



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

BULLETIN NO. 20: (ARB/01/2021)

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DATED: 16.05.2021

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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 19 kmph during past 06 hours and lay centred at 2030 hours IST of today, the 16th May, 2021 over eastcentral Arabian Sea near latitude 17.2°N and longitude 72.3°E, about 250 km northwest of Panjim-Goa, 220 km south-southwest of Mumbai, 460 km south-southeast of Veraval (Gujarat), 420 km south-southeast of Diu and 1010 km southeast of Karachi (Pakistan).

It is very likely to intensify further during next 24 hours. It is very likely to move north-northwestwards and reach Gujarat coast in the evening hours of 17th & cross Gujarat coast between Porbandar & Mahuva (Bhavnagar district) around 18th May early morning.

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 (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
16.05.21/2030	17.2/72.3	140-150 gusting to 165	Very Severe Cyclonic Storm
16.05.21/2330	17.4/72.0	145-155 gusting to 170	Very Severe Cyclonic Storm
17.05.21/0530	18.2/71.4	150-160 gusting to 175	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	19.6/70.9	155-165 gusting to 185	Very Severe Cyclonic Storm
18.05.21/0530	20.9/70.8	155-165 gusting to 185	Very Severe Cyclonic Storm
18.05.21/1730	22.6/71.3	80-90 gusting to 100	Cyclonic Storm
19.05.21/0530	24.1/71.9	50-60 gusting to 70	Deep Depression
19.05.21/1730	25.6/72.6	35-45 gusting to 55	Depression

Warnings:

(i) Rainfall:

- **Kerala:** Light to moderate rainfall at many places with heavy to very to very heavy falls at isolated places on 16th and heavy falls at isolated places on 17th May.
- **South Konkan & Goa:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places and extremely heavy falls at isolated places over south Konkan & Goa and adjoining Ghat areas on 16th and heavy to very heavy falls at isolated places on 17th May.
- **North Konkan:** Light to moderate rainfall at most places with heavy to very heavy falls at isolated places on 16th and 17th 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 17th and with heavy to very heavy falls at a few places over Saurashtra & Kutch and Diu & south Gujarat region with extremely heavy falls (≥ 20 cm) at isolated places on 18th.
- **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 18th & heavy to very heavy falls at isolated places over Rajasthan on 19th May.

(ii) Wind warning

- Gale wind speed reaching 140–150 kmph gusting to 165 kmph is prevailing over eastcentral Arabian Sea. It is likely to increase becoming 155-165 kmph gusting to 185 kmph from the forenoon of 17th May.
- Gale winds speed reaching 80-90 kmph gusting to 100 kmph along & off south Maharashtra –Goa and adjoining Karnataka coasts on 16th, 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 17th morning till 18th morning.
- Squally wind speed reaching 40-50 kmph gusting to 60 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 17th midnight till 18th morning.

(iii) Sea condition

- Sea condition over eastcentral Arabian Sea will be very high to Phenomenal on 16th May and over northeast Arabian Sea from 17th till 18th 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 17th Morning. It is very likely to be very rough to High along & off south Gujarat coast from 17th May morning and very high to Phenomenal from 17th midnight, till 18th 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 18th May.
- Total suspension of fishing operations over northeast Arabian Sea and along & off Gujarat coast from 17th May.
- The fishermen are advised not to venture into eastcentral Arabian Sea along & off Karnataka coast till 17th Morning and into eastcentral Arabian Sea and along & off Maharashtra–Goa coasts and into northeast Arabian Sea along & off Gujarat coast till 18th 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, Surat, 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.

