



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI**

**TROPICAL CYCLONE ADVISORY NO. 19**

**FROM: RSMC TROPICAL CYCLONES NEW DELHI DATED 05.12.2023**

**FROM: RSMC –TROPICAL CYCLONES, NEW DELHI**

**TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)  
STORM WARNING CENTRE, BANGKOK (THAILAND)  
STORM WARNING CENTRE, COLOMBO (SRILANKA)  
STORM WARNING CENTRE, DHAKA (BANGLADESH)  
STORM WARNING CENTRE, KARACHI (PAKISTAN)  
METEOROLOGICAL OFFICE, MALE (MALDIVES)  
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)  
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)  
NATIONAL CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)  
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)  
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)  
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)**

**TROPICAL CYCLONE ADVISORY NO. 19 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0800 UTC OF 05.12.2023 BASED ON 0600 UTC OF 05.12.2023**

**SUB: SEVERE CYCLONIC STORM “MICHAUNG” (PRONOUNCED AS MIGJAUM) OVER WESTCENTRAL BAY OF BENGAL ALONG AND OFF SOUTH ANDHRA PRADESH COAST (CYCLONE WARNING FOR ANDHRA PRADESH COAST: **RED MESSAGE**)**

THE SEVERE CYCLONIC STORM “MICHAUNG” (PRONOUNCED AS MIGJAUM) OVER WESTCENTRAL BAY OF BENGAL ALONG AND OFF SOUTH ANDHRA PRADESH COAST MOVED NORTHWARDS WITH A SPEED OF 10 KMPH DURING PAST 06 HOURS AND LAY CENTERED AT 0600UTC OF TODAY, THE 5<sup>TH</sup> DECEMBER, 2023 OVER THE SAME REGION NEAR LATITUDE 15.45°N AND LONGITUDE 80.25°E, ABOUT, ABOUT 20 KM EAST OF ONGOLE (43221), 50 KM SOUTH-SOUTHWEST OF BAPATLA(43220), 70 KM NORTH-NORTHEAST OF KAVALI(43243), 110 KM NORTH-NORTHEAST OF NELLORE(43245), AND 120 KM SOUTHWEST OF MACHILIPATNAM (43185).

THE SYSTEM IS LIKELY TO MOVE NEARLY NORTHWARDS AND CROSS SOUTH ANDHRA PRADESH COAST CLOSE TO BAPATLA (43220) DURING NEXT 2 HOURS AS A SEVERE CYCLONIC STORM WITH A MAXIMUM SUSTAINED WIND SPEED OF 90-100 KMPH GUSTING TO 110 KMPH.

LANDFALL PROCESS IS CONTINUING AND LIKELY TO CONTINUE FOR NEXT 3 HOURS.

## TRACK AND INTENSITY FORECASTS:

DATE/TIME (UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
05.12.23/0600	15.45/80.25	90-100 KMPH GUSTING TO 110 KMPH	SEVERE CYCLONIC STORM
05.12.23/1200	16.10/80.40	70-80 KMPH GUSTING TO 90 KMPH	CYCLONIC STORM
05.12.23/1800	16.60/80.80	55-65 KMPH GUSTING TO 75 KMPH	DEEP DEPRESSION
06.12.23/0000	17.20/81.40	40-50 KMPH GUSTING TO 60 KMPH	DEPRESSION
06.12.23/0600	17.70/82.10	20-30 KMPH GUSTING TO 40 KMPH	LOW PRESSURE

**INSAT-3D IMAGERY AT 0600 UTC OF 5<sup>TH</sup> DECEMBER**, INDICATES THE ORGANISATION OF CLOUD MASS. ASSOCIATED INTENSITY IS T3.5 WITH CURVED BAND PATTERN. ASSOCIATED BROKEN LOW/MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER WESTCENTRAL BAY OF BENGAL AND COASTAL ANDHRA PRADESH BETWEEN LATITUDE 13.5°N TO 17.5°N LONGITUDE 80.0E TO 82.5E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 90 DEGREE CELSIUS.

