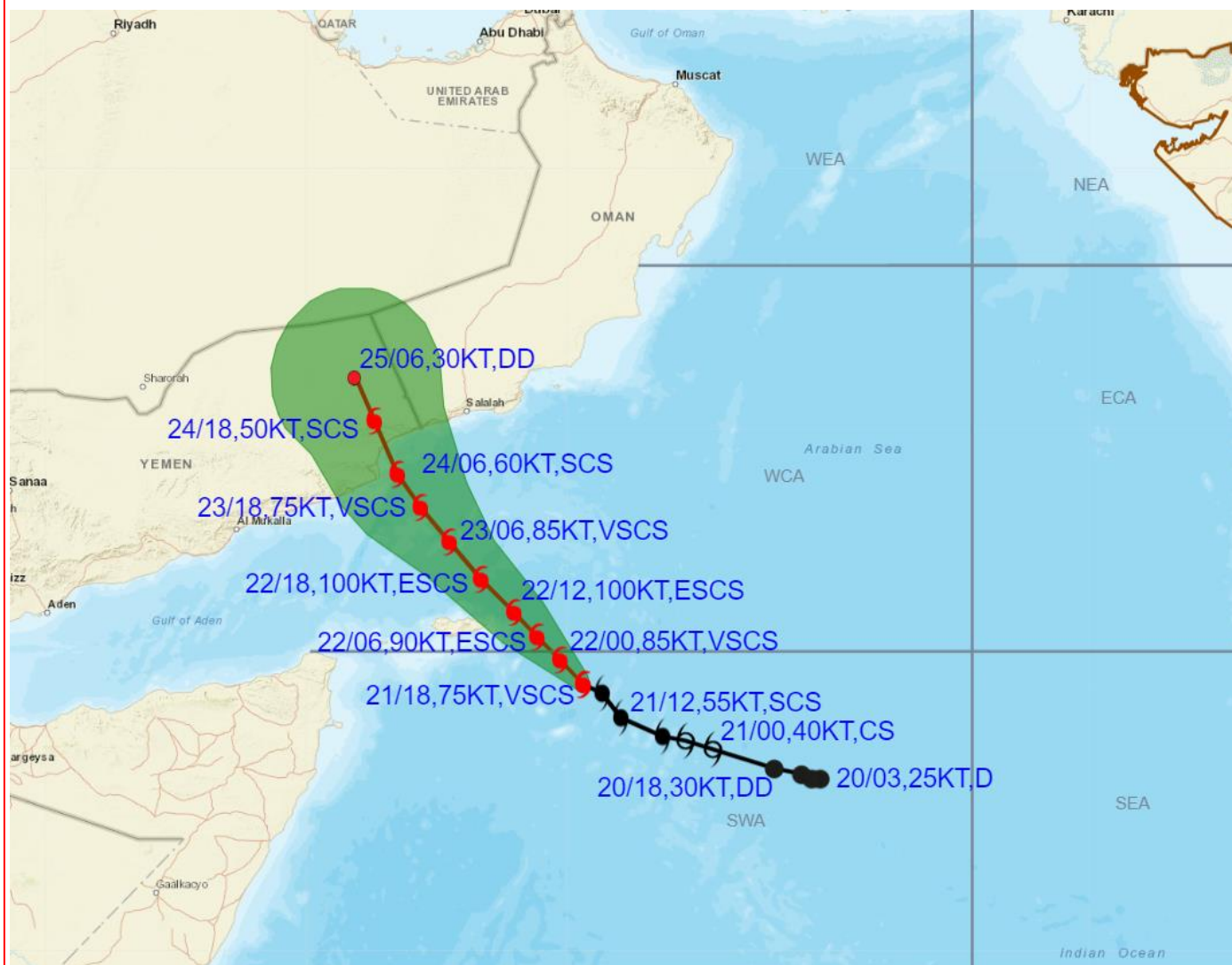
525

938

IMD, DELHI



**OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF VERY SEVERE CYCLONIC STORM "TEJ" OVER SOUTHWEST ARABIAN SEA BASED ON 1800 UTC (2330 IST) OF 21st OCTOBER 2023.**

