



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

NATIONAL BULLETIN NO. 37 (BOB/07/2024)

TIME OF ISSUE: 1300 HOURS IST

DATED: 01.12.2024

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

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Sub: Cyclonic Storm "FENGAL" [pronounced as FEINJAL] over north coastal Tamil Nadu & Puducherry (Cyclone Warning: **Red Message for North Tamil Nadu, Puducherry and adjoining south Andhra Pradesh)**

The Cyclonic Storm "FENGAL" [pronounced as FEINJAL] over north coastal Tamil Nadu & Puducherry remained practically stationary during past 6 hours and lay centered at 0830 hours IST of today, the 1st December 2024 over the same region near latitude 12.0°N and longitude 79.8°E, close to Puducherry, about 30 km north of Cuddalore, 40 km east of Villupuram and 120 km south-southwest of Chennai.

It is likely to move westwards very slowly and weaken gradually into a deep depression over north coastal Tamil Nadu and Puducherry during the next 6 hours.

The system is being continuously monitored by the Doppler Weather Radar at Chennai & Karaikal.

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
01.12.24/0830	12.0/79.8	60-70 gusting to 80	Cyclonic Storm
01.12.24/1130	12.0/79.7	60-70 gusting to 80	Cyclonic Storm
01.12.24/1730	12.0/79.6	50-60 gusting to 70	Deep Depression
01.12.24/2330	12.0/79.4	40-50 gusting to 60	Depression

Warnings:

(i) Rainfall Warning:

Tamil Nadu & Puducherry: Light to moderate rainfall at most places with **heavy to very rainfall at a few places and extremely heavy rainfall (≥ 21 cm)** at isolated places is very likely over North Tamil Nadu & Puducherry on 1st December. Light to moderate rainfall at many places with **heavy to very heavy rainfall** at isolated places is very likely over interior Tamil Nadu on 2nd December & **heavy rainfall** at isolated places over the interior districts of Tamil Nadu adjoining to Kerala on 03rd December.

South Coastal Andhra Pradesh: Light to moderate rainfall at many places with **heavy rainfall** at isolated places is very likely on 01st December.

Rayalaseema: Light to moderate rainfall at many places with **heavy rainfall** at isolated places is very likely on 01st and 2nd December.

South Interior Karnataka: Light to moderate rainfall at many places with **heavy rainfall** at isolated places is very likely on 01st & 3rd December and heavy to very heavy rainfall at isolated places is very likely on 2nd December.

Cosatal Karnataka: Light to moderate rainfall at many places with **heavy rainfall** at isolated places is very likely on 2nd and 3rd December.

Kerala: Light to moderate rainfall at a few places with isolated heavy to very heavy rainfall is likely on 1st December. Rainfall activity will increase with light to moderate rainfall at most places with **heavy to very heavy rainfall** at a few places & **extremely heavy** at isolated places on 2nd and heavy rainfall at isolated places on 3rd December.

(ii) Wind warning:

- **Southwest Bay of Bengal and along & off North Tamil Nadu – Puducherry coasts:** Gale wind speed reaching 60-70 kmph gusting to 80 kmph is continuing to prevail over southwest Bay of Bengal. It is likely to decrease becoming squally wind speed reaching 50-60 kmph gusting to 70 kmph from evening of 1st December and decrease gradually thereafter.
- **Adjoining areas of westcentral Bay of Bengal and along & off South Andhra Pradesh coast:** Squally wind speed reaching 45-55 kmph gusting to 65 kmph is likely to prevail over adjoining areas of westcentral Bay of Bengal till evening of 1st December. It is likely to decrease thereafter.
- **Along & off South Tamil Nadu coast and Gulf of Mannar:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph is likely to prevail till evening of 1st December and gradually decrease thereafter.

(iii) Sea condition:

High to very Rough Sea conditions is likely to prevail over southwest Bay of Bengal adjoining areas of westcentral Bay of Bengal, and along & off North Tamil Nadu-Puducherry coasts. Very rough to rough sea conditions are likely to prevail over adjoining areas of westcentral Bay of Bengal, Gulf of Mannar, along & off South Andhra Pradesh and north Sri Lanka coasts till evening of today, the 1st December. It will gradually improve thereafter.

(v) Storm surge Warning (Graphics Attached):

Storm surge of about 0.5 meter height above the astronomical tide is likely to inundate the low-lying areas of the coastal districts of north Tamil Nadu, Puducherry till evening of 1st December.

(vi) Fisherman warning (Graphics Attached):

- Total suspension of fishing operations till evening of 1st December over southwest and adjoining westcentral Bay of Bengal.
- Fishermen are advised not venture into southwest Bay of Bengal adjoining areas of westcentral Bay of Bengal, Gulf of Mannar and along & off Tamil Nadu-Puducherry, South Andhra Pradesh and North Sri Lanka coasts till 1st December.

(iv) Flash Flood Guidance (Graphics Attached):

24 hours Outlook for the Flash Flood Risk (FFR) till 0530 IST of 02-12-2024:

Moderate to High flash flood risk likely over a few watersheds as mentioned below during next 24 hours:

South Coastal Andhra Pradesh–Thirupati and Nellore districts.

Rayalaseema- Chittoor and Kadapa districts.

Tamil Nadu and Puducherry– Chennai, Tiruvallur, Vellore, Kanchipuram, Tiruvannamalai, Villupuram, Puducherry, Cuddalore, Ariyalur, Perambalur and Karaikal districts.

Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over Area of Concern (AoC) as shown in map due to expected rainfall during next 24 hours.

(vii) Impact Expected [over coastal districts of North Tamil Nadu (Tiruvallur, Chennai, Chengalpattu, Puducherry, Cuddalore, Mayiladuthurai, Nagappattinam, Dharampuri, Krishnagiri and Villupuram) and Andhra Pradesh (Tirupati, Nellore, Kadapa)]

- Damage to thatched huts.
- Minor damage to power and communication lines due to breaking of branches.
- Major damage to Kutcha and minor damage to Pucca roads.
- Some damage to paddy crops, banana, papaya, drum sticks (moringa) trees and orchards.
- Sea water inundation in low lying areas after erosion of Kutcha embankments.
- Localized Flooding of roads, water logging in low lying areas and closure of underpasses mainly in urban areas of the above region.
- Occasional reduction in visibility due to heavy rainfall.
- Disruption of traffic in major cities due to water logging in roads leading to increased travel time.
- Damage to horticulture and standing crops including vegetable crops in some areas due to inundation.
- Breaking of tree branches, uprooting of small trees including banana, papaya and drumstick.

