



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

**BULLETIN NO. 21: (ARB/01/2021)**

**TIME OF ISSUE: 0220 HOURS IST**

**DATED: 17.05.2021**

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

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**Sub: Very Severe Cyclonic Storm "Tauktae" (pronounced as Tau'Te) over Eastcentral Arabian Sea: Cyclone Warning for Gujarat & Diu coasts (Orange message)**

The **Very Severe Cyclonic Storm "Tauktae" (pronounced as Tau'Te)** over eastcentral Arabian Sea moved north-northwestwards with a speed of about 18 kmph during past 06 hours and lay centred at 2330 hours IST of 16<sup>th</sup> May, 2021 over eastcentral Arabian Sea near latitude 17.5°N and longitude 71.9°E, about 300 km north-northwest of Panjim-Goa, 210 km south-southwest of Mumbai, 410 km south-southeast of Veraval (Gujarat), 370 km south-southeast of Diu and 960 km south-southeast of Karachi (Pakistan).

It is very likely to intensify further during next 12 hours. It is very likely to move north-northwestwards and reach Gujarat coast in the evening hours of 17<sup>th</sup> & cross Gujarat coast between Porbandar & Mahuva (Bhavnagar district) during early hours of 18<sup>th</sup> May as a Very Severe Cyclonic Storm with a maximum sustained surface wind speed 155-165 kmph gusting to 185 kmph.

The System is presently being monitored by Doppler weather RADAR at Goa.

Forecast track and intensity are given in the following table:

| Date/Time(IST) | Position<br>(Lat. °N/ long. °E) | Maximum sustained surface<br>wind speed (Kmph) | Category of cyclonic<br>disturbance |
|----------------|---------------------------------|--|-------------------------------------|
| 16.05.21/2330  | 17.5/71.9                       | 150--160 gusting to 175                        | Very Severe Cyclonic Storm          |
| 17.05.21/0530  | 18.2/71.4                       | 155-165 gusting to 185                         | Very Severe Cyclonic Storm          |
| 17.05.21/1130  | 19.0/71.0                       | 155-165 gusting to 185                         | Very Severe Cyclonic Storm          |
| 17.05.21/1730  | 19.7/70.9                       | 155-165 gusting to 185                         | Very Severe Cyclonic Storm          |
| 17.05.21/2330  | 20.5/70.9                       | 155-165 gusting to 185                         | Very Severe Cyclonic Storm          |
| 18.05.21/1130  | 21.8/71.1                       | 100-110 gusting to 120                         | Severe Cyclonic Storm               |
| 18.05.21/2330  | 23.4/71.7                       | 50-60 gusting to 70                            | Deep Depression                     |
| 19.05.21/1130  | 24.9/72.4                       | 30-40 gusting to 50                            | Depression                          |

### Warnings:

#### (i) Rainfall:

- **Kerala:** Light to moderate rainfall at many places with heavy falls at isolated places on 17<sup>th</sup> May.
- **South Konkan & Goa:** Light to moderate rainfall at most places with heavy to very heavy falls at isolated places over south Konkan & Goa and adjoining Ghat areas on 17<sup>th</sup> May.
- **North Konkan:** Light to moderate rainfall at most places with heavy to very heavy falls at isolated places on 17<sup>th</sup> May.
- **Gujarat:** Light to moderate rainfall at many places very likely to commence over coastal districts of Saurashtra from today afternoon, with heavy to very heavy falls at isolated places over Saurashtra & Kutch, Diu and southern most Gujarat region with extremely heavy falls at isolated places on 17<sup>th</sup> and with heavy to very heavy falls at a few places over Saurashtra & Kutch and Diu & south Gujarat region with extremely heavy falls ( $\geq 20$  cm) at isolated places on 18<sup>th</sup>.
- **Rajasthan:** Light to moderate rainfall at many places with heavy to very heavy falls & extremely heavy falls at isolated places very likely over south Rajasthan on 18<sup>th</sup> & heavy to very heavy falls at isolated places over Rajasthan on 19<sup>th</sup> May.

