



India Meteorological Department
(Ministry of Earth Sciences)

BULLETIN NO. 13 (BOB/09/2022)

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Sub: Severe Cyclonic Storm “Mandous” pronounced as “Man-Dous” over Southwest Bay of Bengal (Cyclone Warning for north Tamil Nadu, Puducherry and south Andhra Pradesh coasts): Orange Message

The cyclonic storm “Mandous” pronounced as “Man-Dous” over Southwest Bay of Bengal moved nearly west-northwestwards with a speed of 13 kmph during past 6 hours, intensified into a **Severe Cyclonic storm** and lay centered at 1730 hours IST of today, the 08th December, 2022 over Southwest Bay of Bengal near latitude 10.1°N and longitude 82.9°E, about 250 km northeast of Trincomalee (Sri Lanka), 320 km east-northeast of Jaffna (Sri Lanka), 350 km east-southeast of Karaikal and about 440 km southeast of Chennai.

It is very likely to maintain its intensity of **Severe Cyclonic Storm** till early morning of 9th December and then weaken gradually into a cyclonic storm by forenoon of 9th December. It would continue to move west-northwestwards and cross north Tamilnadu, Puducherry and adjoining south Andhra Pradesh coasts between Puducherry and Sriharikota, around Mahabalipuram as a cyclonic storm with a maximum sustained wind speed of 65-75 kmph gusting to 85 kmph around midnight of 09th December.

Forecast track and intensity are given below:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
08.12.22/1730	10.1/82.9	85-95 gusting to 105	Severe Cyclonic Storm
08.12.22/2330	10.6/82.3	85-95 gusting to 105	Severe Cyclonic Storm
09.12.22/0530	11.1/81.7	80-90 gusting to 100	Cyclonic Storm
09.12.22/1130	11.5/81.2	75-85 gusting to 95	Cyclonic Storm
09.12.22/1730	11.9/80.7	70-80 gusting to 90	Cyclonic Storm
10.12.22/0530	12.6/80.0	55-65 gusting to 75	Deep Depression
10.12.22/1730	13.0/79.4	30-40 gusting to 50	Depression

Warnings:

(i) Rainfall (warning graphics enclosed)

- ❖ **08th December:-** Light to moderate rainfall at most places with **heavy to very heavy falls** at isolated places very likely over coastal Tamil Nadu, Puducherry & Karaikal and isolated **heavy rainfall** over adjoining areas of south coastal Andhra Pradesh and Rayalaseema.
- ❖ **09th December:** - Light to moderate rainfall at most places with **heavy to very heavy rainfall** at a few places and **extremely heavy rainfall at isolated places** very likely over north coastal Tamil Nadu, Puducherry and isolated **heavy to very heavy rainfall** likely over adjoining south Coastal Andhra Pradesh and north interior Tamilnadu and Rayalaseema.
- ❖ **10th December:-** It is likely to reduce to Light to moderate rainfall at most places with **heavy to very heavy rainfall** at isolated places likely over north Tamil Nadu and Rayalaseema and south Andhra Pradesh.

(ii) Wind warning:

- ❖ **Southwest Bay of Bengal:-** Gale wind, speed reaching 85-95 kmph gusting to 105 kmph will prevail over southwest Bay of Bengal till early morning of 9th December. It would decrease thereafter gradually becoming 70-80 kmph gusting to 90 kmph from 9th December evening, 55-65 kmph gusting to 75 kmph by 10th December morning and 30-40 kmph gusting to 50 kmph by 10th December evening.
- ❖ **Along & off Tamil Nadu, Puducherry, south Andhra Pradesh and north Sri Lanka coasts:-** Squally wind, speed reaching 45-55 kmph gusting to 65 kmph, is prevailing along & off Tamil Nadu-Puducherry-south Andhra Pradesh-north Sri Lanka coasts. It would increase becoming 50-60 kmph gusting to 70 kmph from 09th December morning and 65-75 kmph gusting to 85 kmph from 09th December evening to early hours of 10th December. It is likely to reduce gradually thereafter becoming 55-65 kmph gusting to 75 kmph by morning of 10th December and then to 30-40 kmph gusting to 50 kmph by 10th December night.
- ❖ **Gulf of Mannar :-** Squally wind, speed reaching 40-50 kmph gusting to 60 kmph, likely over Gulf of Mannar from 08th December evening becoming 50-60 kmph gusting to 70 kmph from 09th December evening to early hours of 10th December and 40-50 kmph gusting to 60 kmph by 10th December morning.
- ❖ **Westcentral Bay of Bengal:-** Squally wind, speed reaching 40-50 kmph gusting to 60 kmph, is likely to prevail over Westcentral Bay of Bengal off south Andhra Pradesh coast from 9th December morning and would increase gradually becoming 55-65 kmph gusting to 75 kmph from 9th December evening to 10th December early morning and reduce thereafter gradually becoming 30-40 kmph gusting to 50 kmph by 10th December evening.