(viii) Action Suggested:

- Total suspension of fishing operations till evening of 1st December.
- Fishermen are advised not to venture into southwest Bay of Bengal adjoining areas of westcentral Bay of Bengal, Gulf of Mannar and along & off Tamil Nadu-Puducherry, South Andhra Pradesh and North Sri Lanka coasts till 1st December.
- The ships plying over the area need to be regulated.
- People should stay in safe places till evening of 1st December evening in the districts near the centre of cyclone.
- Check for traffic congestion on your route before leaving for your destination.
- Follow any traffic advisories that are issued in this regard.
- Avoid going to areas that face the water logging problems often.
- Special care may be taken for fishing ponds and poultry over coastal areas.
- Avoid staying in vulnerable structure.

(ix) Agromet advisories:

Provide adequate drainage facilities for the removal of excess water from rice, cotton, sugarcane, turmeric, tobacco and vegetable fields, coconut and banana orchards. Provide mechanical support to banana plants to prevent lodging.

- Make arrangements to drain out excess water from the standing crop fields and fruit orchards.
- Harvest the matured crops and keep it in safe place.
- Provide mechanical support to horticultural crops and staking to vegetable crops.

24 hours accumulated realised rainfall ending at 0830 hours IST of today, the 1st December is given in Annexure 1.

Next bulletin will be issued at 1430 hours IST of today, the 1st December, 2024.

(Monica Sharma)

Scientist D, RSMC, New Delhi

*Copy to: ACWC Kolkata/ACWC Chennai/CWC Bhubaneswar/MC, Amaravati/MC,
Thiruvananthapuram/CWC, Vishakhapatnam*

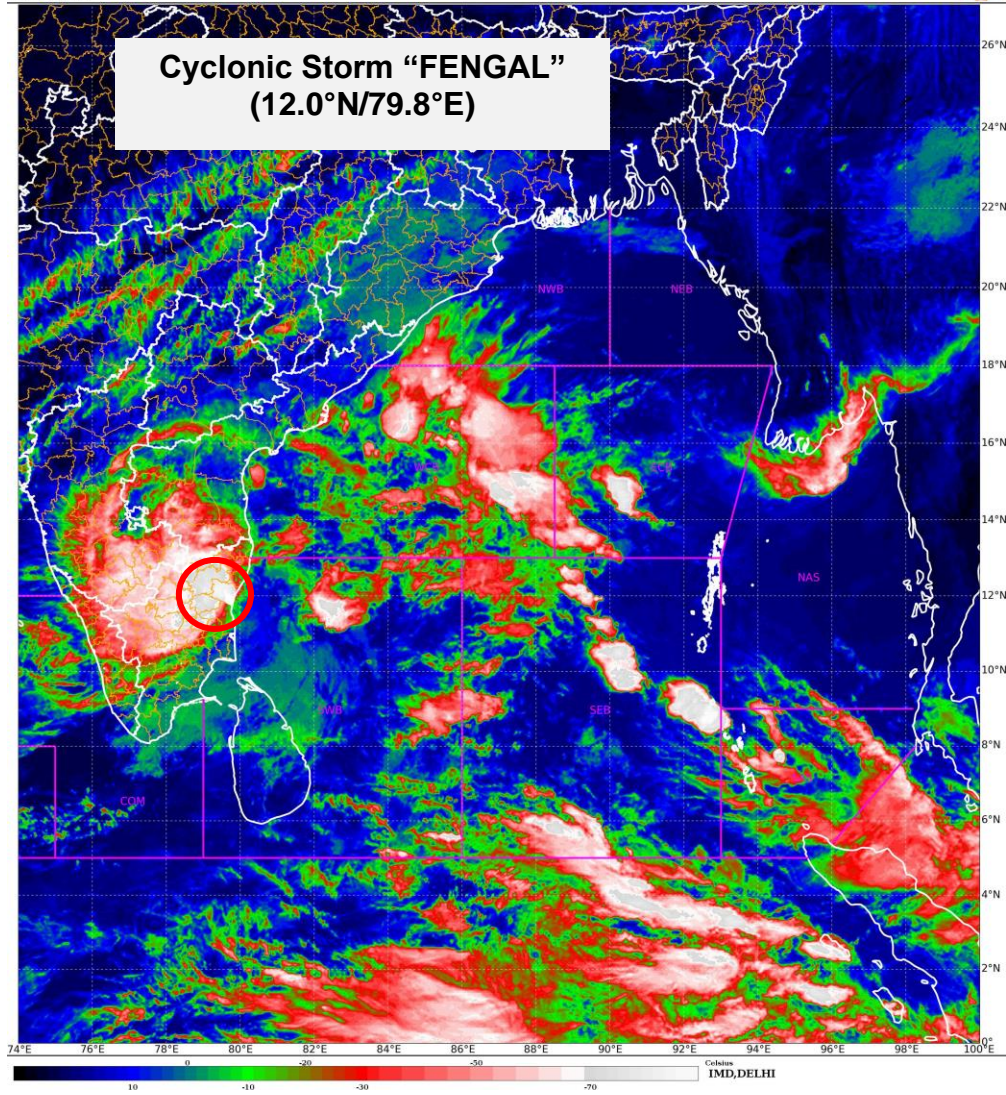
Tamil Nadu: Mylam AWS (dist Villupuram) 51, Puducherry AWS (dist Puducherry) 49, Puducherry (dist Puducherry) 48, Patthukannu (dist Puducherry) 45, Thirukkanur (dist Puducherry) 43, Puducherry Town (dist Puducherry) 40, Tindivanam (dist Villupuram) 37, RSCL-2 Nemoor (dist Villupuram) 35, Bahour (dist Puducherry), RSCL Vallam (dist Villupuram) 32 each, RSCL-3 Semmedu (dist Villupuram) 31, RSCL-2 Valavanur (dist Villupuram), RSCL-2 Koliyanur (dist Villupuram) 28 each, Villupuram (dist Villupuram) 27, Gingee (dist Villupuram), RSCL-2 Kedar (dist Villupuram) 25 each, RSCL-3 Valathy (dist Villupuram), Vanur (dist Villupuram), RSCL-2 Soorapattu (dist Villupuram), Marakkanam (dist Villupuram) 24 each, Cuddalore (dist Cuddalore), RSCL-3 Avalurpettai (dist Villupuram) 23 each, Tiruvannamalai AWS (dist Tiruvannamalai), Chetpet (dist Tiruvannamalai) 22 each, Jamunamarathur (dist Tiruvannamalai), Cuddalore Collector Office (dist Cuddalore), RSCL-3 Anandhapuram (dist Villupuram), Uthiramerur (dist Kancheepuram) 21 each, Maduranthagam (dist Chengalpattu), Keelpennathur (dist Tiruvannamalai), Gummidipoondi (dist Tiruvallur), Chengalpattu (dist Chengalpattu) 20 each, Avadi (dist Tiruvallur), Thirukalukundram (dist Chengalpattu), Vanamadevi (dist Cuddalore) 19 each, Tiruttani (dist Tiruvallur), Arani (dist Tiruvannamalai), BASL Mugaiyur (dist Villupuram), Arcot (dist Ranipet) 18 each, SRC Kudithangi (dist Cuddalore), Cheyyar ARG (dist Tiruvannamalai) 17 each, Thirukoilur ARG (dist Kallakurichi), Vandavasi (dist Tiruvannamalai), Thamaraipakkam (dist Tiruvallur), Kalasapakkam (dist Tiruvannamalai), RSCL-2 Kanjanur (dist Villupuram), Tambaram (dist Chengalpattu) 16 each, Thandarampettai (dist Tiruvannamalai), Kallakurichi (dist Kallakurichi), Kancheepuram (dist Kancheepuram), Wallajah (dist Ranipet), Cheyyur (dist Chengalpattu), MGR Nagar (dist Chennai), Ayanavaram Taluk Office (dist Chennai), RSCL-2 Mundiampakkam (dist Villupuram), Kalavai PWD (dist Ranipet) 15 each, Yercaud (dist Salem), Cheyyar (dist Tiruvannamalai), Arakonam (dist Ranipet), Sholingur (dist Ranipet), Vembakkam (dist Tiruvannamalai), Panruti (dist Cuddalore), Pallipattu (dist Tiruvallur), Kallakurichi ARG (dist Kallakurichi), Mahabalipuram (dist Chengalpattu), Jaya Engg College AWS (dist Tiruvallur) 14 each, Koratur (dist Tiruvallur), Palar Anicut (dist Ranipet), Uthukottai (dist Tiruvallur), Chembarabakkam_REV (dist Tiruvallur), Kaveripakkam (dist Ranipet), R.K.Pet ARG (dist Tiruvallur), DSCL Madampoondi (dist Kallakurichi), Sriperumbudur (dist Kancheepuram), Panapakkam (dist Ranipet), Walajabad (dist Kancheepuram), Red Hills (dist Tiruvallur), Poondi (dist Tiruvallur), BASL Manampoondi (dist Villupuram), R.K.Pet (dist Tiruvallur), Minnal (dist Ranipet), Tiruvallur (dist Tiruvallur) 13 each, Zone 12 Meenambakkam (dist Chennai), Ambathur Rev (dist Chennai), Valasaravakkam (dist Chennai), Cholavaram (dist Tiruvallur), DSCL Thirupalapandal (dist Kallakurichi), DSCL Kalayanallur (dist Kallakurichi), LMOIS Kolapakkam ARG (dist Chengalpattu), Zone 07 Ayapakkam (dist Chennai), Ranipet AWS (dist Ranipet), Tirukoilur (dist Kallakurichi), Zone 11 Maduravoyal (dist Chennai), Tiruttani AWS (dist Tiruvallur), Ambattur MW (dist Chennai) 12 each, Chennai (AP) (dist Chennai), Tiruttani PTO (dist Tiruvallur), Alandur (dist Chennai), BASL Manalurpet (dist Kallakurichi), KCS Mill-1 Ariyalur (dist Kallakurichi), BASL Vengur (dist Kallakurichi), Meenambakkam AWS (dist Chennai), Zone 11 Valasaravakkam (dist Chennai), Anna Nagar (dist Chennai), Ammoor (Walajah Railway) (dist Ranipet), Nctpl Marg ECR AWS (dist Chengalpattu), Vellore (dist Vellore), Thiru-Vi-Ka Nagar (dist Chennai), Ponneri (dist Tiruvallur), Chennai Collector Office (dist Chennai), Kattumayilur (dist Cuddalore), Sankarapuram (dist Kallakurichi), Perambur (dist Chennai), Chennai(N) AWS (dist Chennai), Kundrathur (dist Kancheepuram), Zone 10 Vadapalani (dist Chennai), ACS Medical College ARG (dist Kancheepuram), Ulundurpet (dist Kallakurichi), Sholinganallur (dist Chennai), Kodambakkam (dist Chennai), DSCL Virugavoor (dist Kallakurichi), Chennai(N) (dist Chennai) 11 each, Alangayam (dist Tirupathur), DGP Office (dist Chennai), Poonamallee (dist Tiruvallur), Ponnai Dam (dist Vellore), CD Hospital Tondiarpet (dist Chennai), Thiruvalangadu (dist Tiruvallur), Zone 12 D156 Mugalivakkam (dist Chennai), Ariyalur Camp Area (dist Kallakurichi), DSCL Sulangurichi (dist Kallakurichi), Zone 18 Aminjikarai (dist Chennai), DSCL Thiyagadurgam (dist Kallakurichi), DSCL Keelpadi (dist Kallakurichi), Zone 05 Basinbridge (dist Chennai), Ammundi (dist Vellore), Zone 14 Madipakkam (dist Chennai) 10 each,