#### (ii) Wind warning

- Gale wind speed reaching 150–160 kmph gusting to 175 kmph is prevailing over eastcentral Arabian Sea. It is likely to increase becoming 155-165 kmph gusting to 185 kmph from the forenoon of 17<sup>th</sup> May.
- Gale winds speed reaching 60-70 kmph gusting to 80 kmph is prevailing along & off south Maharashtra –Goa and adjoining Karnataka coasts, 50-60 kmph gusting to 70 kmph along & off north Maharashtra coast during next 12 hours. It is likely to become 65- 75 kmph gusting to 85 kmph along & off north Maharashtra coast from 17<sup>th</sup> morning till 18<sup>th</sup> morning.
- Squally wind speed reaching 60-70 kmph gusting to 80 kmph is prevailing over northeast Arabian Sea and along & off south Gujarat & Daman and Diu coasts. It is likely to gradually increase becoming Gale winds speed reaching 155-165 kmph gusting to 185 kmph over northeast Arabian Sea and along & off Gujarat coast (Porbandar, Junagarh, Gir Somnath, Amreli, Bhavnagar) and 120 -140 kmph gusting to 165 kmph over Bharuch, Anand, south

Ahmedabad, Botad, 90 -100 kmph gusting to 120 kmph over Devbhoomi Dwarka, Jamnagar, Rajkot, Morbi, Kheda districts of Gujarat from early hours of 18th. Gale winds speed reaching 70-90 kmph gusting to 100 kmph likely to prevail along & off Dadra, Nagar Haveli, Daman, Valsad, Navsari, Surat, Surendranagar, districts from 17<sup>th</sup> midnight till 18<sup>th</sup> morning.

**(iii) Sea condition**

- Prevailing high to very high sea condition over eastcentral Arabian Sea will be very high to Phenomenal over northeast Arabian Sea from 17<sup>th</sup> till 18<sup>th</sup> May noon and improve gradually thereafter.
- Sea conditions will be very rough to High along & off south Maharashtra–Goa coasts during next 12 hours and along & off north Maharashtra coast on 17<sup>th</sup> Morning. It is very likely to be very rough to High along & off south Gujarat coast from 17<sup>th</sup> May morning and very high to Phenomenal from 17<sup>th</sup> midnight, till 18<sup>th</sup> May forenoon and improve gradually thereafter.

**(iv) Storm surge warning**

Tidal wave above astronomical tide is likely to inundate coastal areas as per details below:

about 3 meter (m) over Amreli, Gir Somnath, Diu, Bhavnagar, 2-3 m over Bharuch, Anand, southern parts of Ahmedabad, 1-2 m over Surat, Navsari, Valsad, and 0.5 – 1m over the remaining coastal districts of Gujarat during the time of landfall.(Details given in Annexure-I).

**(v) Fishermen Warning**

- Total suspension of fishing operations over eastcentral Arabian Sea till 18<sup>th</sup> May.
- Total suspension of fishing operations over northeast Arabian Sea and along & off Gujarat coast from 17<sup>th</sup> May.
- The fishermen are advised not to venture into eastcentral Arabian Sea along & off Karnataka coast till 17<sup>th</sup> Morning and into eastcentral Arabian Sea and along & off Maharashtra–Goa coasts and into northeast Arabian Sea along & off Gujarat coast till 18<sup>th</sup> May.
- Those who are out at Sea over north Arabian Sea are advised to return to the coast.

**(vi) (A) Damage Expected over Porbandar, Amreli Junagarh, Gir Somnath Botad & Bhavnagar and coastal areas of Ahmedabad:**

- Total destruction of thatched houses/ extensive damage to kutcha houses. Some damage to pucca houses. Potential threat from flying objects.
- Bending/ uprooting of power and communication poles.
- Major damage to Kutcha and Pucca roads. Flooding of escape routes. Minor disruption of railways, overhead power lines and signaling systems.
- Widespread damage to salt pans & standing crops,. Blowing down of bushy trees.
- Small boats, country crafts may get detached from moorings.
- Visibility severely affected.

**(vi) (B) Damage Expected over Devbhoomi Dwarka, Kutch, Jamnagar, Rajkot & Morbi, Valsad, Surart, Vadodara, Bharuch, Navsari, Anand, Kheda and interior parts of Ahmedabad districts of Gujarat:**

- Major damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly.