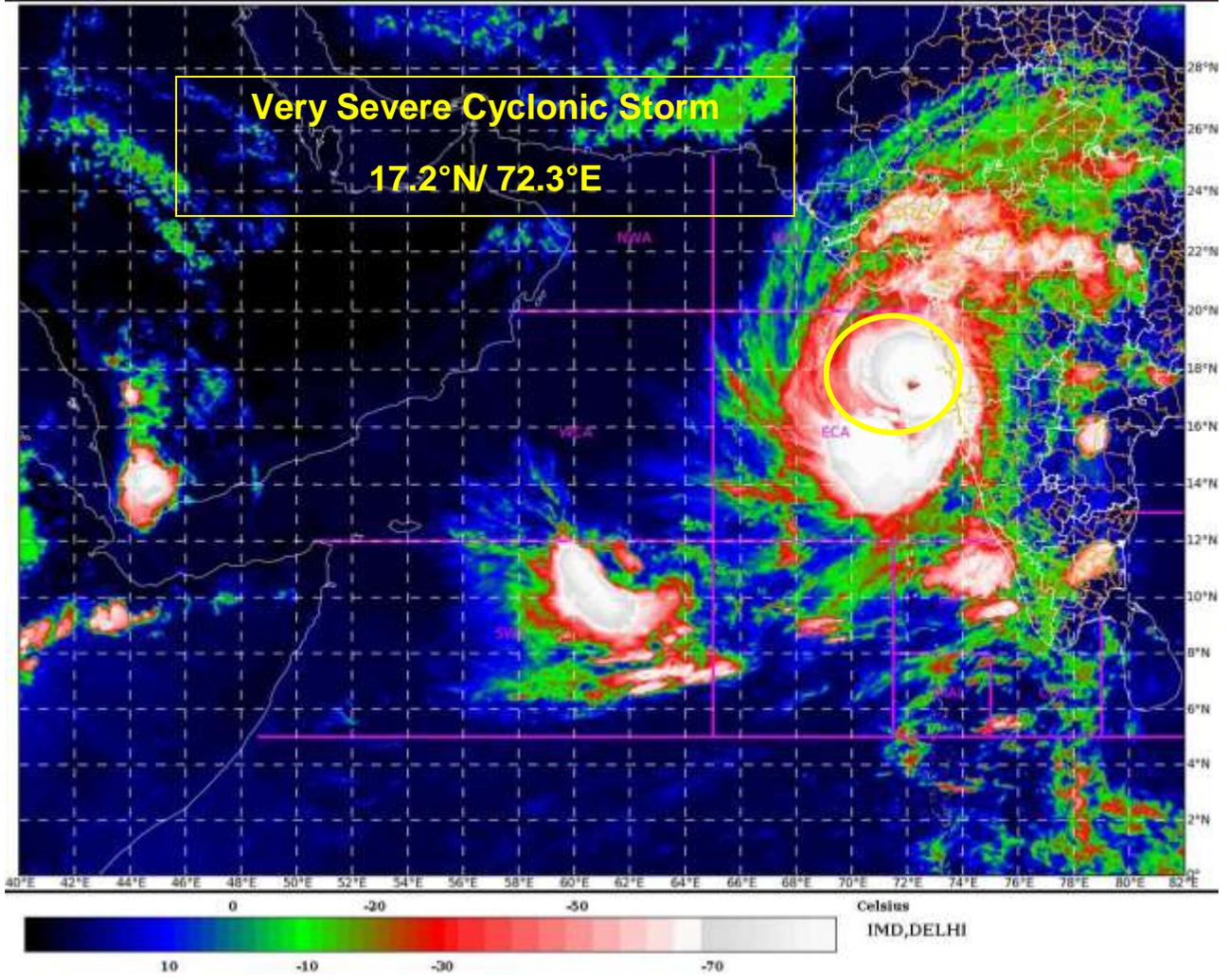
The next bulletin will be issued at 0230 hrs IST of the 17th May, 2021.