Kerala: Ulanad (Pathanamthitta district) 9, Enadimangalam (Pathanamthitta district) 7

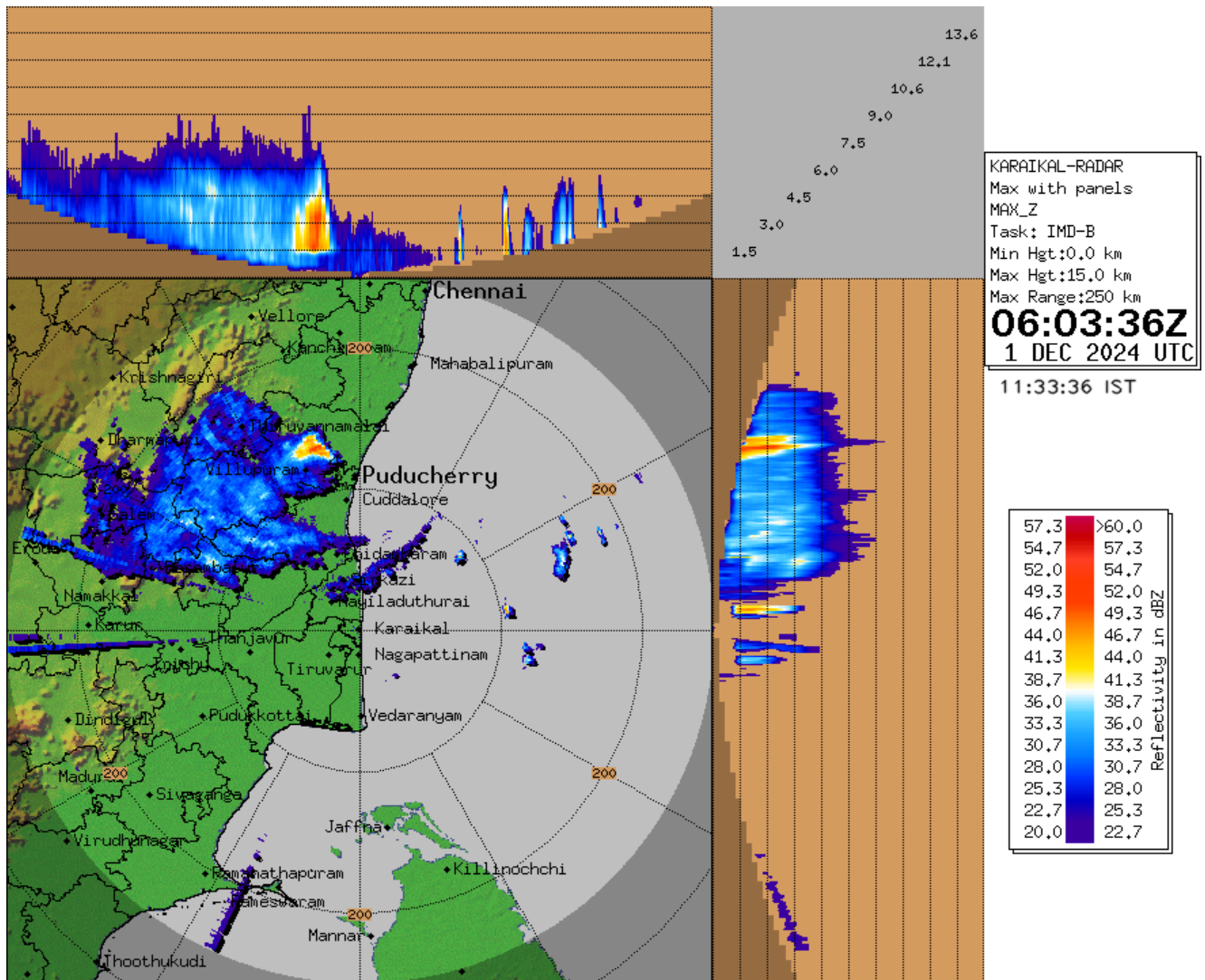
Royalaseema: Sullurpeta (dist Tirupati) 17, Tada (dist Tirupati) 15, Nagari (dist Chittoor) 13, Kodur (dist Ysr District) 12, Satyavedu (dist Tirupati) 11, Venkatagiri (dist Tirupati) 11, Palasamudram (dist Chittoor) 10, Thottambedu (dist Tirupati) 9, Srikalahasti (dist Tirupati) 9, Tirupati Aero (dist Tirupati) 9,
Coastal Andhra Pradesh: Rapur (dist Spsr Nellore) 9, Nellore (dist Spsr Nellore) 8,

