



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

BULLETIN NUMBER: 12 (BOB/04/2021)

TIME OF ISSUE: 1245 HOURS IST

DATED: 26.09.2021

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Sub: Cyclonic Storm 'Gulab' (pronounced as Gul-Aab) over Northwest & adjoining west-central Bay of Bengal: Cyclone warning & post landfall outlook for north Andhra Pradesh and south Odisha coasts – Red Message

The Cyclonic Storm 'Gulab' (pronounced as Gul-Aab) over northwest and adjoining westcentral Bay of Bengal moved nearly westwards with a speed of 18 kmph during last 03 hours and lay centered at 1130 hrs IST of 26th September 2021, over northwest and adjoining westcentral Bay of Bengal near Lat. 18.4°N and Long. 85.9°E, about 140 km east-southeast of Gopalpur (Odisha) & 190 km east-northeast of Kalingapatnam (Andhra Pradesh).

It is likely to move nearly westwards and cross north Andhra Pradesh - south Odisha coasts between Kalingapatnam & Gopalpur, as a Cyclonic Storm with maximum sustained wind speed of 75-85 kmph gusting to 95 kmph, by mid-night of today, the 26th September, 2021. The Landfall process will commence from late evening of today.

Currently the Cyclone is being monitored by Doppler Weather RADAR at Vishakhapatnam. Light to moderate rainfall in association with the outer spiral bands of the system has commenced over south coastal Odisha and coastal Andhra Pradesh since early morning of today.

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
26.09.21/1130	18.4/85.9	75-85 gusting to 95	Cyclonic Storm
26.09.21/1730	18.5/85.0	75-85 gusting to 95	Cyclonic Storm
26.09.21/2330	18.6/84.1	70-80 gusting to 90	Cyclonic Storm
27.09.21/0530	18.7/83.2	55-65 gusting to 75	Deep Depression
27.09.21/1130	18.8/82.4	40-50 gusting to 60	Depression
27.09.21/2330	19.0/81.2	35-45 gusting to 55	Well marked low

Warnings:

(i) Rainfall

- 26th Sept.: Light to moderate rainfall at most places with heavy to very heavy falls at a few places & extremely heavy falls at isolated places very likely over south Odisha and north coastal Andhra Pradesh; heavy to very heavy falls at isolated places is also likely over Telangana and heavy falls at isolated places over north interior Odisha & Chhattisgarh.
- 27th Sept.: Light to moderate rainfall at most places with heavy to very heavy & extremely heavy falls at isolated places very likely over south Chhattisgarh, Telangana & Vidarbha; heavy to very heavy falls at isolated places over Odisha and heavy rainfall at isolated places over coastal West Bengal & North Chattisgarh.

(ii) Wind warning

- Gale wind speed reaching 75-85 kmph gusting to 95 kmph very likely to prevail over Northwest and adjoining Westcentral Bay of Bengal till late night of today, the 26th Sept.
- Squally wind speed reaching 55-65 kmph gusting to 75 kmph likely to prevail along and off Odisha-North Andhra Pradesh coasts. It will gradually increase becoming gale wind speed reaching 75-85 kmph gusting to 95 kmph from afternoon of 26th till midnight along & off north Andhra Pradesh (Srikakulam, Vizianagaram, Visakhapatnam Districts) and south Odisha coasts (Ganjam, Gajapati Districts), 55-65 kmph gusting to 75 kmph along & off Khordha, Puri, Raigada & Koraput districts, 50-60 kmph gusting to 70 kmph over Navrangpur & Malkangiri districts of Odisha. Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to prevail along & off remaining parts of Odisha & Andhra Pradesh & West Bengal coasts and also over northeast Bay of Bengal on 26th Sept.

(iii) Sea condition

- Sea condition will be 'high' over Northwest and adjoining Westcentral Bay of Bengal and along and off Odisha, West Bengal and North Andhra Pradesh till late night / early morning of tomorrow and improve gradually thereafter.
- Sea condition will be rough to very rough over east-central & adjoining northeast Bay of Bengal on 26th Sept.

(iv) Storm surge warning

Tidal wave of about 0.5 m height above the astronomical tide likely to inundate low lying areas of Srikakulam, Vizianagaram, Ganjam districts during the time of landfall.