**MICROWAVE PASS OF 0102Z** SHOWS CENTRE CLOSE TO THE COAST WITH CURVED BAND EMBEDDED WITH VERY INTENSE CONVECTION OVER WEST CENTRAL BAY OF BENGAL AND ADJOINING AREAS OF ANDHRA PRADESH WITH ANOTHER VERY INTENSE CONVECTIVE BAND TO THE NE OF THE SYSTEM CENTRE.

**RADAR PICTURE OF MACHILIPATNAM(43185) AT 0600 UTC** SHOWS THE SYSTEM IS OVER WESTCENTRAL BAY OF BENGAL ALONG AND OFF SOUTH ANDHRA PRADESH COAST AND PART OF THE WALL CLOUD REGION LIES OVER LAND.

**COASTAL SURFACE OBSERVATIONS AT 0600UTC OF TODAY 5<sup>TH</sup> DEC 2023:** KAVALI (04243) WITH MEAN SEA LEVEL PRESSURE AS 1001 HPA, WIND 230°/14 KNOTS; ONGOLE (43221) WITH MEAN SEA LEVEL PRESSURE 996.5 HPA WIND 50°/5 KNOTS; NELLORE (43245) WITH MEAN SEA LEVEL PRESSURE 1003.8 HPA, WIND 230°/14 KNOTS AND BAPTILA (43220) WITH MEAN SEA LEVEL PRESSURE 1002.9 HPA, WIND 110°/19 KNOTS

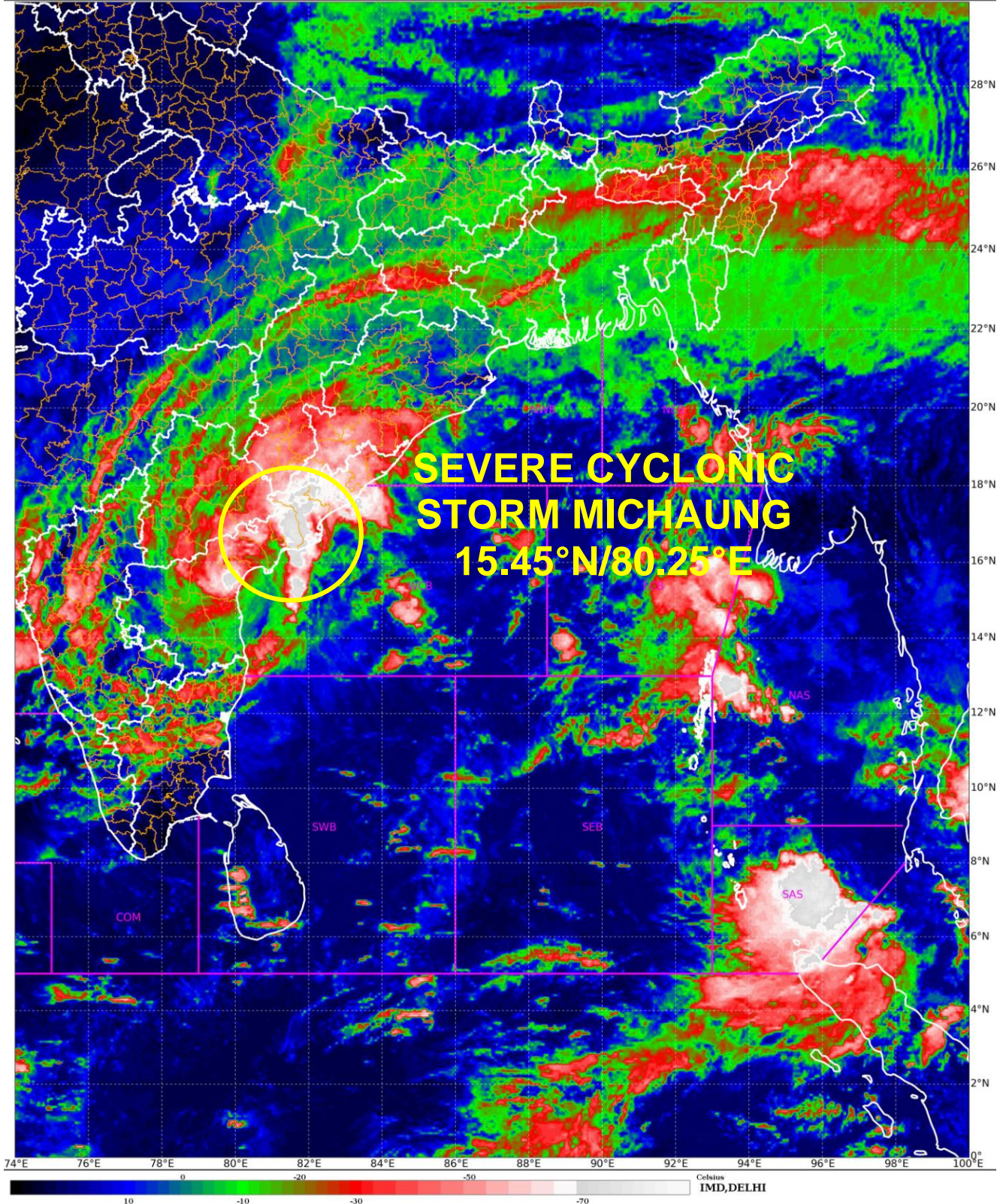
ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 50 KNOTS GUSTING TO 60 KNOTS. ESTIMATED CENTRAL PRESSURE IS 988 HPA. SEA CONDITION IS **HIGH TO VERY HIGH SEA CONDITION** IS PREVAILING OVER **WESTCENTRAL BAY OF BENGAL AND ALONG & OFF SOUTH ANDHRA PRADESH COAST**.