SAT : INSAT-3DR IMG
IMG_TIR1_TEMP 10.8 um
LIC Mercator

01-12-2024/(0545 to 0612) GMT
01-12-2024/(1115 to 1142) IST

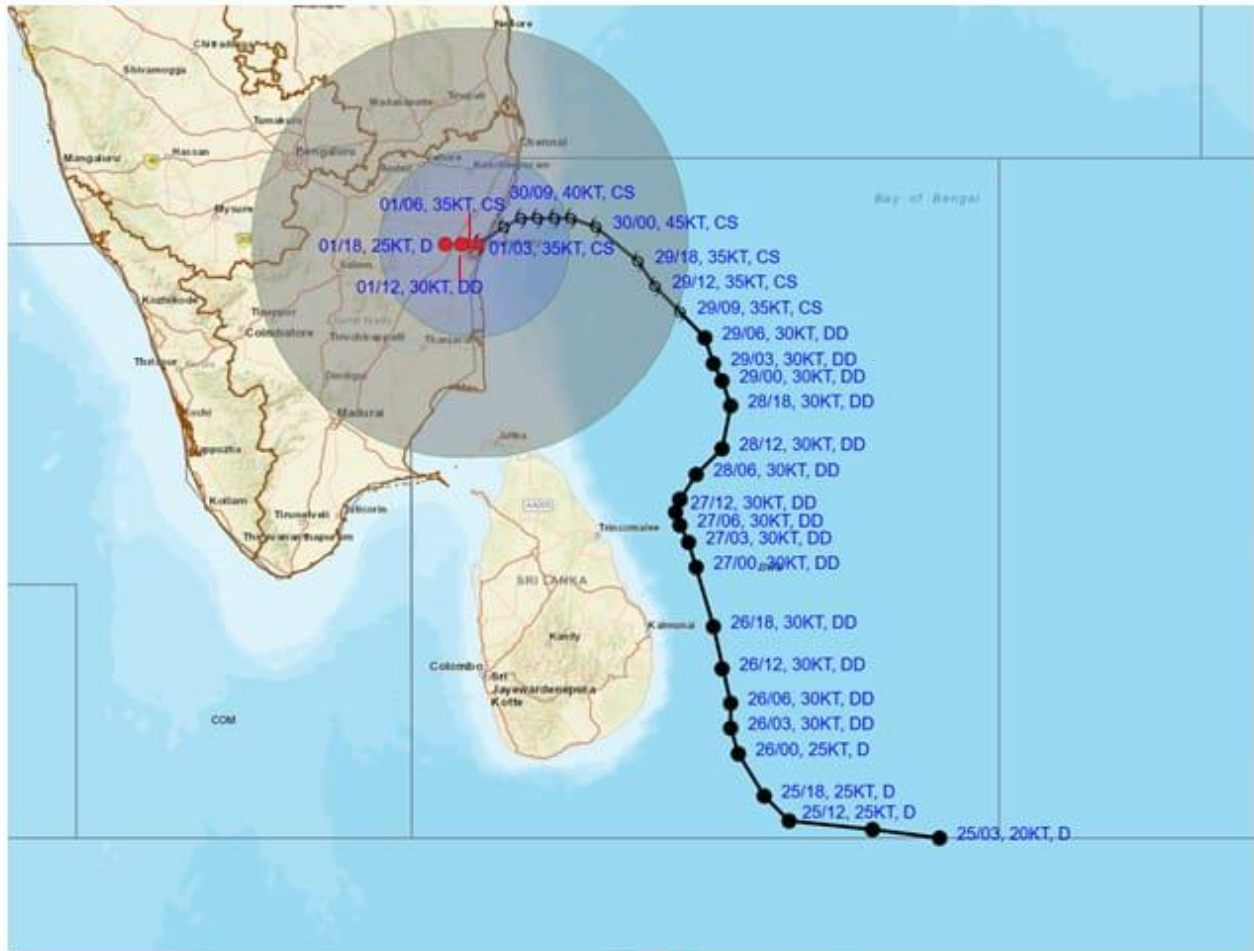


MAXIMUM REFLECTIVITY IMAGERY FROM DOPPLER WEATER RADAR, KARIKAL





OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF CYCLONIC STORM "FENGAL" OVER NORTH COASTAL TAMIL NADU AND PUDUCHERRY BASED ON 0300 UTC (0830 HRS. IST) OF 01st DECEMBER, 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 (≥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



OBSERVED AND FORECAST TRACK ALONG WITH CONE OF UNCERTAINTY OF CYCLONIC STORM "FENGAL" OVER NORTH COASTAL TAMILNADU AND PUDUCHERRY BASED ON 0300 UTC (0830 HRS. IST) OF 01ST DECEMBER, 2024.