(v) Fishermen Warning

- The fishermen are advised not to venture into east-central & adjoining northeast Bay of Bengal and Andaman Sea on 26th Sept.
- The fishermen are advised not to venture into northwest & adjoining westcentral Bay of Bengal and along & off Odisha, West Bengal & North Andhra Pradesh coasts till 27th Sept.

(vi) Post Landfall outlook for south Odisha, north Andhra Pradesh, south Chhattisgarh and adjoining Telangana

After the landfall, the system is likely to maintain the cyclonic storm intensity with slight weakening of wind speed during the subsequent 06 hours over south Odisha & adjoining north coastal Andhra Pradesh. It is likely to move west-northwestwards across south Odisha & south Chhattisgarh and weaken gradually into a Depression during the subsequent 12 hours.

Gale wind speed reaching 60-70 kmph gusting to 80 kmph is likely to prevail over north Andhra Pradesh (Srikakulam, Vizianagaram, Visakhapatnam Districts) and south Odisha coasts (Ganjam, Gajapati Districts) from the mid-night of today to early morning of 27th Sept. Squally wind speed reaching 50-60 kmph gusting to 70 kmph likely to prevail over Khordha, Puri, Raigada & Koraput districts, 40-50 kmph gusting to 60 kmph over Navrangpur & Malkangiri districts of Odisha during the same period.. Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to prevail over south interior Odisha, south Chhattisgarh & adjoining north Telangana on 27th Sept.

(vii) EXPECTED IMPACT & ACTION SUGGESTED due to Strong winds & very Heavy/Extremely heavy Rainfall.

- Damage to thatched huts.
- Minor damage to power and communication lines due to breaking of branches and uprooting of trees.
- Major damage to Kutcha and minor damage to Pucca roads.
- Sea water inundation in low lying areas after erosion of Kutcha embankments.
- Localized Flooding of roads, inundation and 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 cities due to water logging in roads. Possibilities of damage to vulnerable structure.
- Localized Landslides/Mudslides
- Damage to standing crops and horticulture including paddy, banana, papaya trees and orchards due to inundation and strong winds.
- It may lead to riverine flooding in some river catchments (for riverine flooding please visit Web page of CWC)

Action Suggested

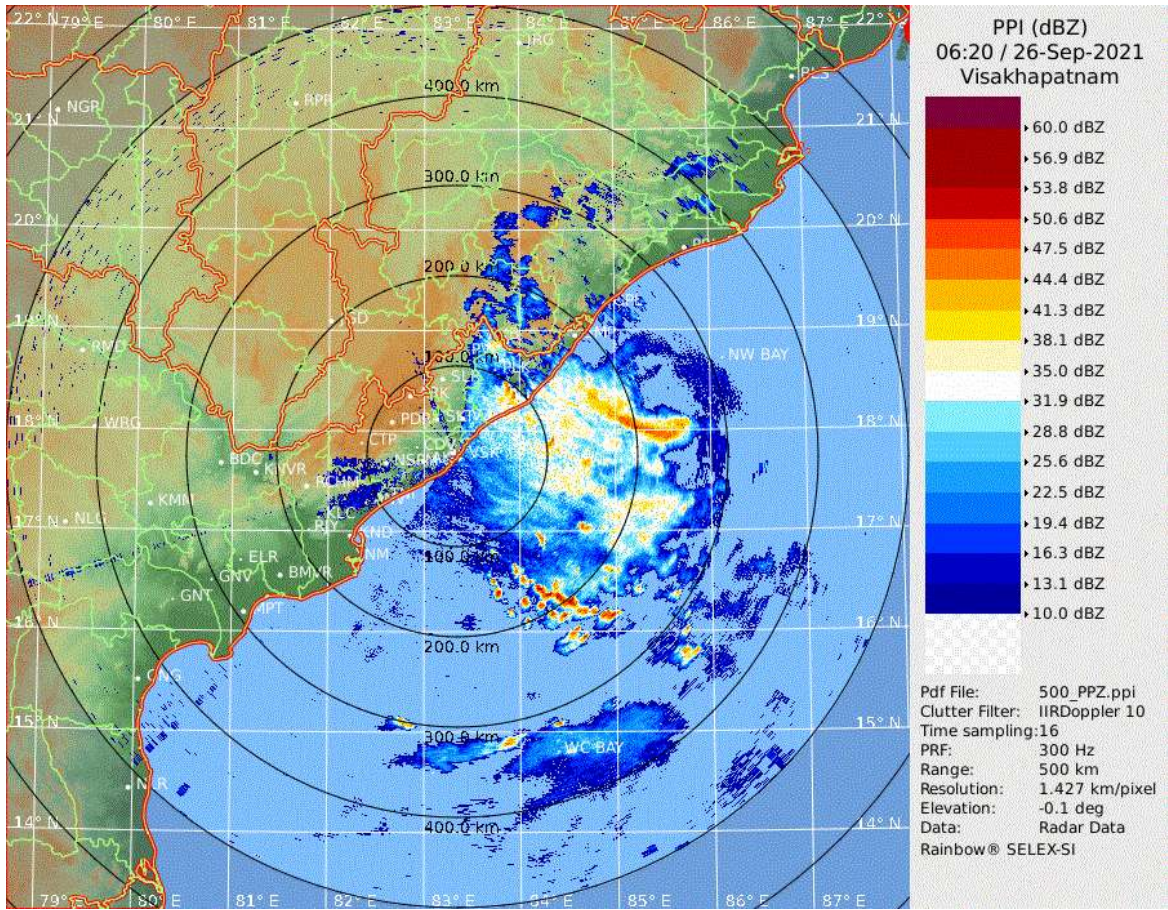
- Complete suspension of fishing operations, onshore & off-shore activities over the above region till 27th Sept. morning.
- Stay indoors and in safe places.
- Avoid staying in vulnerable structure.
- Avoid going to areas that face the water logging problems often.
- Check for traffic congestion on your route before leaving for your destination.
- Follow any traffic advisories that are issued in this regard.
- Follow IMD warnings for updates