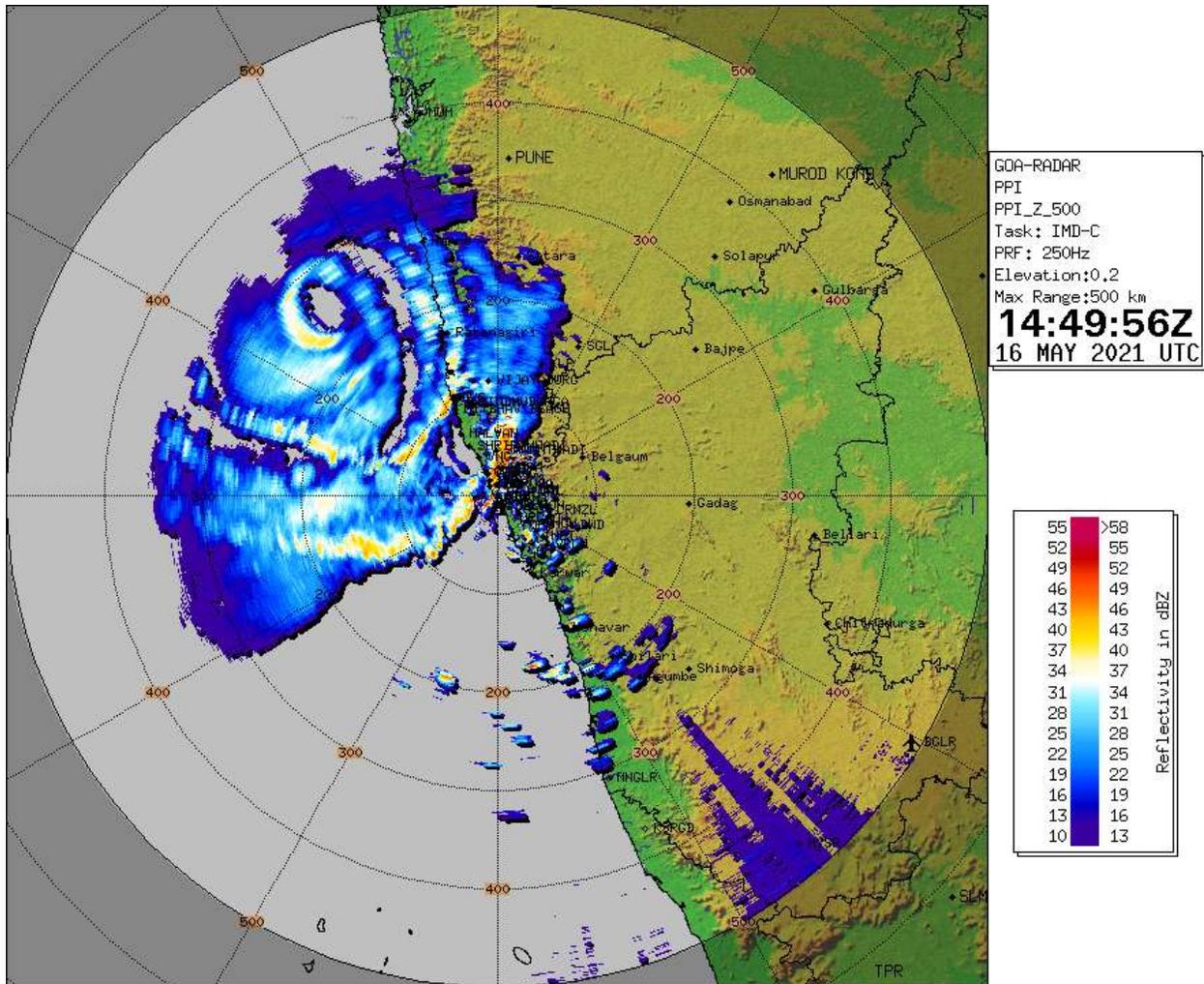
(Ananda Kumar Das)
Scientist-E, RSMC, New Delhi