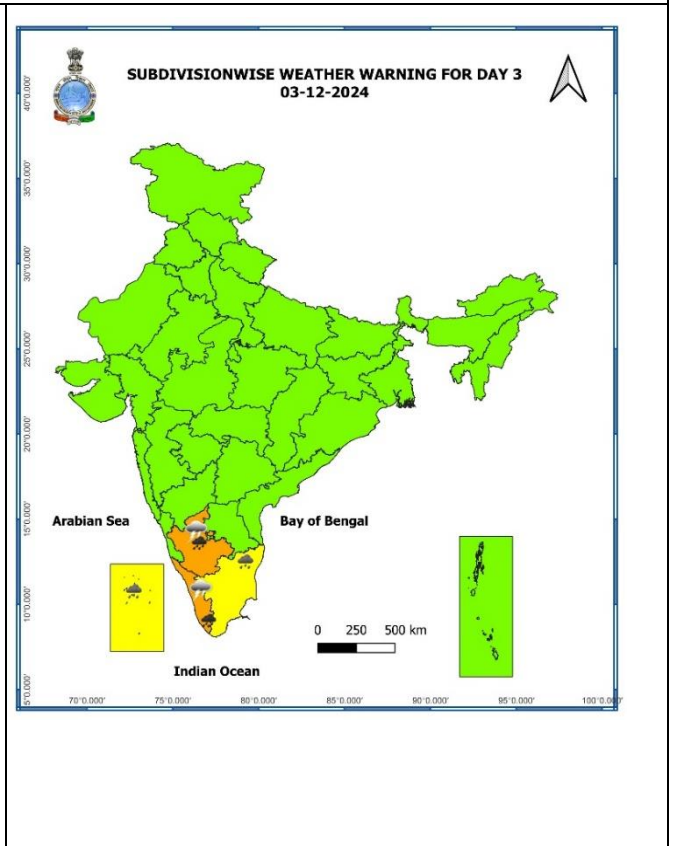
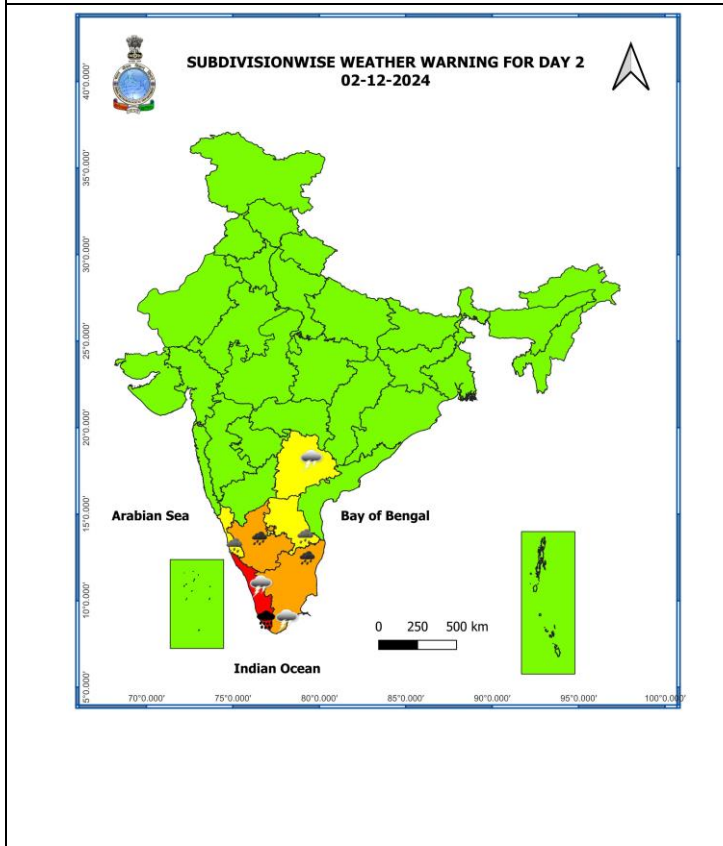
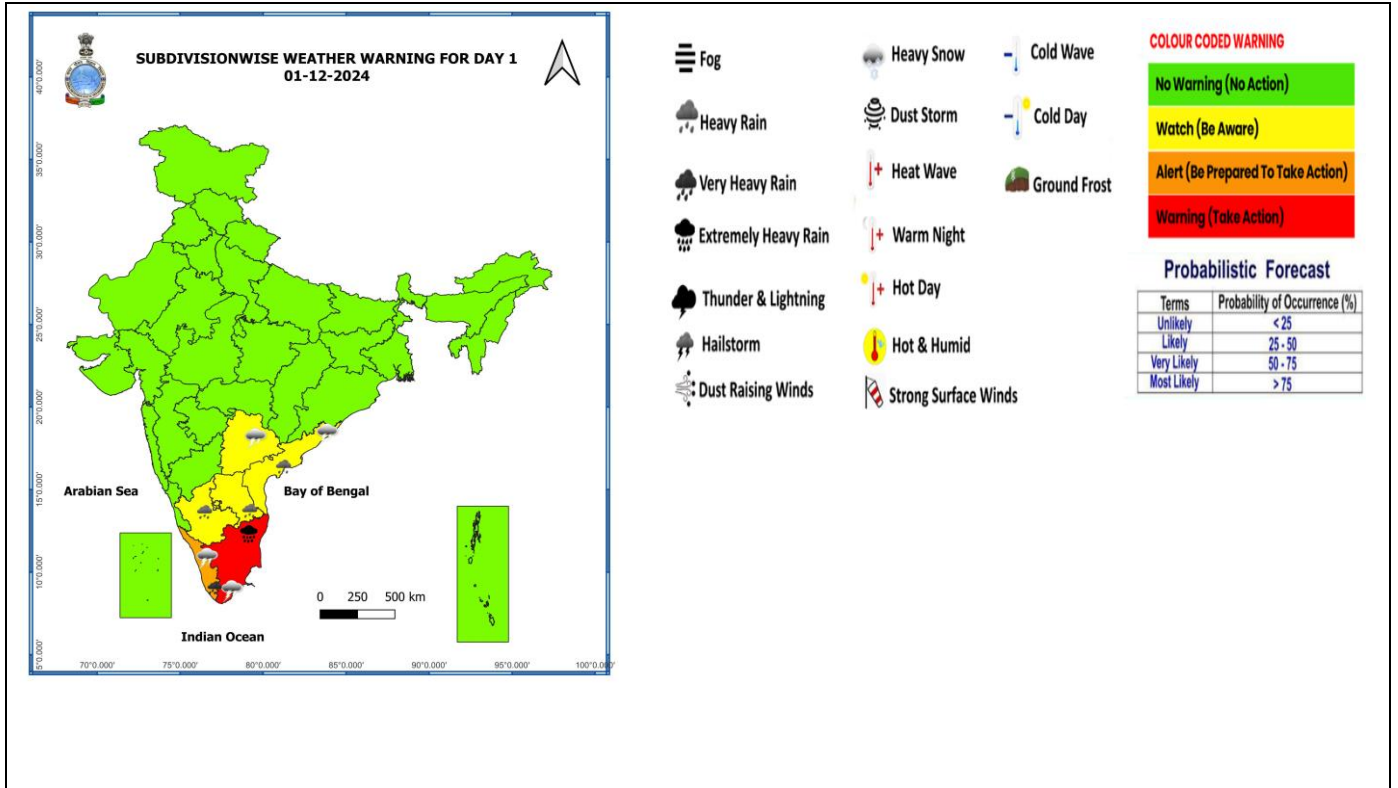