CURRENT ENVIRONMENTAL FEATURES INDICATE, THE LOW LEVEL VORTICITY OF ABOUT  $200 \times 10^{-6} \text{S}^{-1}$  AROUND SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. POSITIVE LOW LEVEL CONVERGENCE HAS INCREASED AND IS ABOUT  $10 \times 10^{-5} \text{S}^{-1}$  TO THE EAST OF SYSTEM CENTRE. POSITIVE UPPER LEVEL DIVERGENCE IS ABOUT  $20 \times 10^{-5} \text{S}^{-1}$  TO

CONSIDERING ALL THE ABOVE, THE SYSTEM IS LIKELY TO MOVE NEARLY NORTHWARDS AND CROSS SOUTH ANDHRA PRADESH COAST CLOSE TO BAPATLA (43220) DURING NEXT 2 HOURS AS A SEVERE CYCLONIC STORM WITH A MAXIMUM SUSTAINED WIND SPEED OF 90-100 KMPH GUSTING TO 110 KMPH.

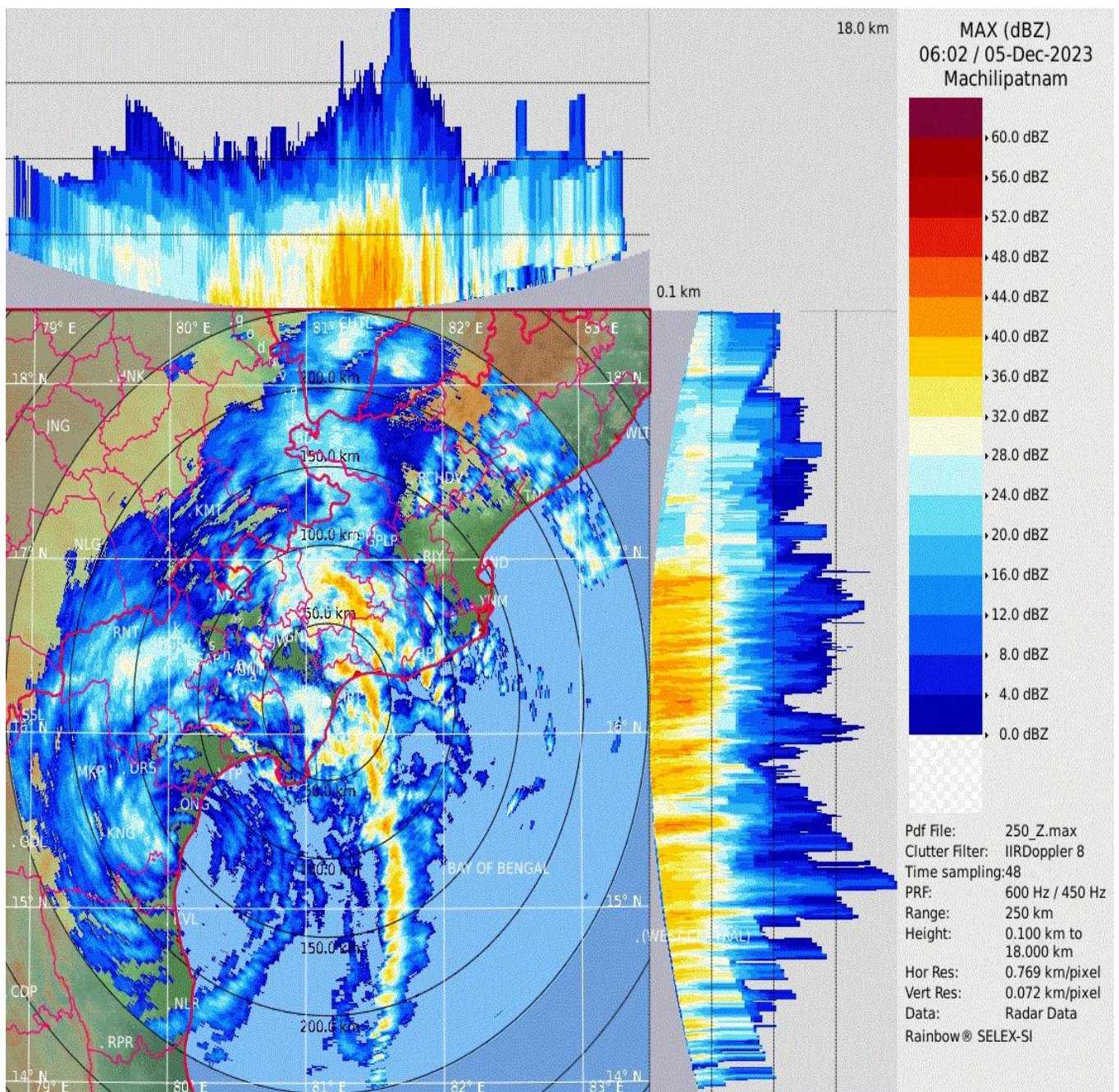
LANDFALL PROCESS IS CONTINUING AND LIKELY TO CONTINUE FOR NEXT 3 HOURS.