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

SAT : INSAT-3D IMG
IMG_TIR1_TEMP 10.8 um
ARABIAN_SEA

16-05-2021/(1500 to 1526) GMT
16-05-2021/(2030 to 2056) IST

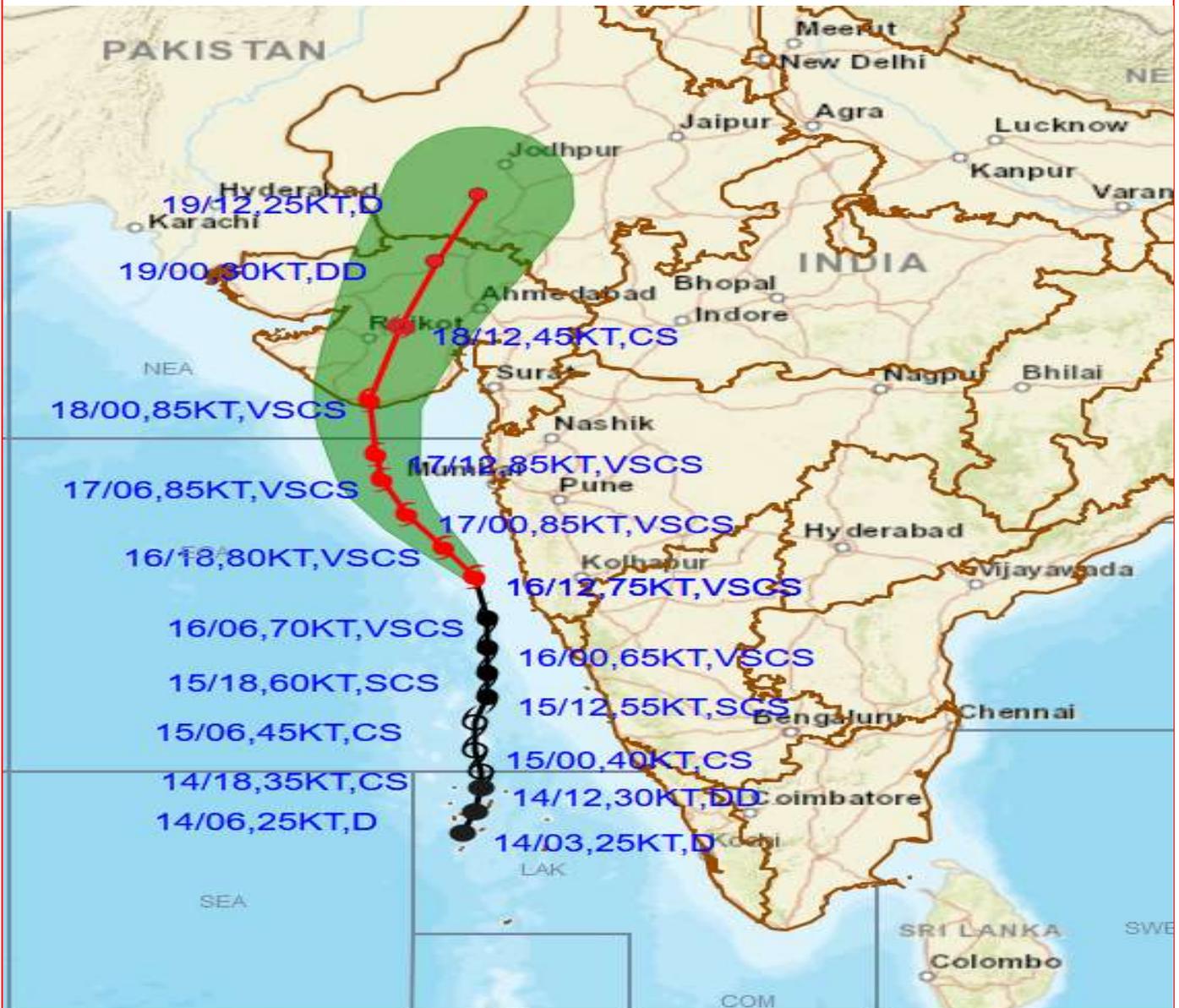




Reflectivity product from Doppler weather RADAR Goa



OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF VERY SEVERE CYCLONIC STORM "TAUKTAE" OVER EASTCENTRAL ARABIAN SEA BASED ON 1200 UTC OF 16TH MAY, 2021