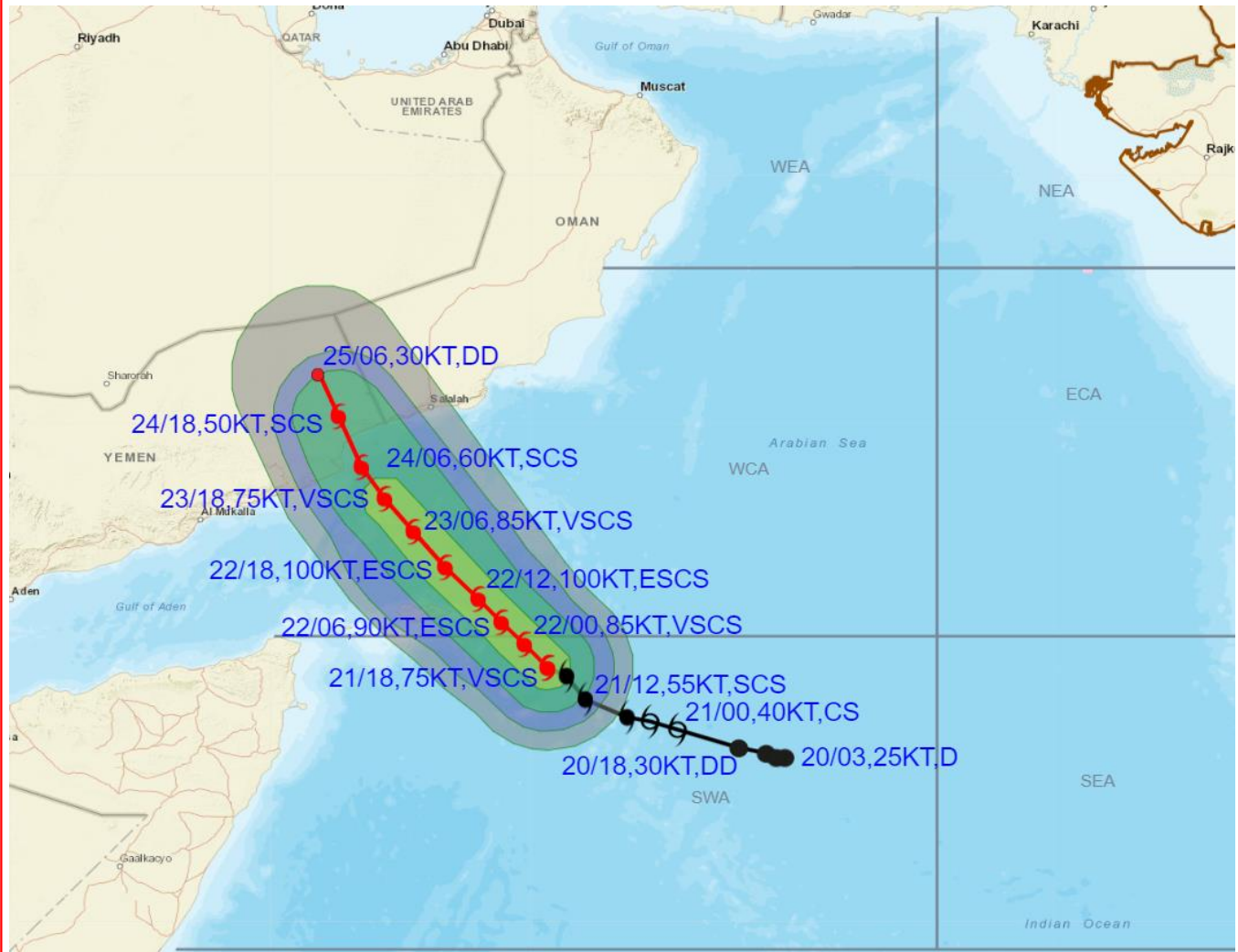


DATE/TIME IN UTC  
 IST=UTC + 0530  
 L: LOW PRESSURE AREA  
 WML: WELL MARKED LOW PRESSURE AREA  
 D: DEPRESSION (17-27 KT)  
 DD: DEEP DEPRESSION (28-33 KT)  
 CS: CYCLONIC STORM (34-47 KT)  
 SCS: SEVERE CYCLONIC STORM (48-63KT)  
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)  
 ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)  
 SuCS: SUPER CYCLONIC STORM ( $\geq 120$  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 VERY SEVERE CYCLONIC STORM "TEJ" OVER SOUTHWEST ARABIAN SEA BASED ON 1800 UTC (2330 IST) OF 21st OCTOBER 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)  
 VSCTS: VERY SEVERE CYCLONIC STORM (64-89 KT)  
 ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)  
 SuCS: SUPER CYCLONIC STORM ( $\geq 120$  KT)