(iii) Sea condition

- ❖ **Sea condition likely to be very high** over Southwest Bay Of Bengal till 9th December early morning and high thereafter till early hours of 10th December. It will be rough to very rough over adjoining areas of Westcentral Bay of Bengal till early hours of 10th December and improve gradually thereafter.
- ❖ **Sea condition likely to be rough to very rough** along & off South Andhra Pradesh, Tamil Nadu, Puducherry and Sri Lanka coasts on 08th and 10th and **high** on 9th December.

(iv) Storm Surge Warning

The storm surge of about 0.6 m height above the astronomical tide likely to inundate low lying areas of north coastal Tamilnadu and Puducherry during the time of landfall.

(v) Fishermen Warning (warning graphics enclosed)

Fishermen are advised not to venture into:

- ❖ Southeast Bay of Bengal on 08th December.
- ❖ Southwest Bay of Bengal during 08th-10th December
- ❖ Along & off Sri Lanka coast during 08th-09th December.
- ❖ Along & off Tamilnadu, Puducherry and South Andhra Pradesh coasts and Gulf of Mannar during 08th-10th December.
- ❖ Fishermen out at sea should return to the coast or move to the safe area.

(vi) Adverse Weather Warning for onshore and off-shore operations

Regulate on-shore and off-shore operations over Southwest Bay of Bengal; along & off Tamil Nadu-Puducherry-South Andhra Pradesh coasts and Gulf of Mannar during 08th-10th December.

(vii) Damage expected over Coastal Tamilnadu, Puducherry and adjoining south coastal Andhra Pradesh

- ❖ Damage to thatched houses/ huts. 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 small trees. Dead limbs blown from trees.
- ❖ Damage to banana and papaya trees and near coastal agriculture due to salt spray. Damage to paddy and other standing crops.
- ❖ Inundation/localized flooding in low lying areas due to heavy rains
- ❖ Traffic may be disrupted due to poor visibility in association with heavy rain

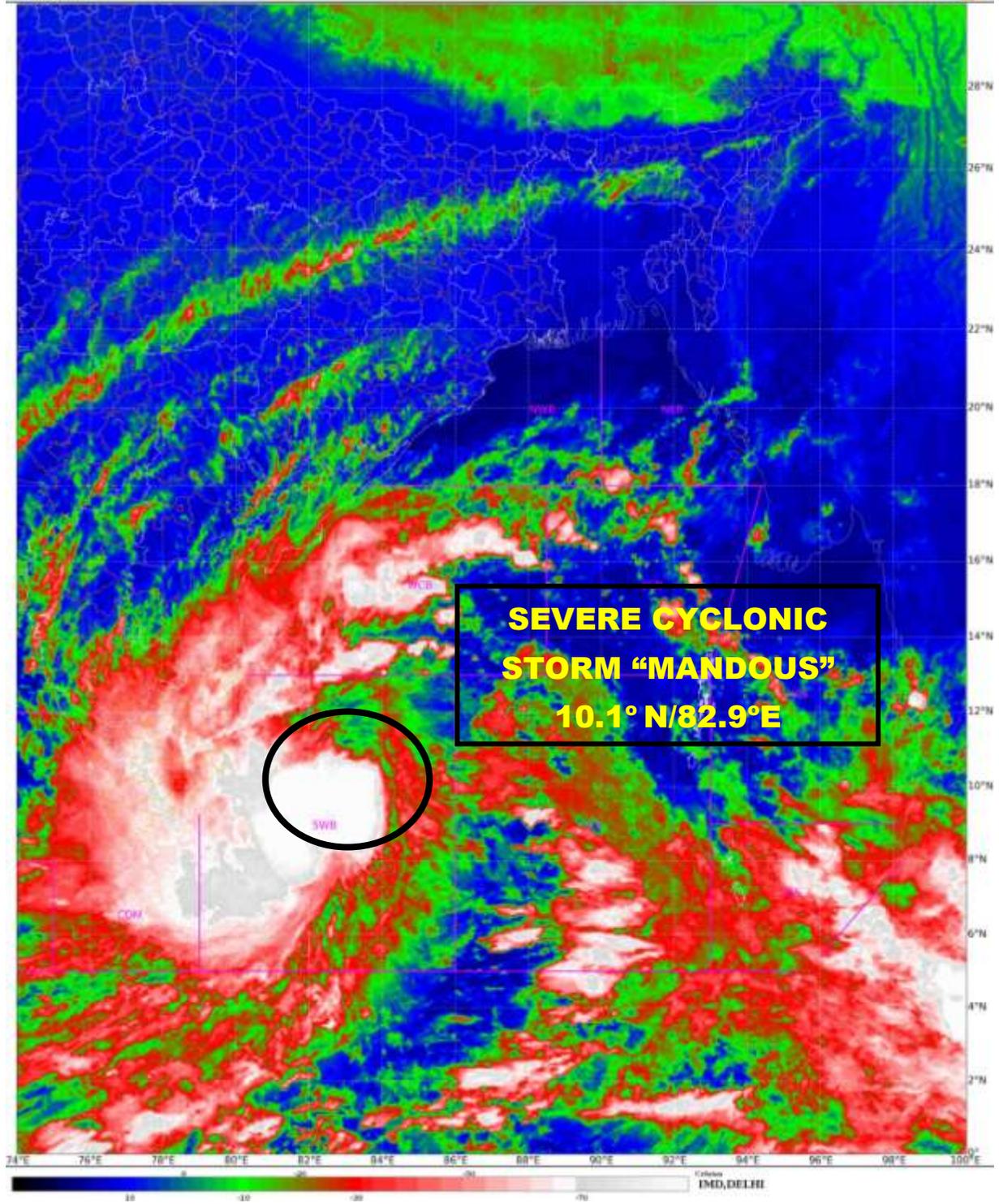
(viii) Action suggested over Coastal Tamil Nadu, Puducherry and adjoining south coastal Andhra Pradesh