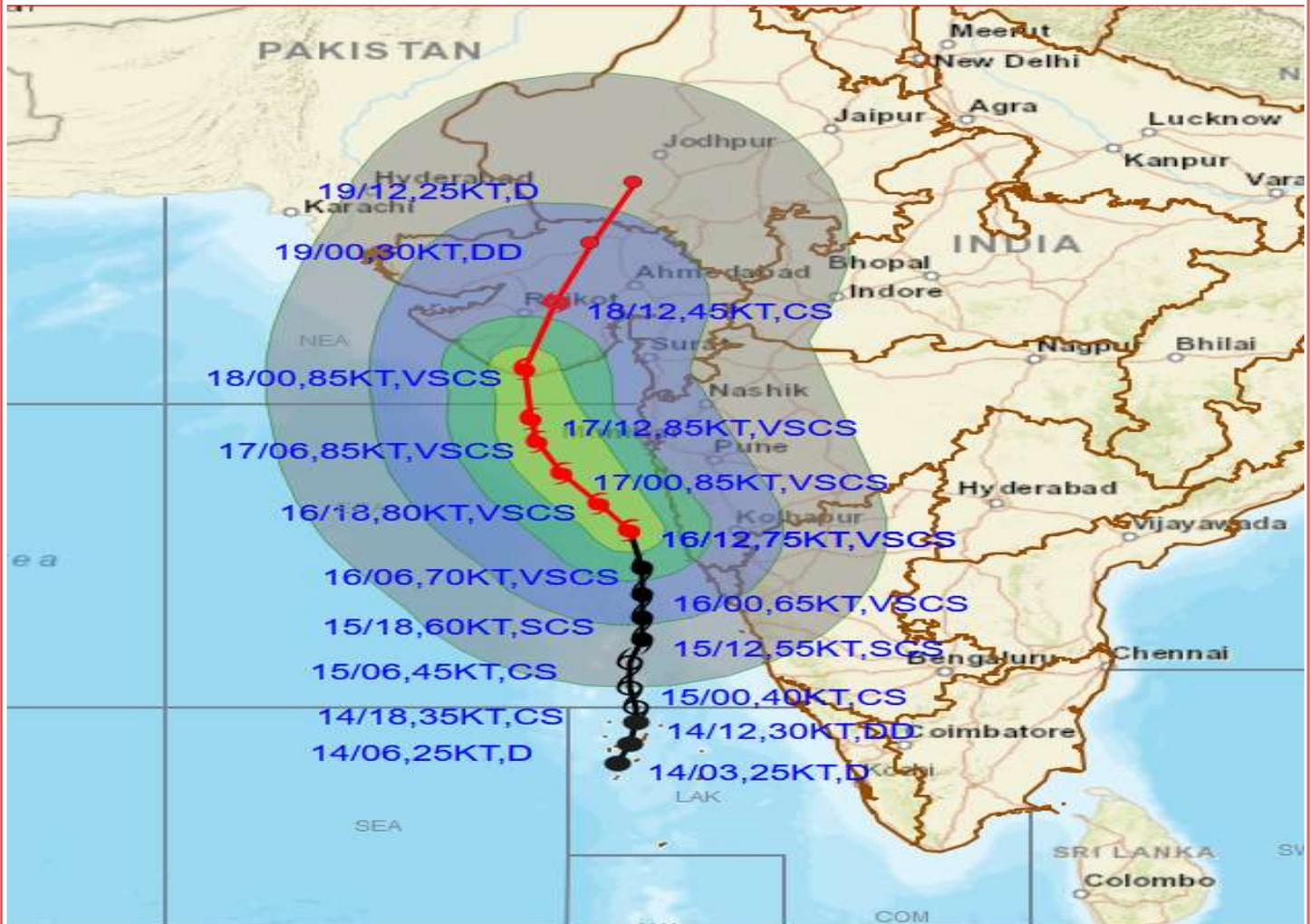


DATE/TIME IN UTC
 IST=UTC + 0530
 L: LOW PRESSURE AREA
 WML: WELL MARKED LOW PRESSURE AREA
 D: DEPRESSION (17-27 KT)
 DD: DEEP DEPRESSION (28-33 KT)
 CS: CYCLONIC STORM (34-47 KT)
 SCS: SEVERE CYCLONIC STORM (48-63KT)
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
 ESCS: EXTREMELY SEVERE CYCLONIC STORM (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 1200 UTC OF 16TH MAY, 2021