- Minor damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of large avenue trees. Moderate damage to banana and papaya trees. Large dead limbs blown from trees.
- Major damage to coastal crops.
- Damage to embankments/ salt pans.

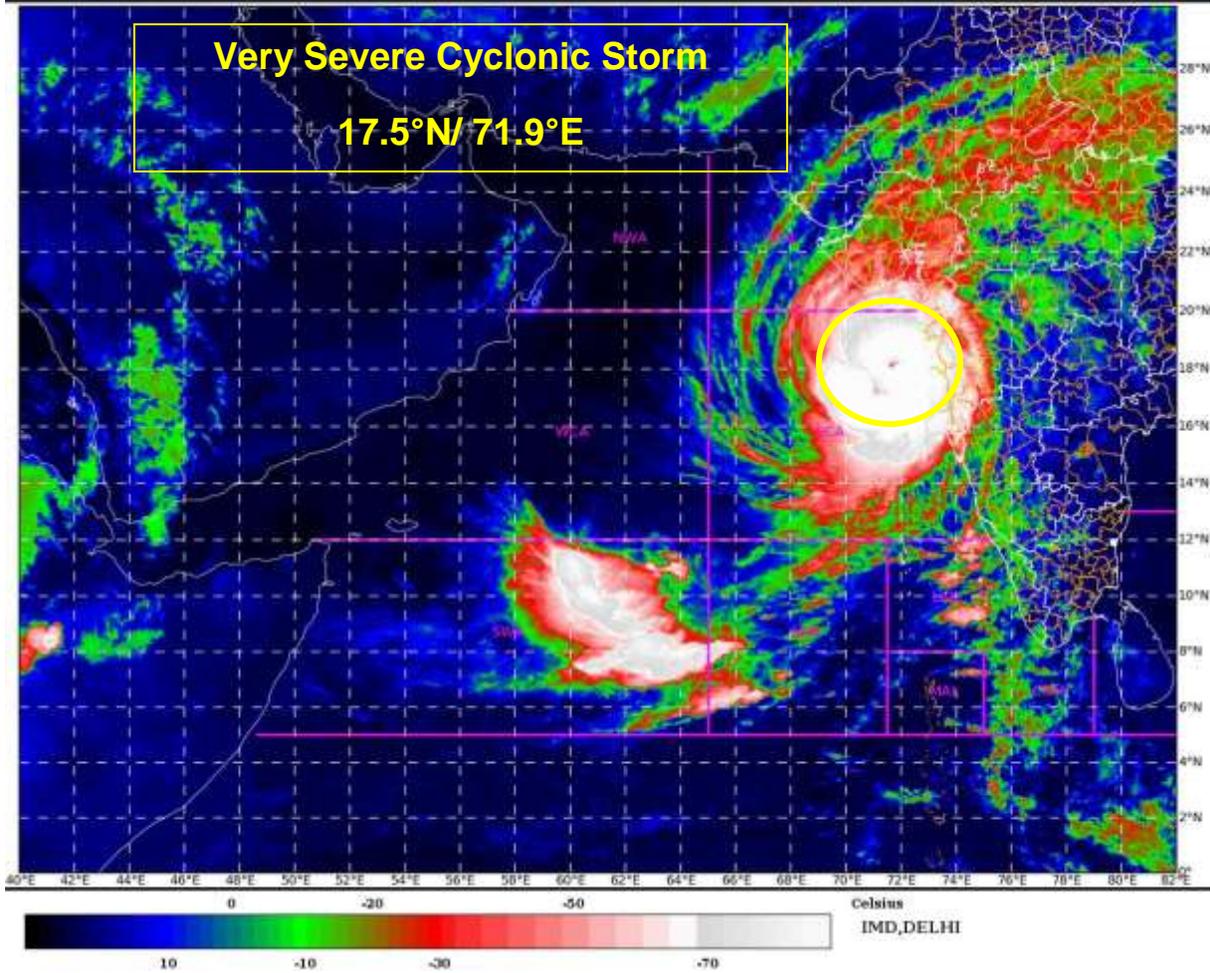
**(vii) Action Suggested:**

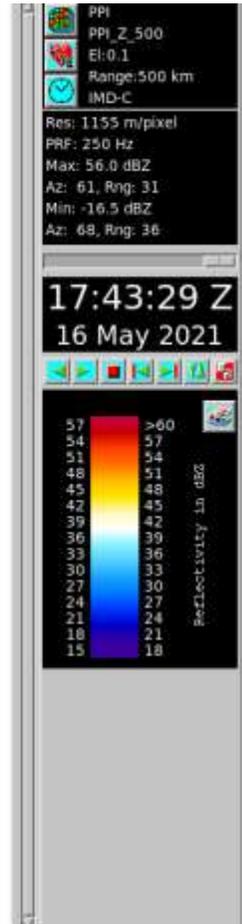
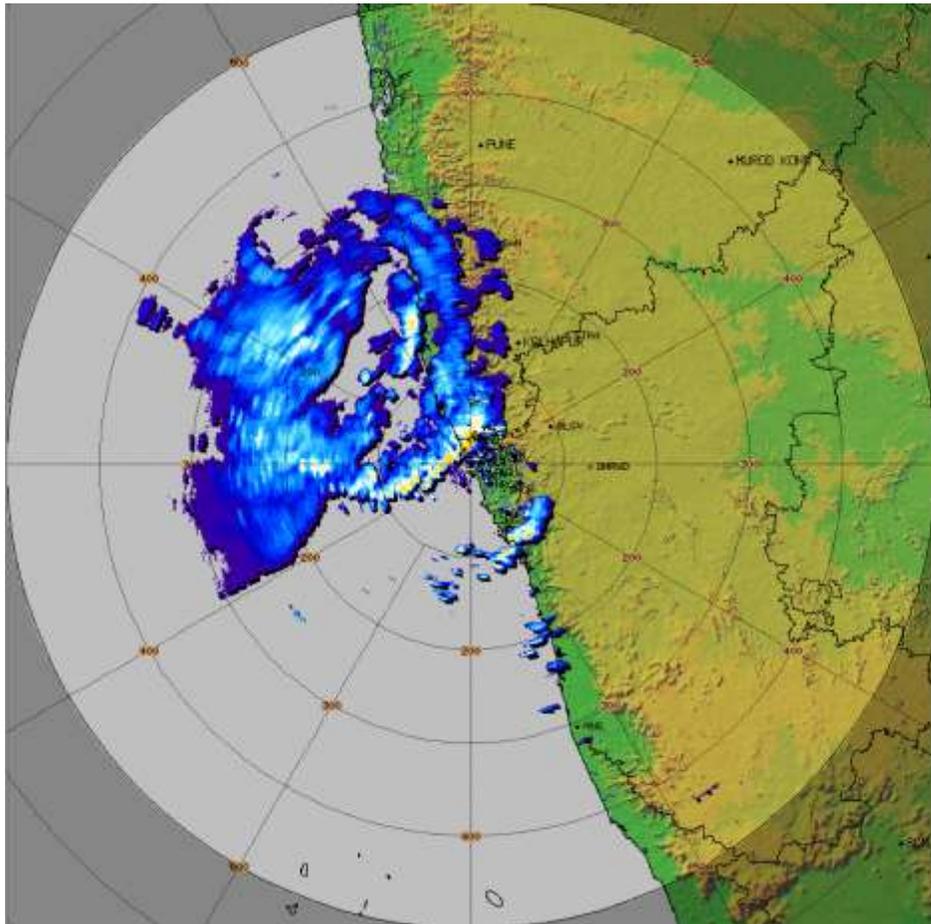
- Mobilise evacuation in vulnerable areas.
- Total suspension of fishing operations.
- Judicious regulation of rail and road traffic.
- People in affected areas to remain indoors.
- Movement in motor boats and small ships unsafe.

The next bulletin will be issued at 0530 hrs IST of the 17th May, 2021.

**(Ananda Kumar Das)**  
**Scientist-E, RSMC, New Delhi**

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/  
Thiruvananthapuram.