(Sunitha Devi. S)
Scientist F, RSMC, New Delhi

Next bulletin will be issued at 1730 hrs IST of today, the 26th September, 2021.

Copy to: ACWC Kolkata/ Chennai/CWC Bhubaneswar/CWC Visakhapatnam/MC Ranchi/MC Hyderabad/MC Raipur

LEGEND: Heavy Rainfall: 64.5 to 115.5mm, **Very Heavy Rainfall:** 115.6 to 204.4mm, **Extremely Heavy Rainfall:** 204.5mm or more. **Many Places:** 51% to 75% of the stations, **Most Places:** more than 76% of total stations, **Isolated Places:** Less than 25% of total stations



Reflectivity imagery from Doppler weather RADAR Vishakhapatnam based on 1200 Noon of 26th September 2021.

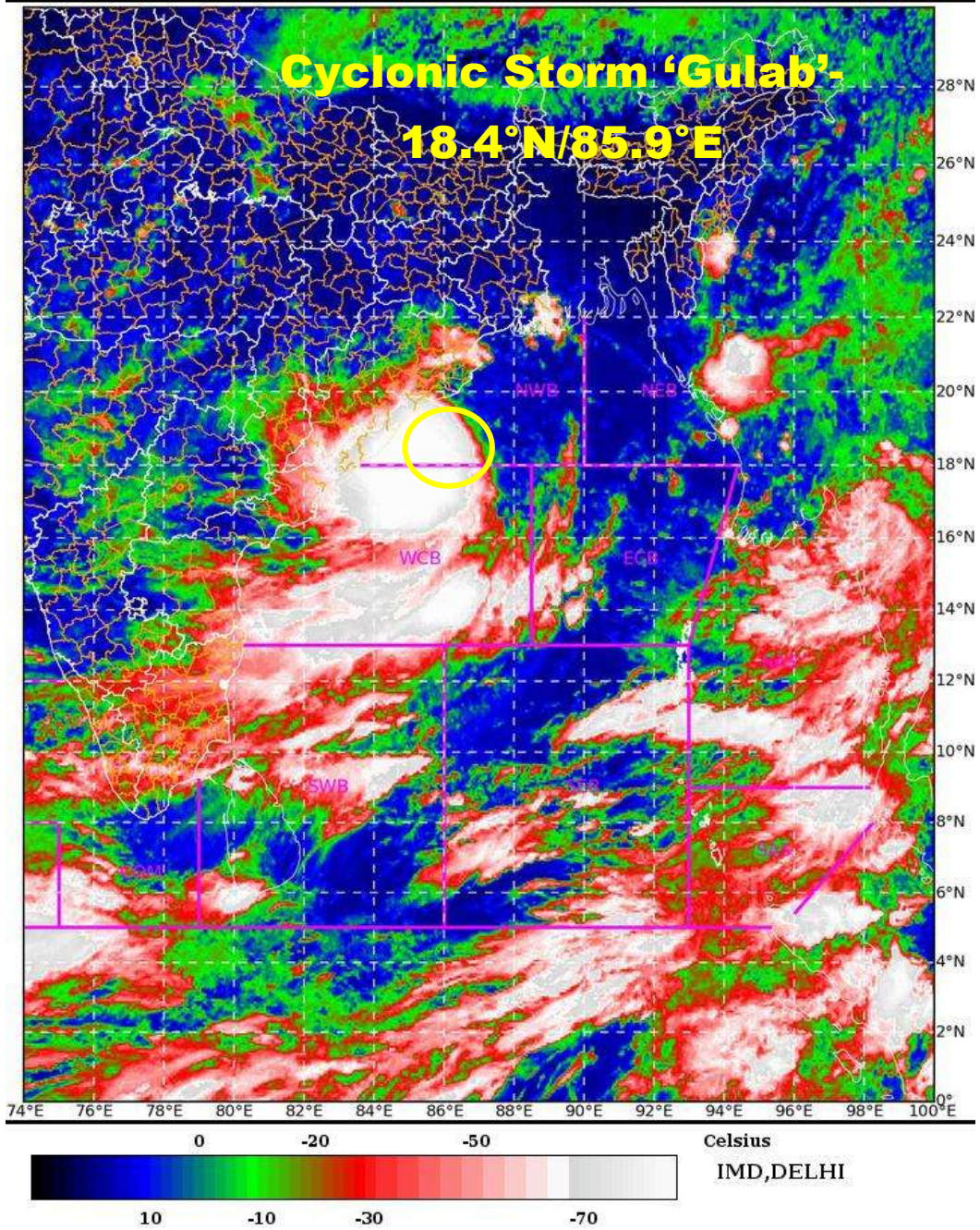
SAT : INSAT-3D IMG

26-09-2021/(0600 to 0626) GMT

IMG_TIR1_TEMP 10.8 um

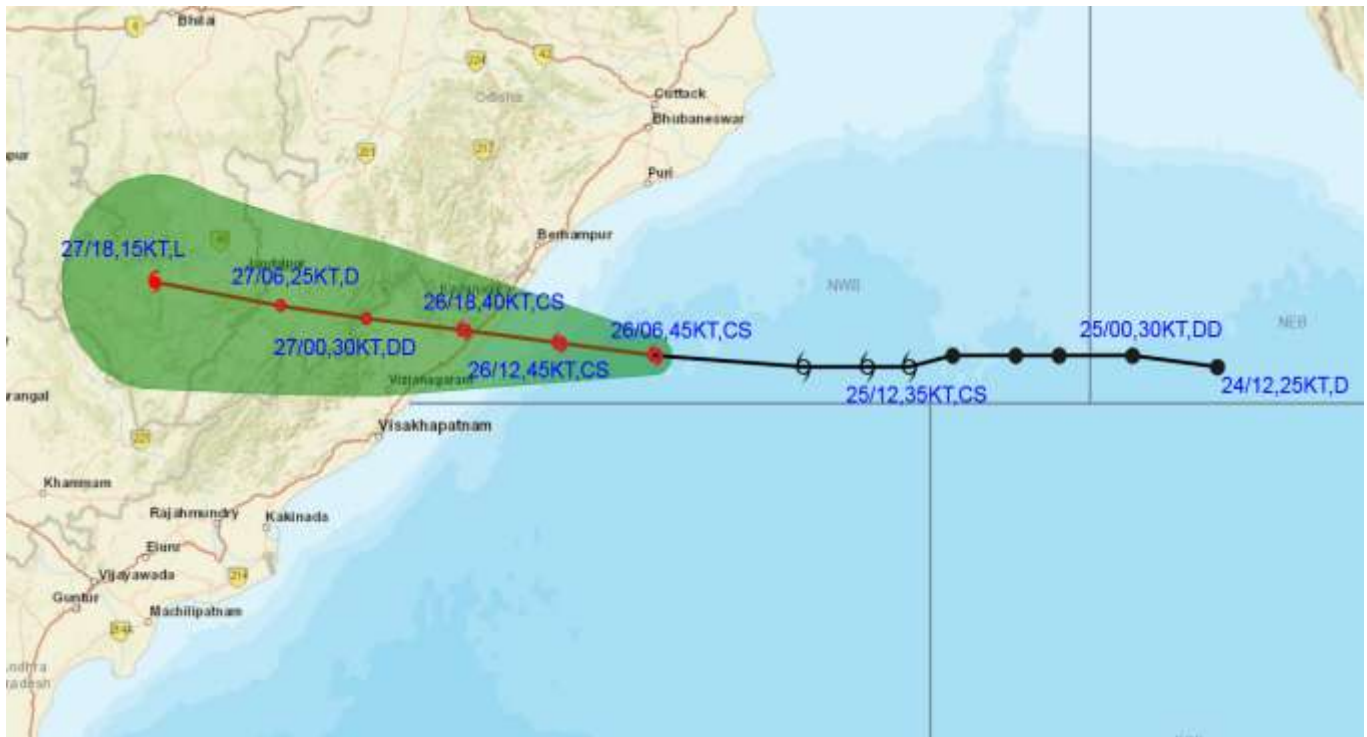
26-09-2021/(1130 to 1156) IST

L1C Mercator





OBSERVED AND FORECAST TRACK OF CYCLONIC STORM GULAB OVER NORTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL BASED ON 0600 UTC OF 26TH SEPTEMBER, 2021