DATE/TIME IN UTC

IST=UTC + 0530

L: LOW PRESSURE AREA

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● 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

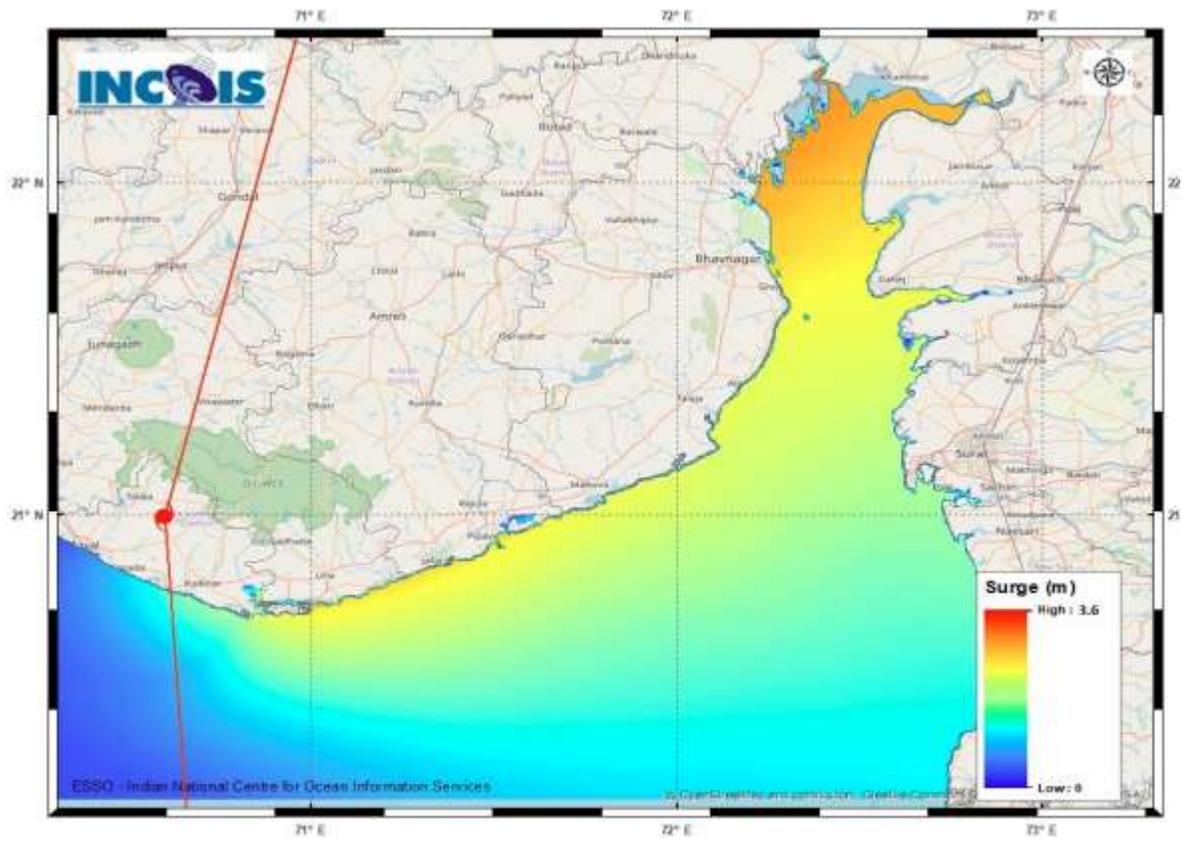


Figure: Storm Surge Map

MANDAL/TALUK	DISTRICT	STATE / UNION TERRITORY	NEAREST PLACE OF HABITATION	STORM SURGE (m) *	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	Tihor	1.9-2.7	Upto 0.3
Chorasi	Surat	Gujarat	Bhimpor	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
Maliva	Junagadh	Gujarat	Vadodra Dodiya	0.3-0.3	Upto 0.1
Mangaon	Raigarh	Maharashtra	Water Body	0.5-0.5	Upto 0.1