(DR TRISANU BANIK)  
RSMC NEW DELHI



*INSAT 3D Image based on 0627 UTC (1130 hrs IST) of 05th Dec 2023*

Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C  
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION):NIL: 0%, LOW: 1-33%, , MODERATE: 34-66% AND HIGH: 67-100%  
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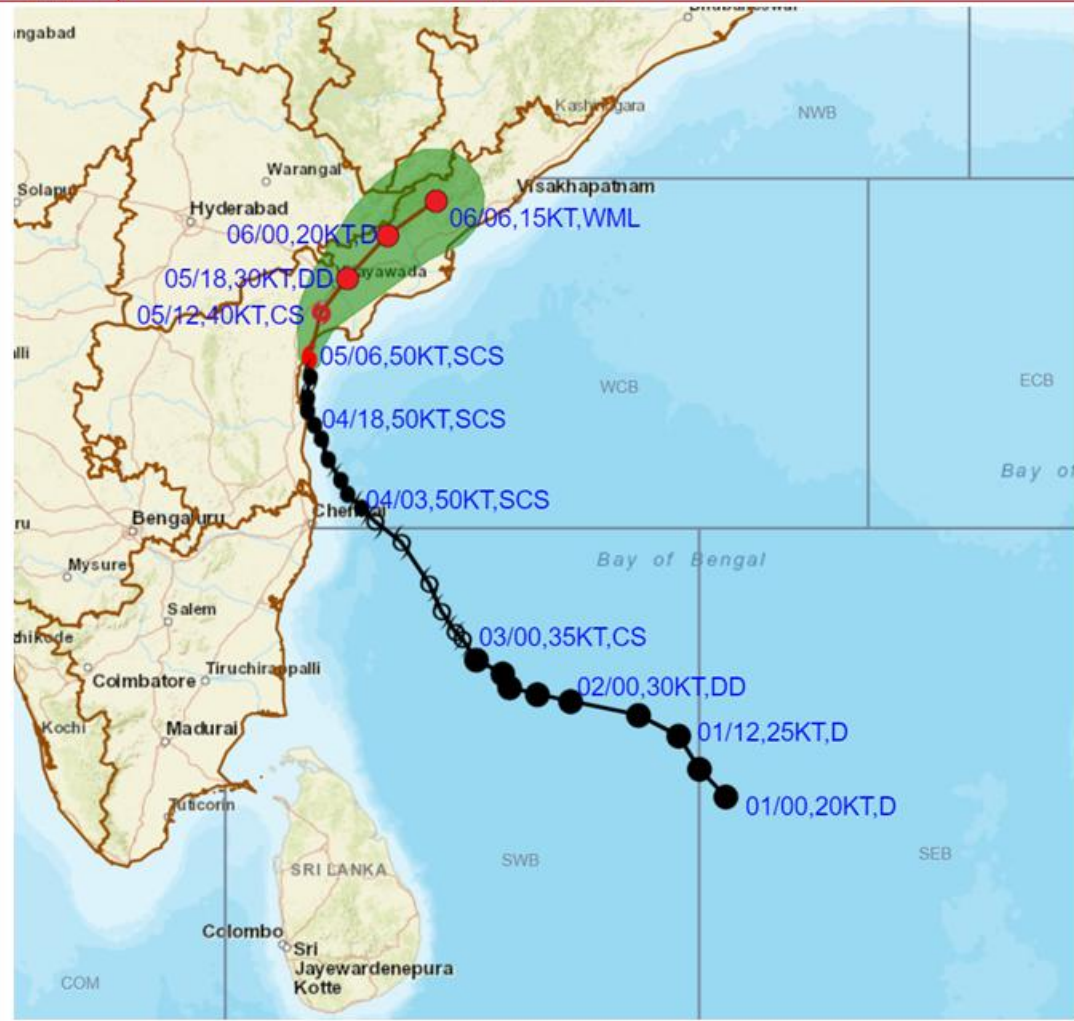


**Maximum Reflectivity from DWR Machilipatnam based on 0602 UTC  
(1132 hrs IST) of 05th December 2023**

Cloud distribution: (a) Isolated: <25%, Scattered: 25-50%, Broken: 51-75%, Solid: >75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C  
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION): NIL: 0%, LOW: 1-33%, MODERATE: 34-66% AND HIGH: 67-100%  
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**OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH SEVERE CYCLONIC STORM "MICHAUNG" OVER WESTCENTRAL BAY OF BENGAL ALONG AND OFF SOUTH ANDHRA PRADESH COAST BASED ON 0600 UTC (1130 IST) OF 5<sup>TH</sup> DECEMBER 2023.**