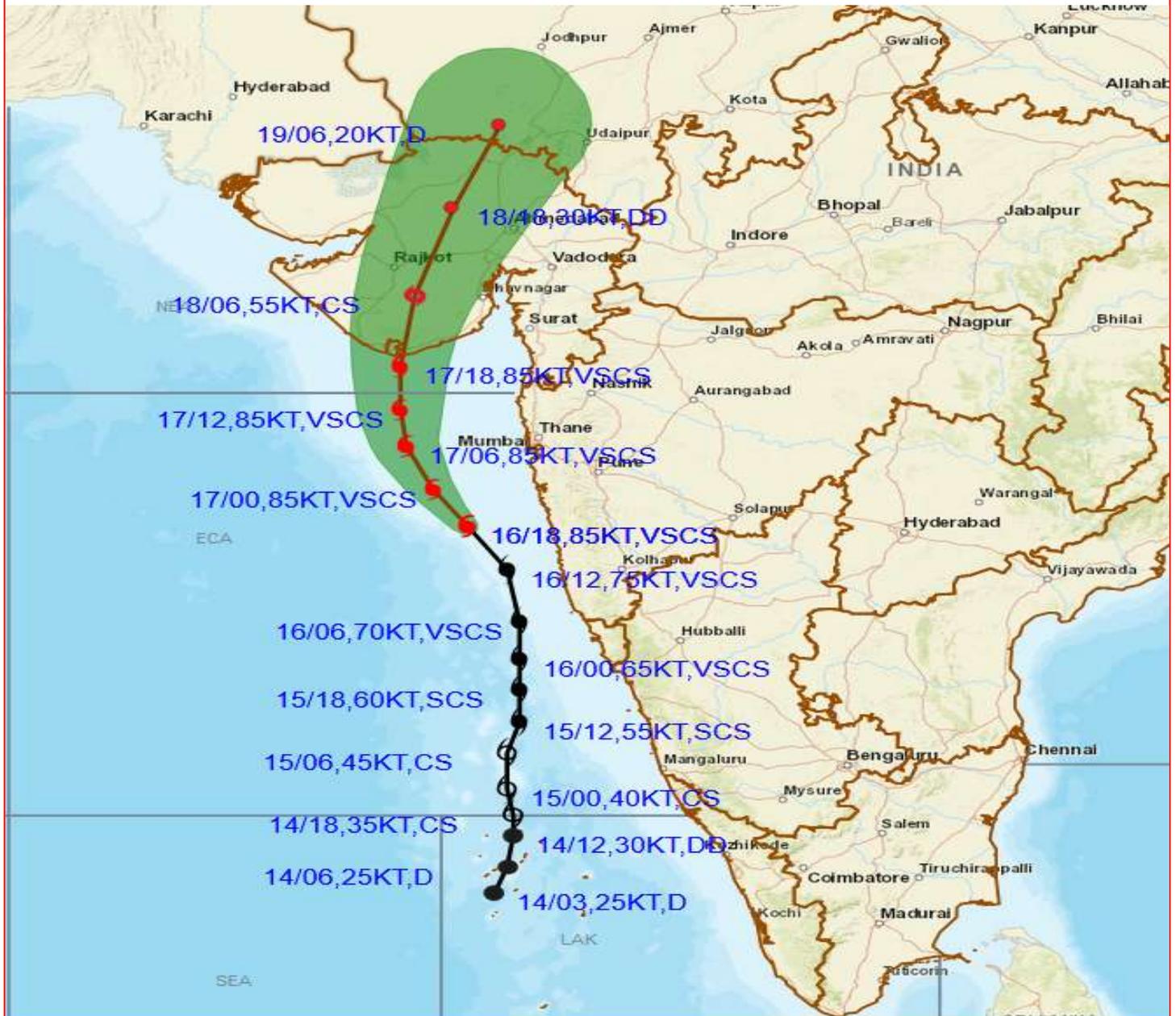




Reflectivity product from Doppler weather RADAR Goa



**OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF VERY SEVERE CYCLONIC STORM "TAUKTAE" OVER EASTCENTRAL ARABIAN SEA BASED ON 1800 UTC OF 16<sup>TH</sup> MAY, 2021**