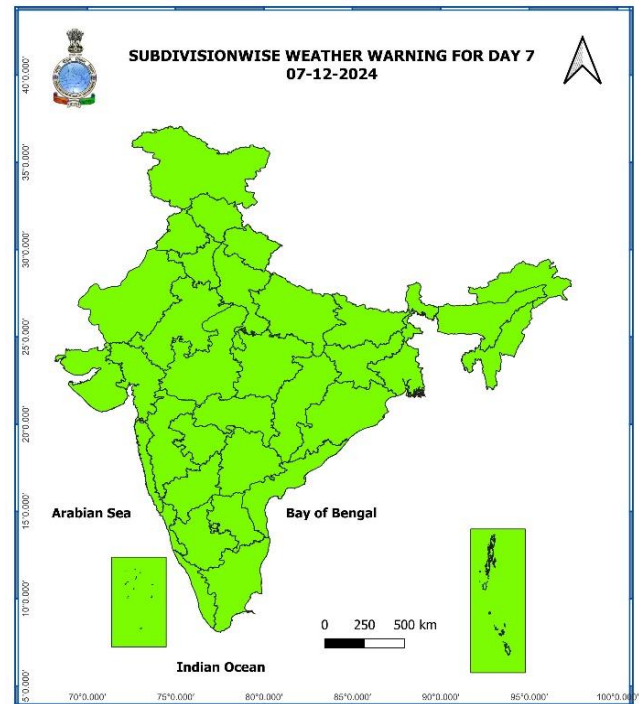
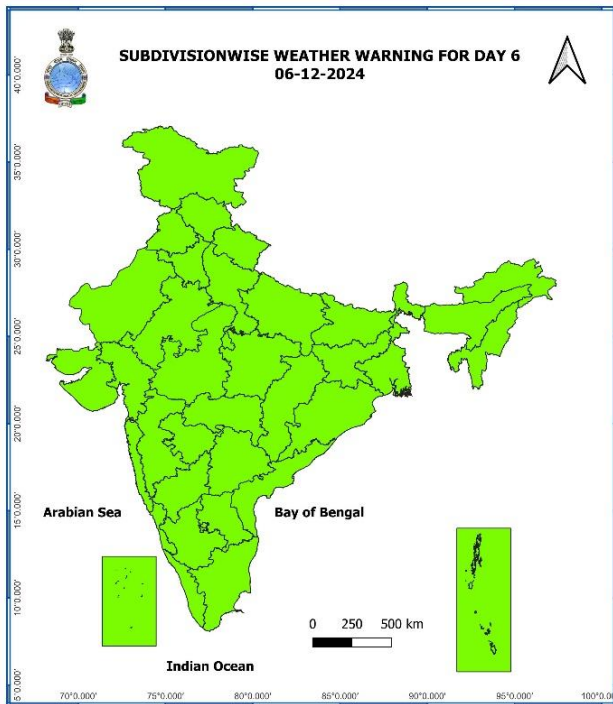
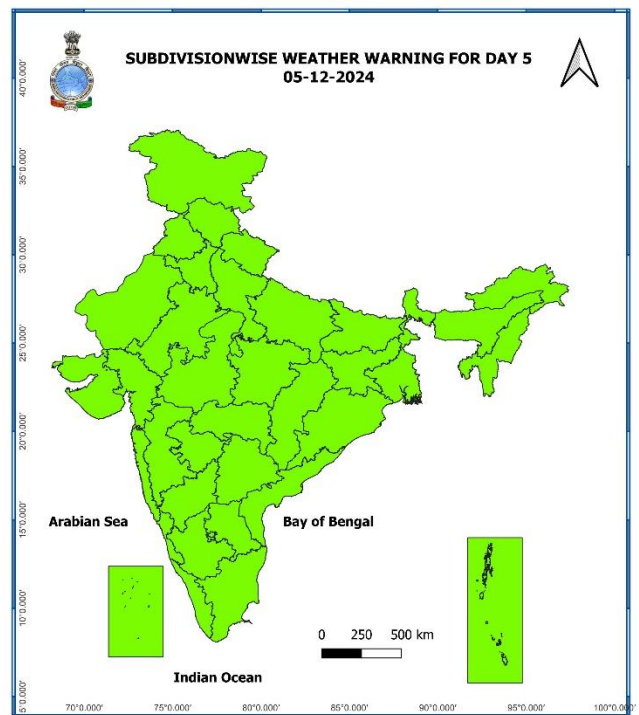
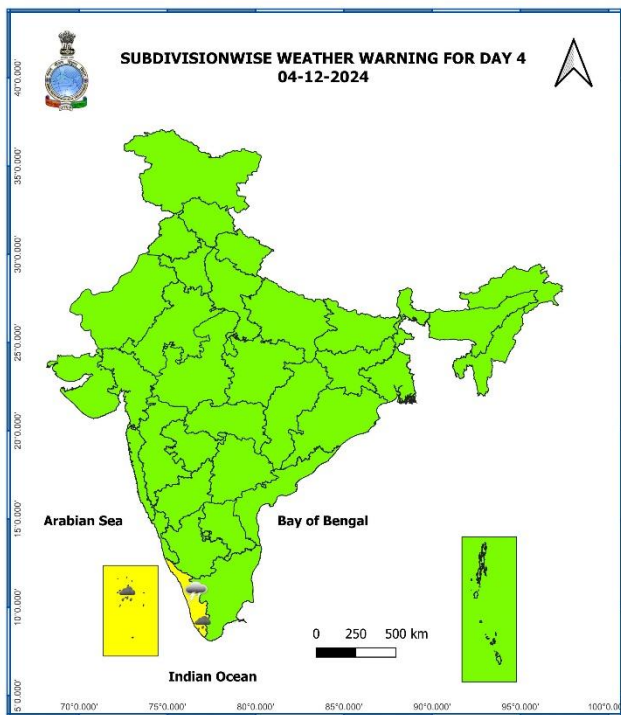
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 SuCS : SUPER CYCLONIC STORM (≥120 KT)

LESS THAN 34 KT
 34-47 KT
 ≥ 48 KT
 OBSERVED TRACK
 FORECAST TRACK
 CONE OF UNCERTAINTY

Forecast	DISTANCE (KM) AND DIRECTION FROM STATIONS		
	MAHABALIPURAM	MO PONDICHERRY	CHENNAI/MINAMB AKKAM
01.12.24/0300	80, SSW	0, NNW	120, SSW
01.12.24/0600	90, SW	10, WNW	120, SSW
01.12.24/1200	90, SW	20, W	130, SSW
01.12.24/1800	110, SW	50, W	140, SW