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

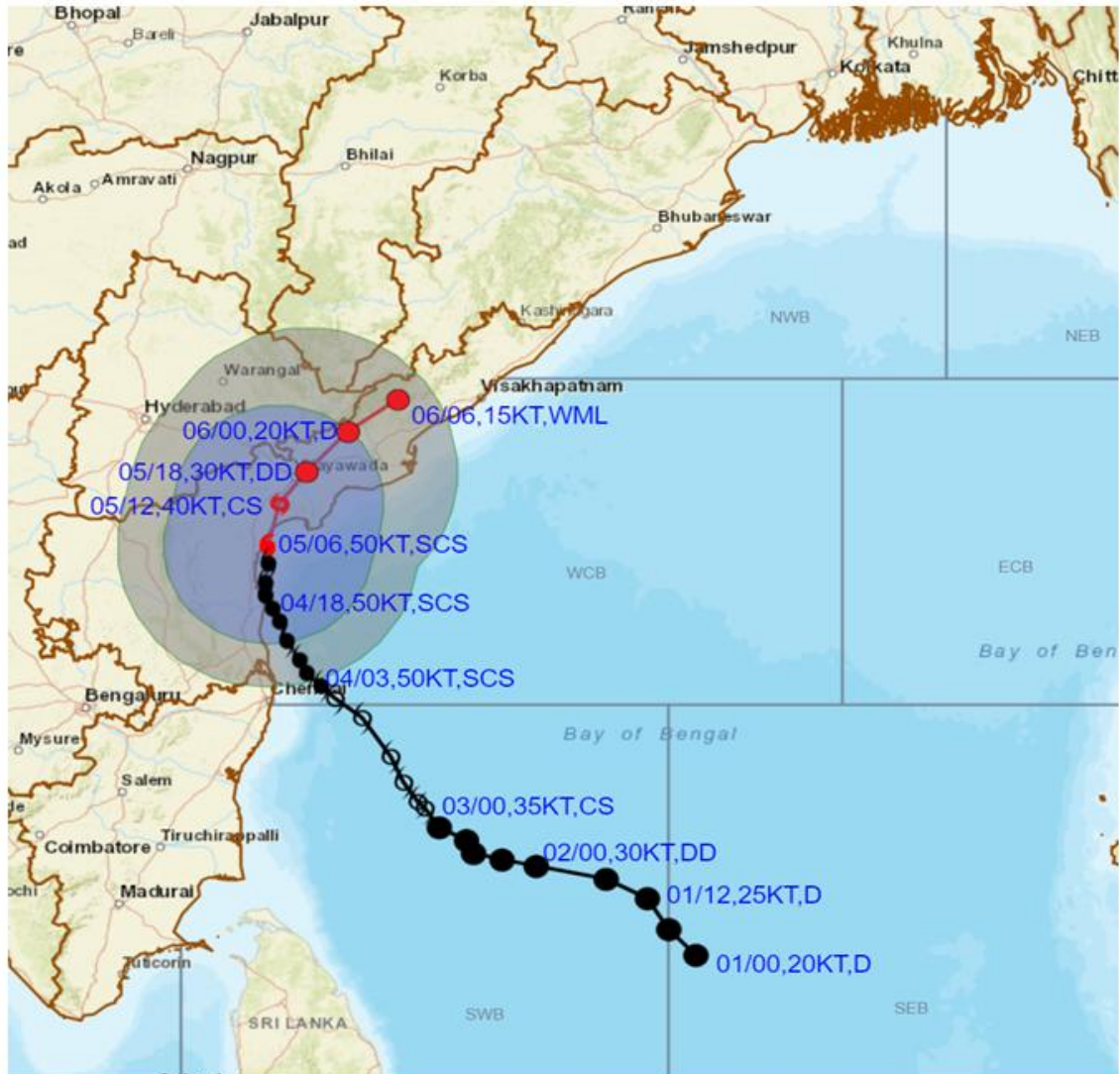
— FORECAST TRACK

▲ CONE OF UNCERTAINTY

Forecast	DISTANCE (KM) AND DIRECTION FROM STATIONS			
Date and Time (UTC)	BAPATLA	NELLORE	MACHILIPATNAM/ FRANCHPET	MO PONDICHER RY
05.12.23/0600	60, SSW	120, NNE	130, SW	400, N
06.12.23/0600	270, NE	430, NNE	200, NNE	690, NNE



**OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND IN ASSOCIATION WITH SEVERE CYCLONIC STORM "MICHAUNG" OVER WESTCENTRAL BAY OF BENGAL ALONG AND OFF SOUTH ANDHRA PRADESH COAST BASED ON 0600 UTC (1130 IST) OF 5<sup>TH</sup> DECEMBER 2023.**