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

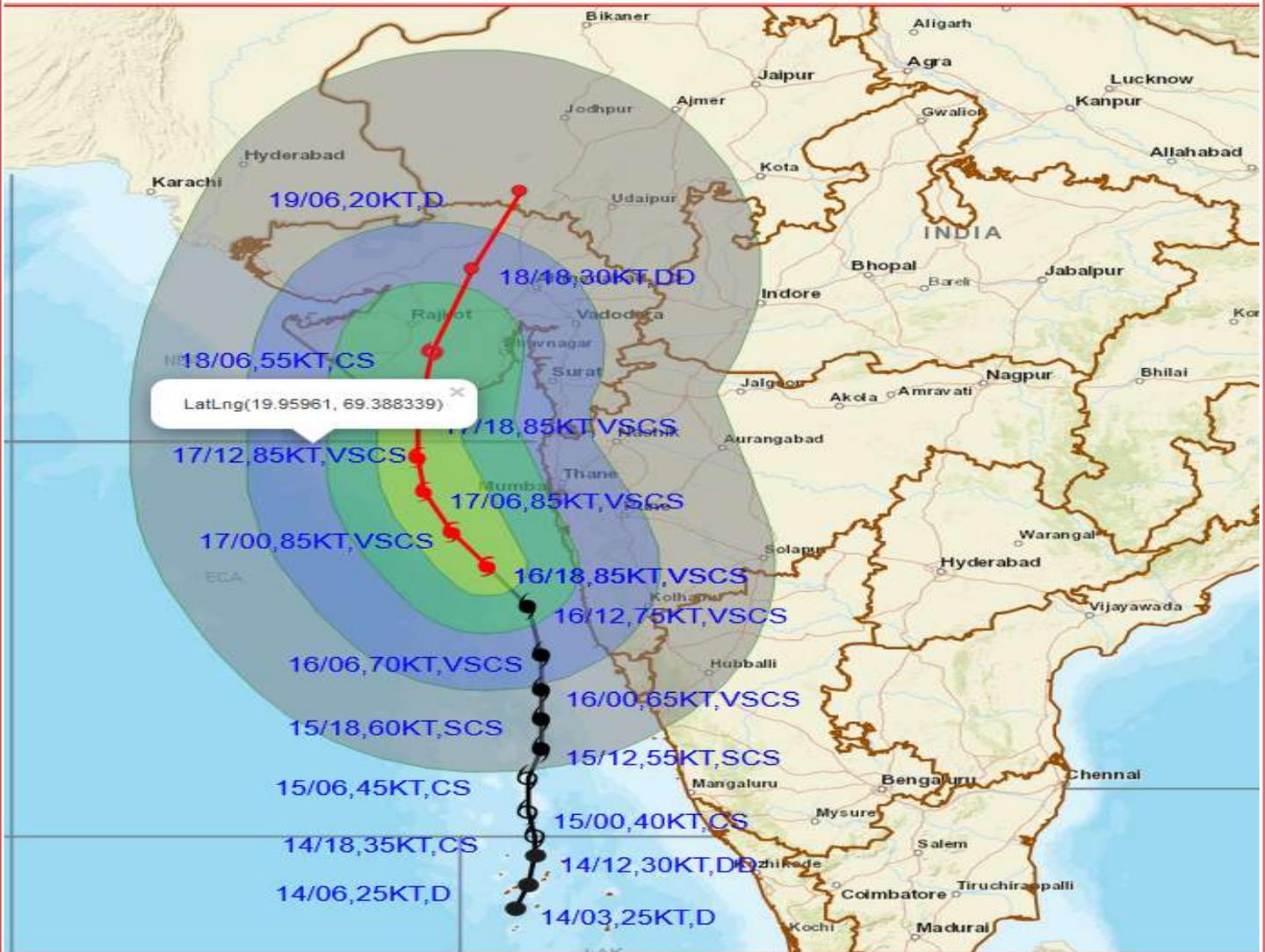
— OBSERVED TRACK

— FORECAST TRACK

▲ CONE OF UNCERTAINTY



# OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF VERY SEVERE CYCLONIC STORM "TAUKTAE" OVER EASTCENTRAL ARABIAN SEA BASED ON 1800 UTC OF 16<sup>TH</sup> MAY, 2021