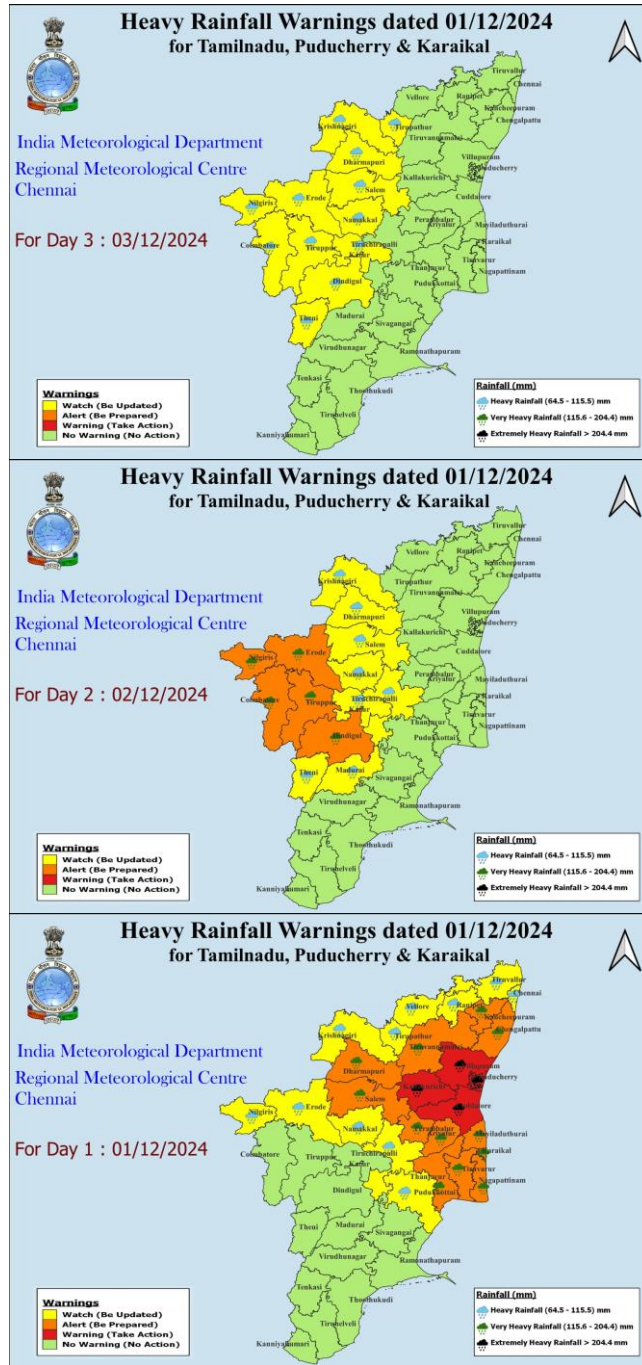
Weather Warning Graphics





- Action may be taken based on **ORANGE AND RED COLOUR** warnings.
- Vulnerable regions likely urban and hilly areas action may be initiated for heavy rainfall warning.
- As the lead period increases forecast accuracy decreases.

District-Wise Warning Graphics of Tamil Nadu & Puducherry



District-Wise Warning Graphics of Andhra Pradesh



India Meteorological Department
Meteorological Centre, Amaravati

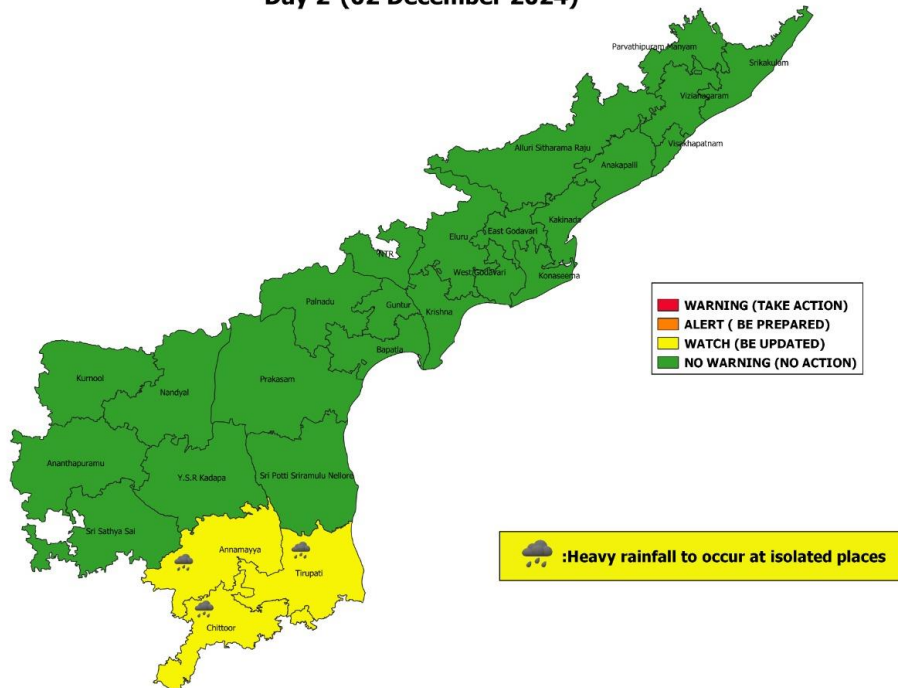
Rainfall warnings for Andhra Pradesh and Yanam.

Valid from 0830 hrs IST of 02.12.2024 to 0830 hrs IST of 03.12.2024

Date of Issue:- 01 December 2024



Day 2-(02 December 2024)