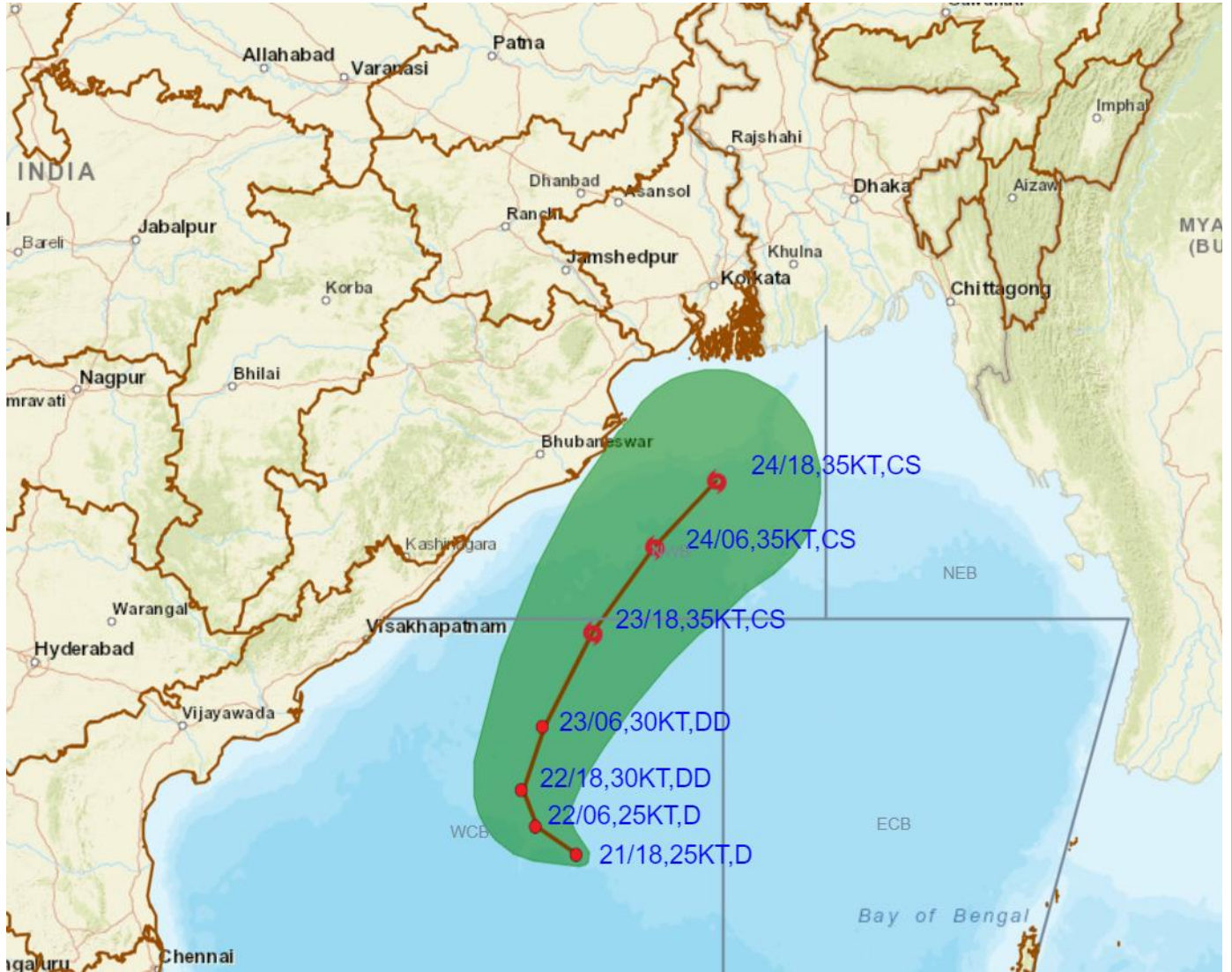
● LESS THAN 34 KT  
 ⚡ 34-47 KT  
 ⚡ ≥ 48 KT  
 — OBSERVED TRACK  
 — FORECAST TRACK  
 ▲ CONE OF UNCERTAINTY  
 AREA OF MAXIMUM SUSTAINED WIND SPEED:  
 ■ 28-33 KT (52-61 KMPH)  
 ■ 34-49 KT (62-91 KMPH)  
 ■ 50-63 KT (92-117 KMPH)  
 ■  $\geq 64$  KT ( $\geq 118$  KMPH)

**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



**OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF DEPRESSION OVER WESTCENTRAL BAY OF BENGAL BASED ON 1800 UTC (2330 IST) OF 21<sup>ST</sup> OCTOBER 2023.**