DATE/TIME IN UTC  
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 L: LOW PRESSURE AREA  
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 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 (62-91)
- 50-63 (92-117)
- ≥ 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 |

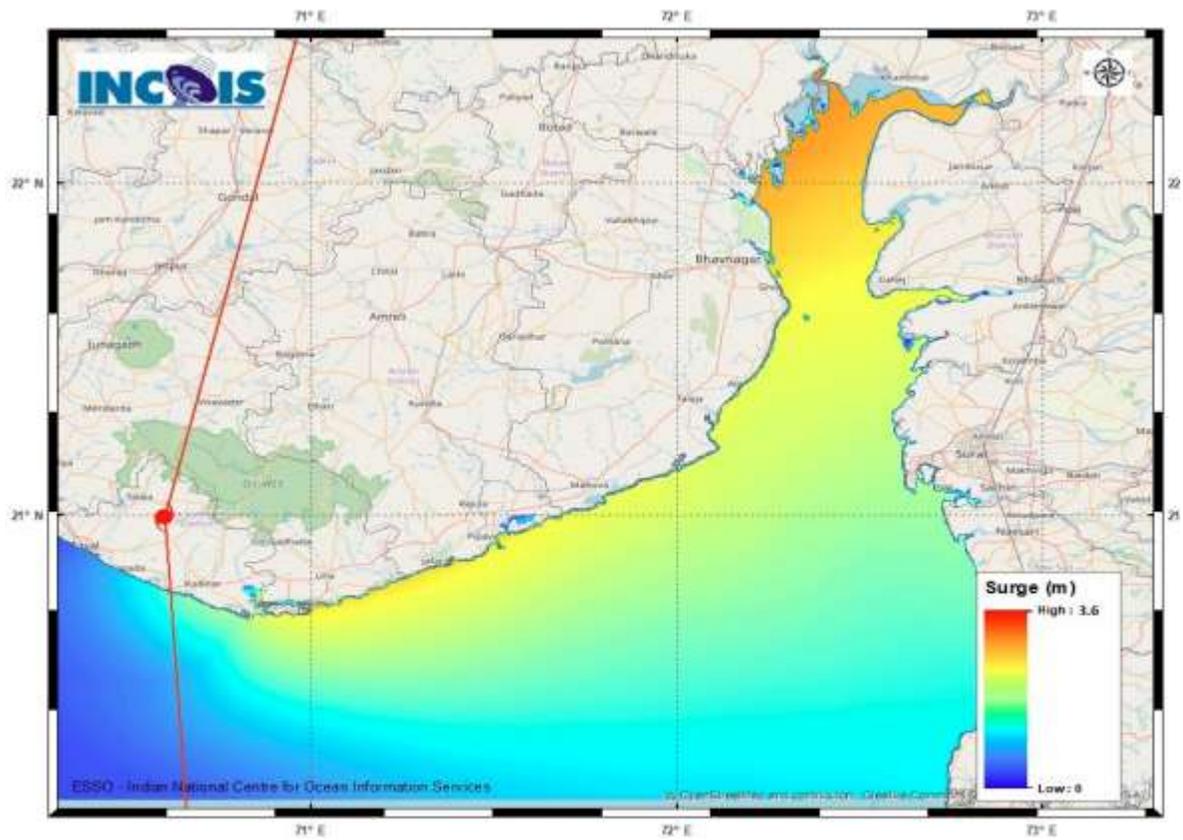


Figure: Storm Surge Map

| MANDAL/TALUK | DISTRICT    | STATE / UNION TERRITORY | NEAREST PLACE OF HABITATION | STORM SURGE (m)<br>* | EXPECTED INUNDATION EXTENT (km) |
|--------------|-------------|-------------------------|-----------------------------|----------------------|---------------------------------|
| Una          | Junagadh    | Gujarat                 | Una                         | 1.2-3.6              | Upto 0.9                        |
| Dhandhuka    | Ahmadabad   | Gujarat                 | Mitli                       | 0.8-3.3              | Upto 4.3                        |
| Hansot Mahal | Bharuch     | Gujarat                 | Kantiyajal                  | 1.0-2.3              | Upto 3.3                        |
| Jafarabad    | Amreli      | Gujarat                 | Rohisa                      | 2.5-2.6              | Upto 0.1                        |
| Hazira       | Surat       | Gujarat                 | Hajira Ina (ina)            | 1.2-2.0              | Upto 1.0                        |
| Kodinar      | Gir Somnath | Gujarat                 | Kodinar                     | 1.5-3.0              | Upto 0.5                        |
| Mundra       | Bhavnagar   | Gujarat                 | Vadgam                      | 2.4-2.4              | Upto 0.9                        |
| Diu          | Diu         | Daman and Diu           | Diu                         | 1.6-2.9              | Upto 0.7                        |
| Mahuva       | Bhavnagar   | Gujarat                 | Katpar (ct)                 | 1.4-2.4              | Upto 0.2                        |
| Bharuch      | Bharuch     | Gujarat                 | Kasva                       | 1.3-2.3              | Upto 0.1                        |
| Bhavnagar    | Bhavnagar   | Gujarat                 | Narbad                      | 1.1-2.9              | Upto 2.4                        |
| Borsad       | Anand       | Gujarat                 | Tithor                      | 1.9-2.7              | Upto 0.3                        |
| Chorasi      | Surat       | Gujarat                 | Bhimpur                     | 1.4-1.8              | Upto 1.0                        |
| Vagra        | Bharuch     | Gujarat                 | Harinagar                   | 1.7-2.5              | Upto 0.5                        |