- ❖ Total suspension of fishing operations during 08th-10th December.
- ❖ Regulate onshore and off-shore operations during 08th-10th December.
- ❖ People are advised to be cautious while going outside.
- ❖ Regulate traffic.
- ❖ People should not move nearby to vulnerable structures.

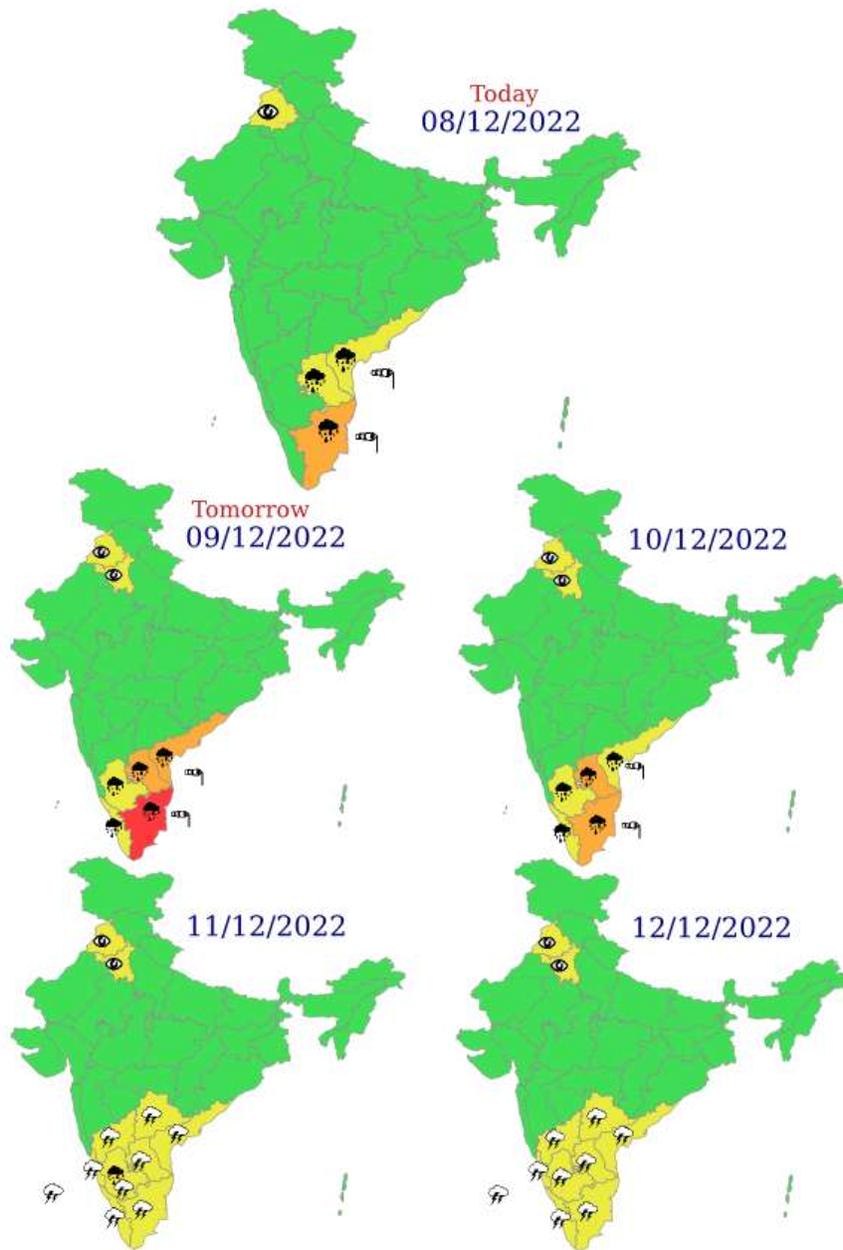
System is under continuous surveillance and the next bulletin will be issued at 2330 hours IST of today, the 08th Dec, 2022.