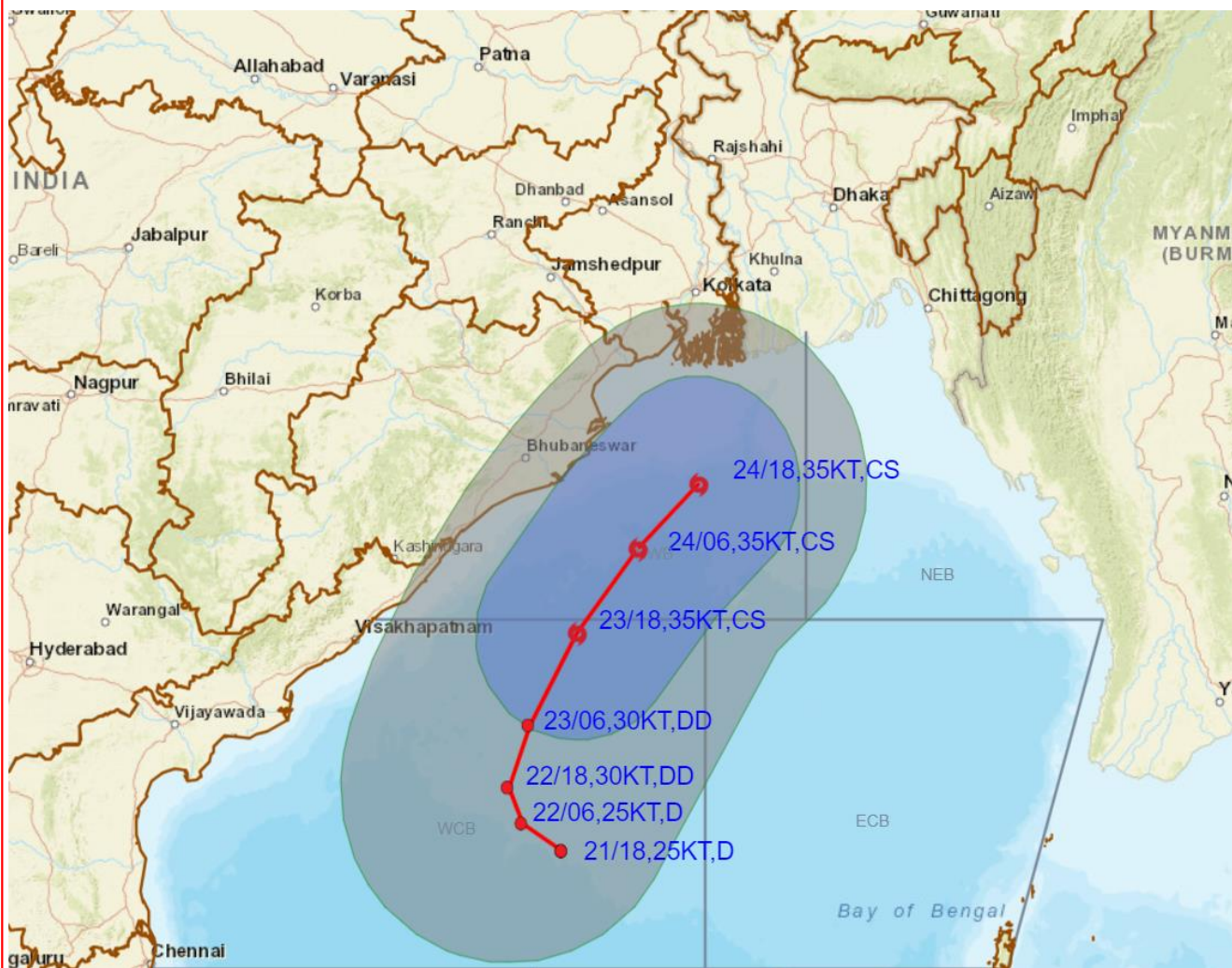
DATE/TIME IN UTC  
 IST=UTC + 0530  
 L: LOW PRESSURE AREA  
 WML: WELL MARKED LOW PRESSURE AREA  
 D: DEPRESSION (17-27 KT)  
 DD: DEEP DEPRESSION (28-33 KT)  
 CS: CYCLONIC STORM (34-47 KT)  
 SCS: SEVERE CYCLONIC STORM (48-63KT)  
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)  
 ESCS: EXTREMELY SEVERE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





**OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEPRESSION OVER WESTCENTRAL BAY OF BENGAL BASED ON 1800 UTC (2330 IST) OF 21<sup>ST</sup> OCTOBER 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)