India Meteorological Department
Meteorological Centre, Amaravati

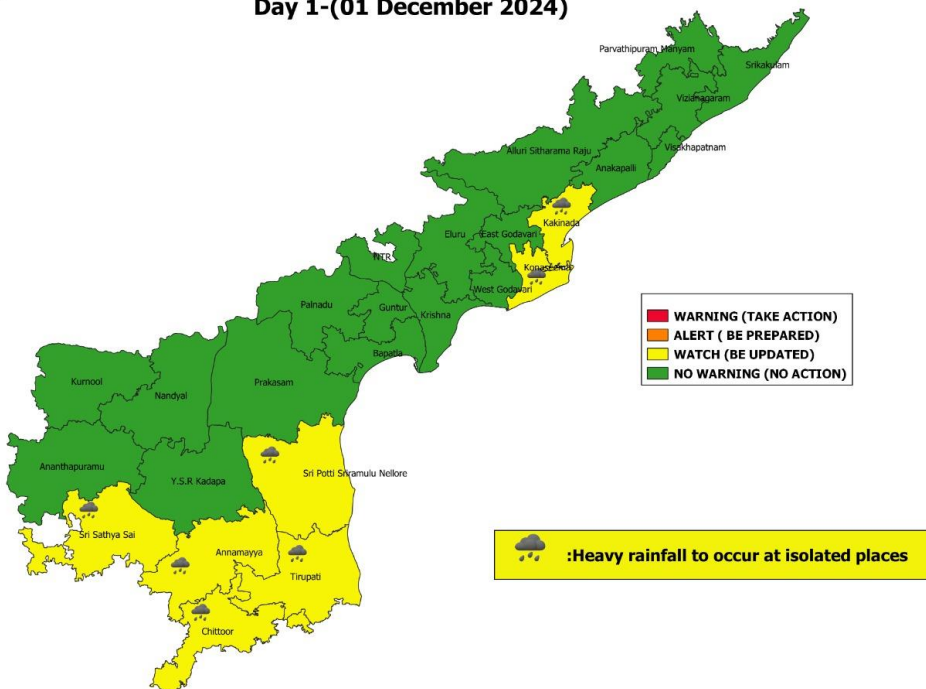
Rainfall warnings for Andhra Pradesh and Yanam.

Valid from 1300 hrs IST of 01.12.2024 to 0830 hrs IST of 02.12.2024

Date of Issue:- 01 December 2024



Day 1-(01 December 2024)



Flash Flood Guidance

24 hours Outlook for the Flash Flood Risk (FFR) till 0530 IST of 02-12-2024 :

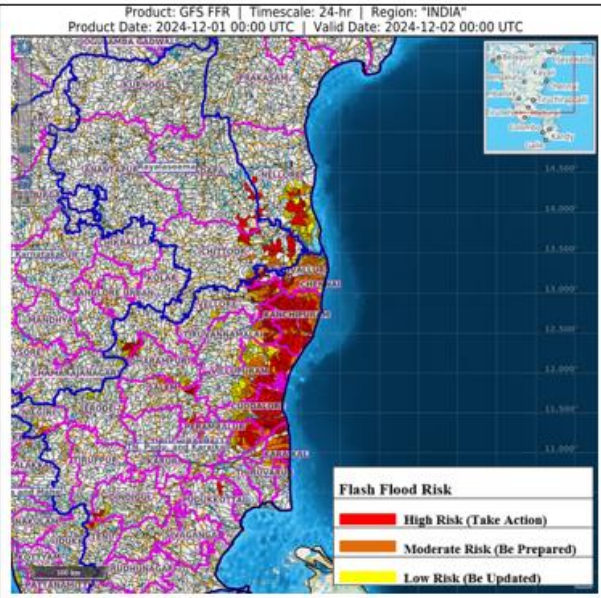
Moderate to High flash flood risk likely over few watersheds & neighbourhoods of following Meteorological Sub-divisions during next 24 hours.

Coastal Andhra Pradesh & Yanam – Thirupati and Nellore districts.

Rayalaseema - Chittoor and Kadapa districts.

Tamil Nadu - Puducherry & Karaikal – Chennai, Tiruvallir, Vellore, Kanchipuram, Tiruvannamalai, Villupuram, Puducherry, Cuddalore, Ariyalur, Perambalur and Karaikal districts.

Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over Area of Concern (AoC) as shown in map due to expected rainfall occurrence in next 24 hours.



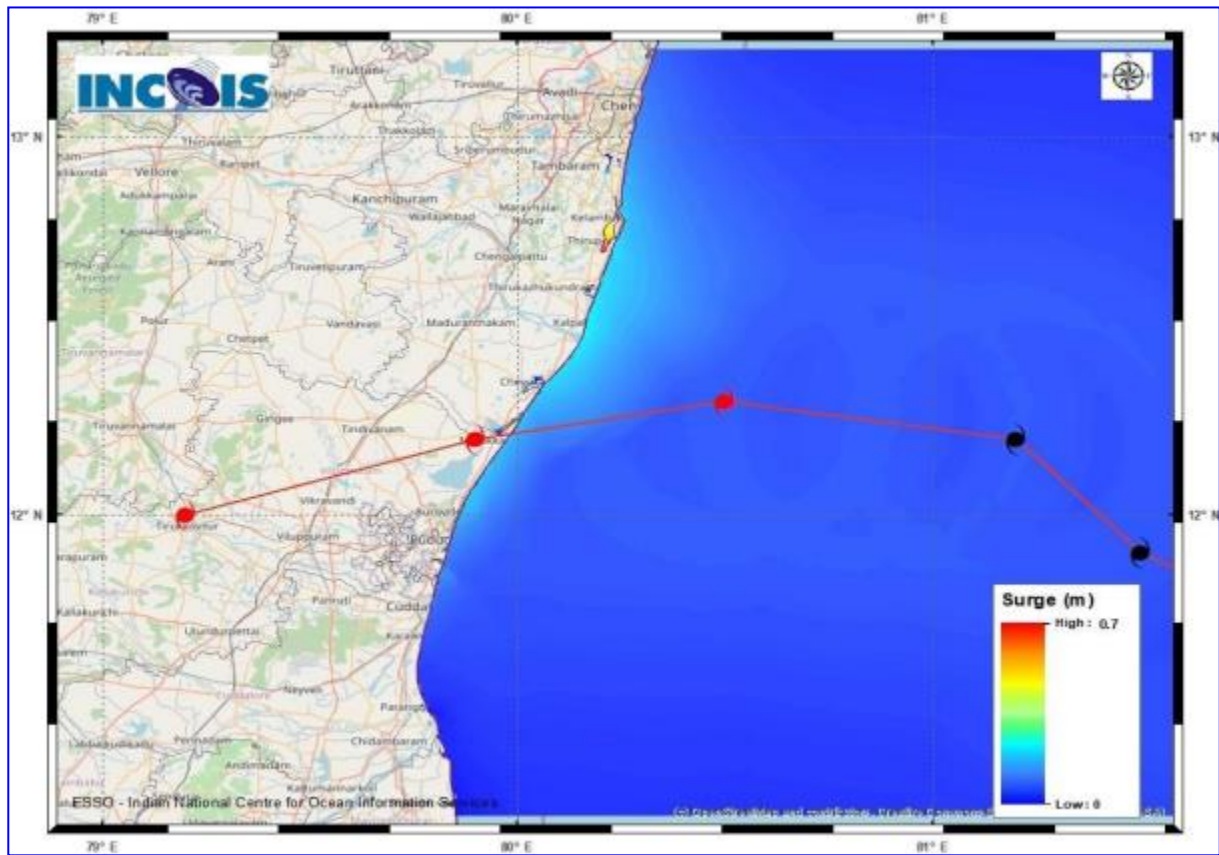
Flash Flood Risk

High Risk (Take Action)

Moderate Risk (Be Prepared)

Low Risk (Be Updated)

Storm Surge Warning



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	Muthukadu	0.2-0.7	Upto 0.13

Fishermen Warning Graphics