(R K JENAMANI)
Scientist F, Cyclone Warning Division, New Delhi

Copy to: ACWC Kolkata/ ACWC Chennai/ CWC Bhubaneswar/CWCVisakhapatnam/MO Port Blair



Multi hazard Warning Graphics



LEGEND: 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.

- | | | | |
|--|--|--|--|
|  Heavy Rain |  Heavy Snow |  Thunderstorm |  Dust Storm |
|  Strong Winds |  Visibility |  Cyclone |  Squall/ Hail |
|  Frost |  Cold Wave |  Heat Wave |  Sea State |



OBSERVED AND FORECAST TRACK OF SEVERE CYCLONIC STORM 'MANDOUS' OVER SOUTHWEST BAY OF BENGAL BASED ON 1200 UTC OF 08th 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 (≥ 120 KT)



LESS THAN 34 KT



34-47 KT



≥ 48 KT



OBSERVED TRACK



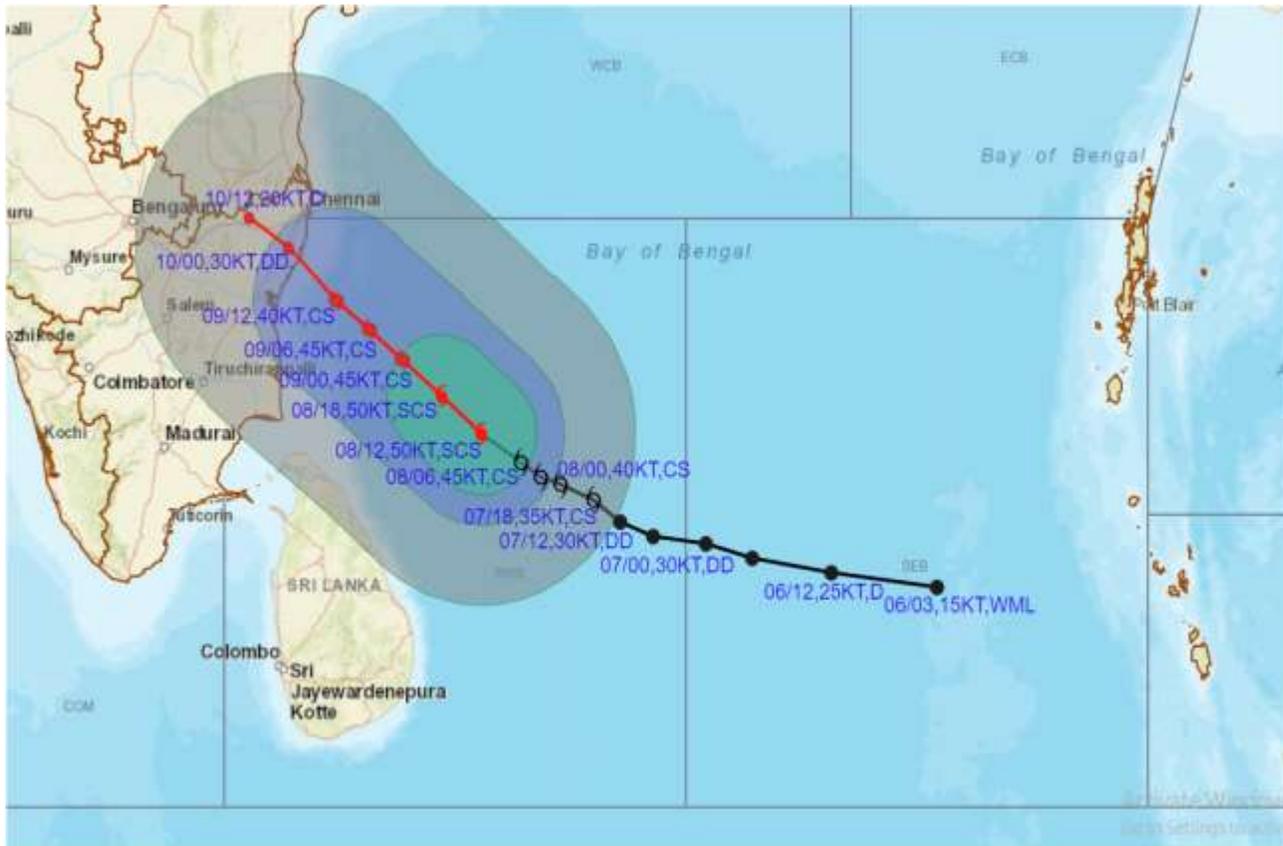
FORECAST TRACK



CONE OF UNCERTAINTY



OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF SEVERE CYCLONIC STORM 'MANDOUS' OVER SOUTHWEST BAY OF BENGAL BASED ON 1200 UTC OF 08th DECEMBER,



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

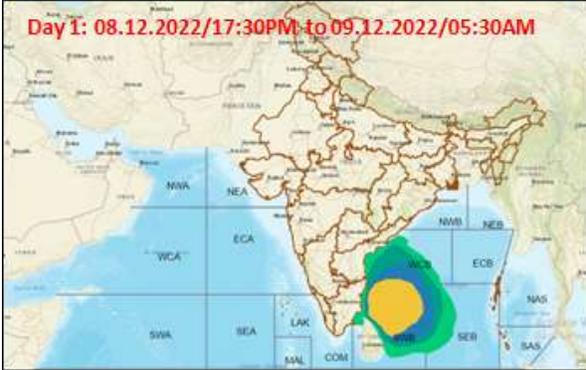
MSW (knot/kmph)	Impact	Action
28-33 (52-61)	Very rough seas	Total suspension of fishing operations
34-49 (62-91)	High to very high seas	Total suspension of fishing operations
50-63 (92-117)	Very high seas	Total suspension of fishing operations