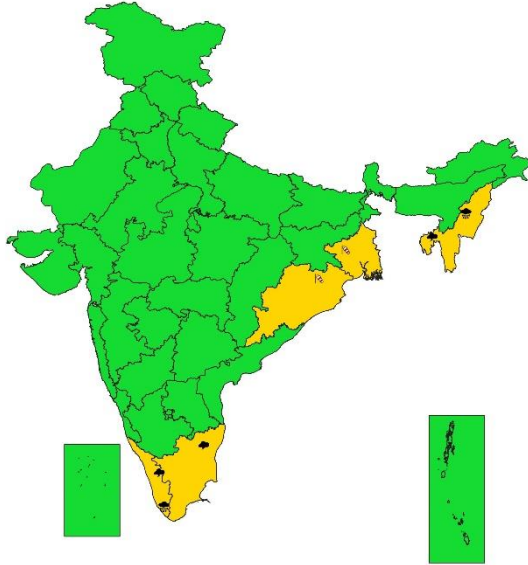
● LESS THAN 34 KT  
 ○ 34-47 KT  
 ● ≥ 48 KT  
 — OBSERVED TRACK  
 — FORECAST TRACK  
 ● CONE OF UNCERTAINTY  
 AREA OF MAXIMUM SUSTAINED WIND SPEED:  
 ■ 28-33 KT (52-61 KMPH)  
 ■ 34-49 KT (62-91 KMPH)  
 ■ 50-63 KT (92-117 KMPH)  
 ■ ≥ 64 KT (≥118 KMPH)

**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



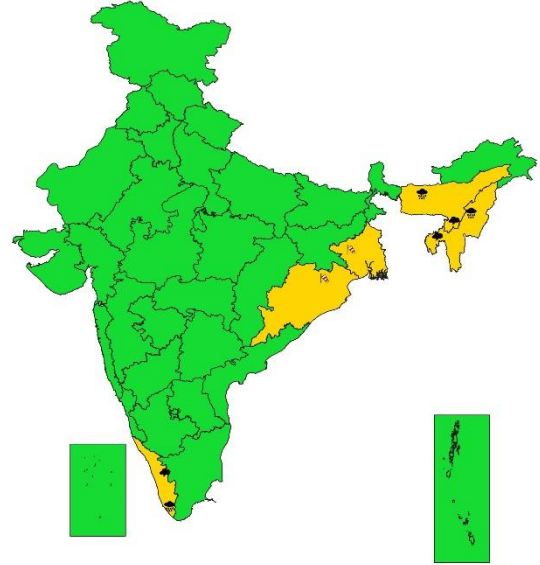
**SUBDIVISIONWISE WEATHER WARNING FOR DAY 4  
( 24-10-2023)**



- |                            |                      |                          |
|----------------------------|----------------------|--------------------------|
| <b>Subdivision Warning</b> | Dust Storm           | <b>Subdivision color</b> |
| Heavy Rain                 | Strong Surface Winds | NO WARNING               |
| Heavy Snow                 | Heat Wave            | WATCH(BE UPDATED)        |
| Thunderstorms & Lightning  | Cold wave            | ALERT (BE PREPARED)      |
| Hailstorm                  | Fog                  | WARNING (TAKE ACTION)    |



**SUBDIVISIONWISE WEATHER WARNING FOR DAY 5  
( 25-10-2023)**



- |                            |                      |                          |
|----------------------------|----------------------|--------------------------|
| <b>Subdivision Warning</b> | Dust Storm           | <b>Subdivision color</b> |
| Heavy Rain                 | Strong Surface Winds | NO WARNING               |
| Heavy Snow                 | Heat Wave            | WATCH(BE UPDATED)        |
| Thunderstorms & Lightning  | Cold wave            | ALERT (BE PREPARED)      |
| Hailstorm                  | Fog                  | WARNING (TAKE ACTION)    |

## Fishermen warning graphics

**Day 1: 21.10.2023/23:30AM to 22.10.2023/05:30AM**



**Day 2: 22.10.2023/05:30AM to 23.10.2023/05:30AM**



**Day 3: 23.10.2023/05:30AM to 24.10.2023/05:30AM**



**Day 4: 24.10.2023/05:30AM to 25.10.2023/05:30AM**



**Day 5: 25.10.2023/05:30AM to 26.10.2023/05:30AM**



Squally WX with wind speed 40-45 kmph gusting to 55 kmph

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

Squally wind with speed 50-60 kmph gusting to 70 kmph

CS with Gale wind speed 60-90 kmph gusting to 110 kmph

SCS with Gale wind speed 90-110 kmph gusting to 120 kmph

VSCS with Gale wind speed 110-160 kmph gusting to 175 kmph

ESCS with Gale wind speed 160-220 kmph gusting to 240 kmph

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