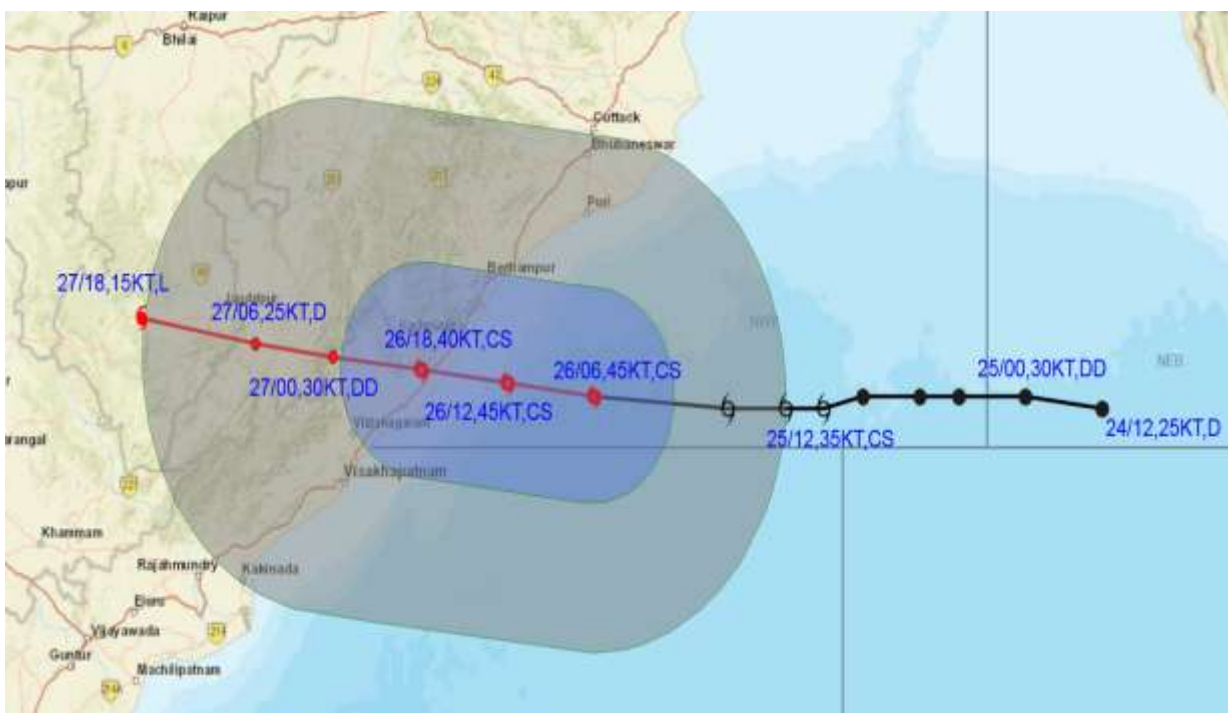


DATE/TIME IN UTC
 IST=UTC + 0530
 L: LOW PRESSURE AREA
 WML: WELL MARKED LOW PRESSURE AREA
 D: DEPRESSION (17-27 KT)
 DD: DEEP DEPRESSION (28-33 KT)
 CS: CYCLONIC STORM (34-47 KT)
 SCS: SEVERE CYCLONIC STORM (48-63KT)
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
 ESCS: EXTREMELY SEVERE CYCLONIC STORM (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 QUADRANT WIND DISTRIBUTION OF CYCLONIC STORM GULAB OVER NORTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL BASED ON 0600 UTC OF 26TH SEPTFMBR. 2021