≥ 64 (≥ 118)	Phenomenal	Total suspension of fishing operations

Forecast distance (km) and direction of the centre from nearest 5 coastal stations

Forecast Date and Time	Lead Period	Lat	Lon	Station 1	Station 2	Station 3	Station 4	Station 5
08.12.22/1200	0	10.1	82.9	MULLAITTIV U 1) (245,ENE)	TRINCOMALEE (250,NE)	BATTICALOA (295,NNE)	VAVUNIYA (305,ENE)	KANKASANTU RAI 1) (310,E)
08.12.22/1800	6	10.6	82.3	MULLAITTIV U 1) (220,NE)	TRINCOMALEE (250,NNE)	KANKASANTURA I 1) (260,ENE)	NAGAPPATTI NAM (270,E)	VEDARANNIY AM (270,E)
09.12.22/0000	12	11.1	81.7	KARAIKAL (205,E)	NAGAPPATTIN AM (205,E)	PARANGIPETTAI (215,ESE)	VEDARANNIY AM (220,ENE)	CUDDALORE (225,ESE)
09.12.22/0600	18	11.5	81.2	PARANGIPETTAI (155,E)	CUDDALORE (160,E)	MO PONDICHERRY (160,ESE)	KARAIKAL (165,ENE)	NAGAPPATTI NAM (170,ENE)
09.12.22/1200	24	11.9	80.7	PONDICHERRY (105,E)	CUDDALORE (105,E)	PARANGIPETTAI (110,ENE)	CHENNAI/MIN AMBAKKAM (135,SSE)	NUMGAMBAKKAM (140,SSE)
10.12.22/0000	36	12.6	80.0	CHENNAI/MIN AMBAKKAM (50,SSW)	NUMGAMBAKKAM (55,SSW)	MO PONDICHERRY (75,NNE)	TIRUTTANI (80,SE)	CUDDALORE (95,NNE)
10.12.22/1200	48	13.0	79.4	TIRUTTANI (20,SW)	VELLORE (30,ENE)	TIRUPATHI (75,SSW)	CHENNAI/MIN AMBAKKAM (85,W)	NUMGAMBAKKAM (85,W)