| Valsad       | Valsad      | Gujarat                 | Malvan                      | 1.1-1.5              | Upto 0.3                        |
| Gandevi      | Navsari     | Gujarat                 | Mendhar                     | 0.8-1.6              | Upto 1.2                        |
| Dahanu       | Palghar     | Maharashtra             | Narpad                      | 0.5-1.2              | Upto 1.0                        |
| Daman        | Daman       | Daman and Diu           | Daman                       | 0.9-1.3              | Nil                             |
| Navsari      | Navsari     | Gujarat                 | Borsi                       | 0.9-1.8              | Upto 0.4                        |
| Olpad        | Surat       | Gujarat                 | Vansva                      | 1.5-2.1              | Upto 0.6                        |
| Veraval      | Gir Somnath | Gujarat                 | Mul Dwarka                  | 0.5-1.8              | Upto 0.2                        |
| Palghar      | Palghar     | Maharashtra             | Akkarpatti                  | 0.4-1.0              | Upto 0.5                        |
| Panvel       | Raigarh     | Maharashtra             | Gavhan                      | 0.7-0.7              | Upto 0.5                        |
| Rajula       | Amreli      | Gujarat                 | Patva                       | 1.1-2.7              | Upto 0.3                        |
| Talaja       | Bhavnagar   | Gujarat                 | Talaja                      | 1.6-2.3              | Upto 0.2                        |
| Umargam      | Valsad      | Gujarat                 | Umargam                     | 1.2-1.3              | Upto 0.2                        |
| Uran         | Raigarh     | Maharashtra             | Sheva                       | 0.6-0.7              | Upto 2.2                        |
| Vasai        | Palghar     | Maharashtra             | Jalsar                      | 0.8-0.9              | Upto 1.1                        |
| Wada         | Thane       | Maharashtra             | Juchandra                   | 0.8-0.8              | Upto 0.2                        |
| Bombay       | Mumbai City | Maharashtra             | Greater Bombay              | 0.6-0.7              | Nil                             |
| Alibag       | Raigarh     | Maharashtra             | Ranjankhar Davali           | 0.5-0.7              | Upto 1.9                        |
| Maliya       | Junagadh    | Gujarat                 | Vadodra Dodiya              | 0.3-0.3              | Upto 0.1                        |
| Mangaon      | Raigarh     | Maharashtra             | Water Body                  | 0.5-0.5              | Upto 0.1                        |