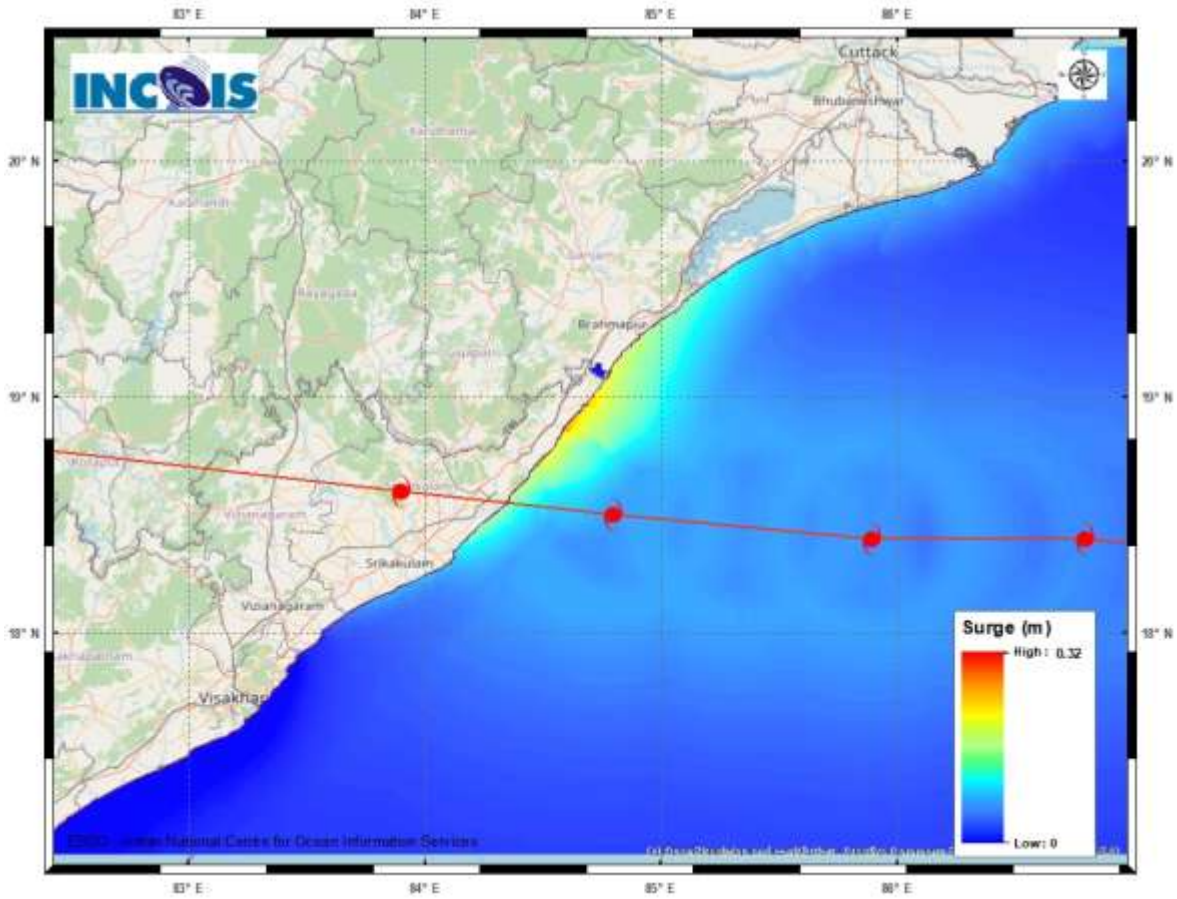


DATE/TIME IN UTC
 IST=UTC + 0530
 L: LOW PRESSURE AREA
 WML: WELL MARKED LOW PRESSURE AREA
 D: DEPRESSION (17-27 KT)
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 CS: CYCLONIC STORM (34-47 KT)
 SCS: SEVERE CYCLONIC STORM (48-63KT)
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
 ESCS: EXTREMELY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

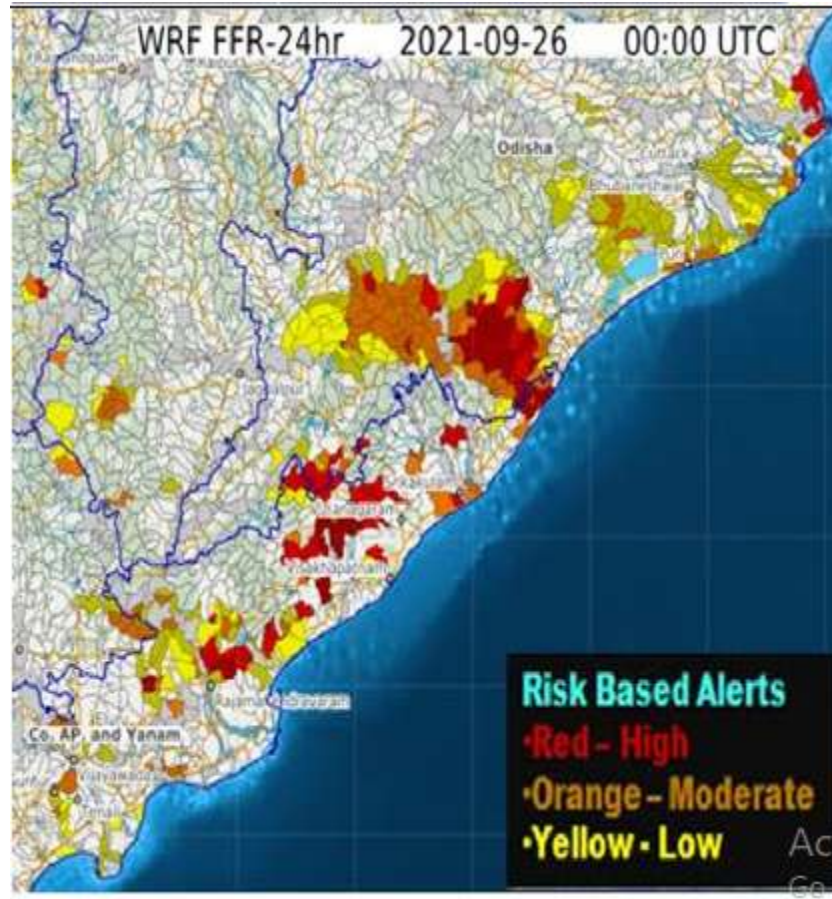


Storm surge graphics from INCOIS for the current system (BoB/04/2021)

Peak storm surge upto 0.5 m over and above the astronomical tide near Tekkali, Srikulam, Andhra Pradesh.

24 hours Outlook for the Flash Flood Risk(FFR) till 0530 IST of 27.09.2021:

Moderate to High Risk over few watersheds and neighborhood of South Odisha adjoining Coastal Andhra Pradesh met subdivision in next 24 hours. Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over the area as shown in map due to expected rainfall occurrence in next 24 hours.



Flash Flood Risk (FFR)

Flash Flood Risk products of 12-hour, 24-hour and 36-hour are relative frequencies of positive flash flood threat for the entire forecast lead time interval. This is a measure of the forecast flash flood occurrence frequency and may be considered as a flash flood outlook.

Sub-division wise heavy rainfall warning for next 4 days