Fishermen warning graphics

Day 1: 08.12.2022/17:30PM to 09.12.2022/05:30AM



Day 2: 09.12.2022/05:30AM to 10.12.2022/05:30AM



Day 3: 10.12.2022/05:30AM to 11.12.2022/05:30AM



Day 4: 11.12.2022/05:30AM to 12.12.2022/05:30AM



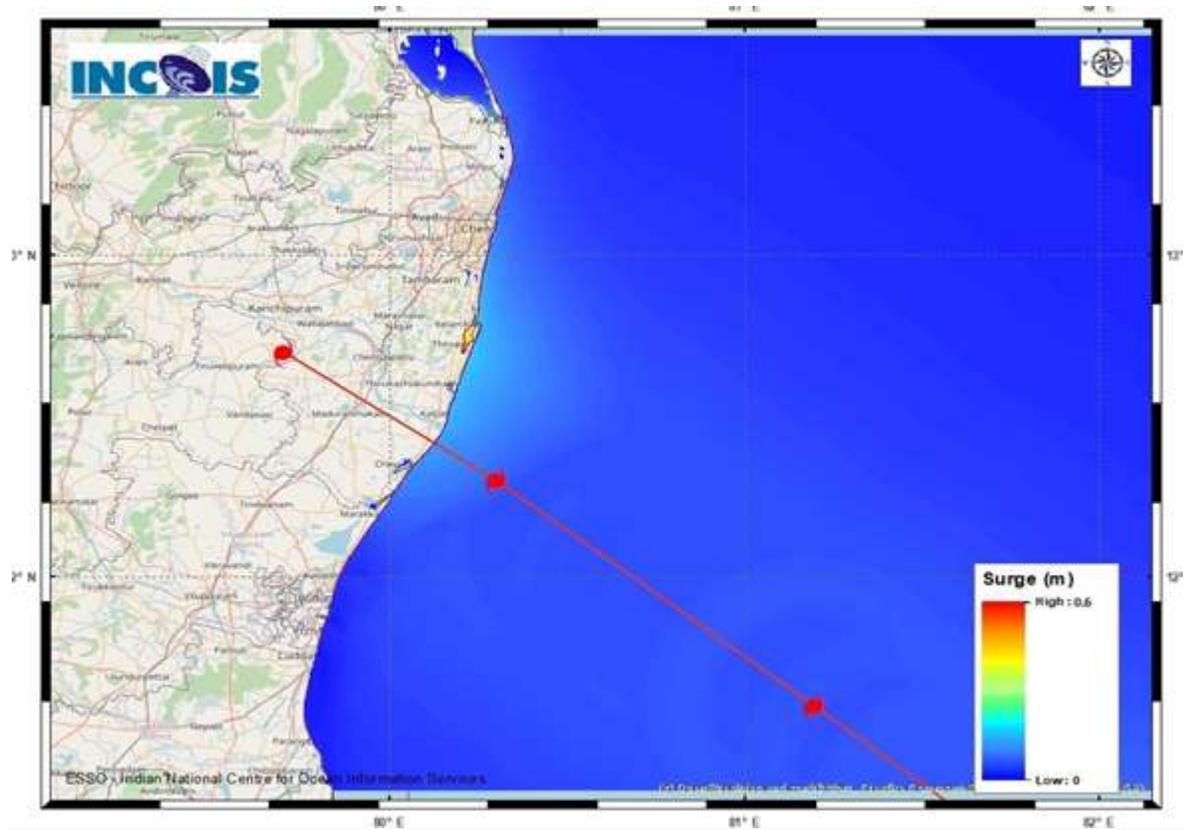
Day 5: 12.12.2022/05:30AM to 13.12.2022/05:30AM



	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 speed 45-55 kmph gusting to 65 kmph
	Squally wind speed with wind speed 55-65 kmph gusting to 75 kmph
	Gale wind speed with wind speed 70-80 kmph gusting to 90 kmph
	Gale wind speed with wind speed 85-95 kmph gusting to 105 kmph

Fishermen are advised not to venture into the marked areas.

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	Neelankari	0.2-0.6	Upto 0.13