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IST=UTC + 0530

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DD: DEEP DEPRESSION (28-33 KT)  
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SCS: SEVERE CYCLONIC STORM (48-63KT)  
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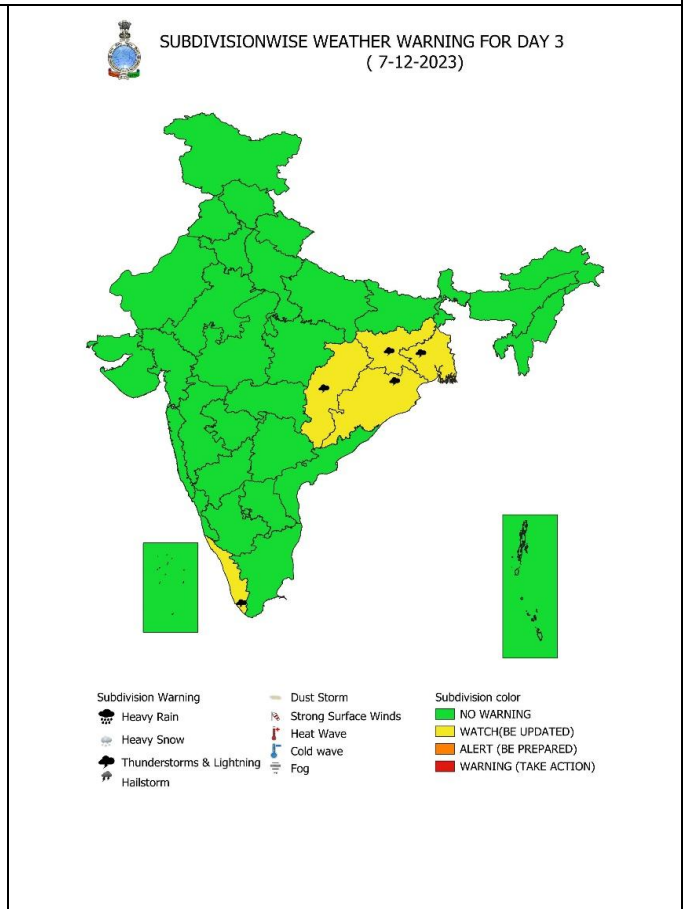
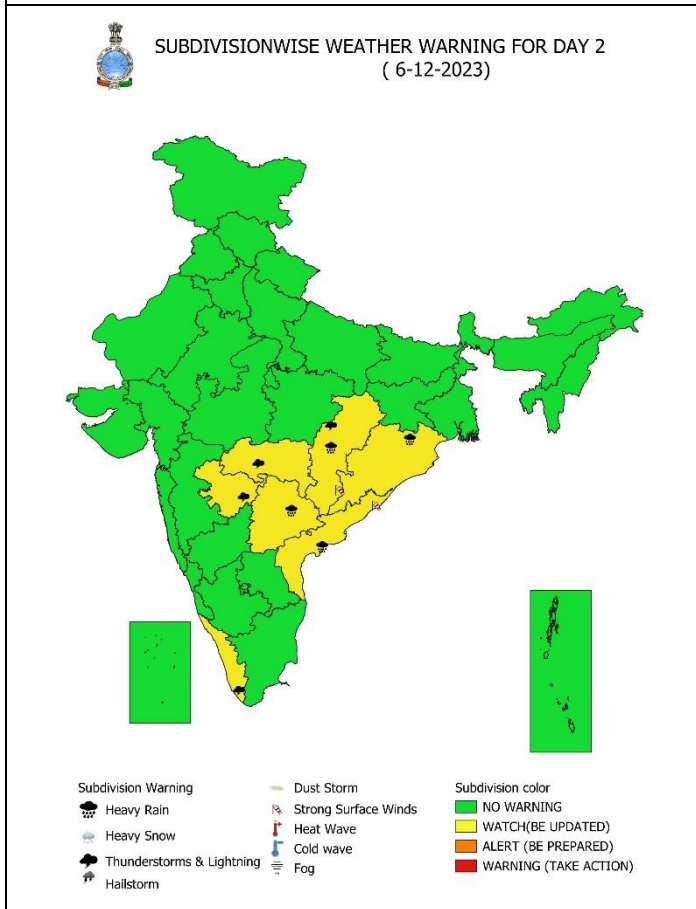
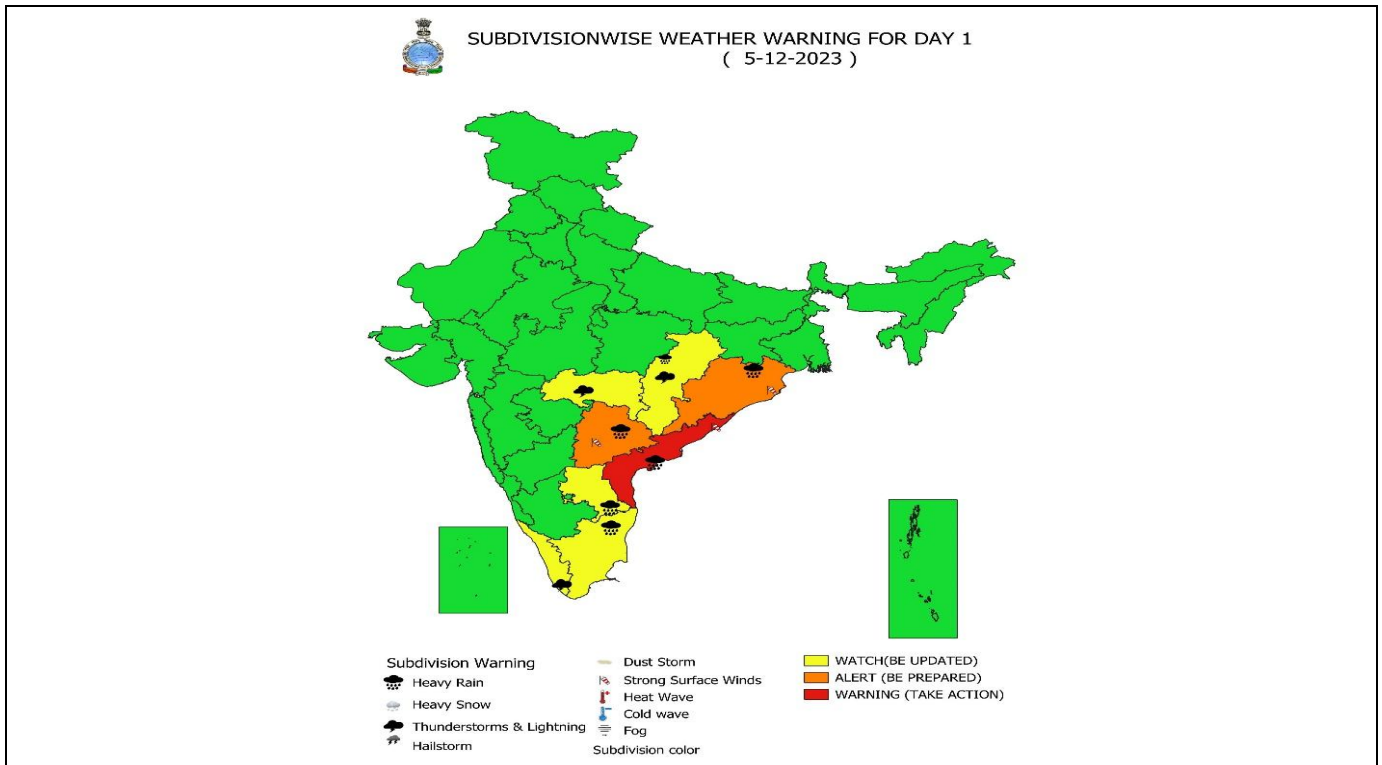
● LESS THAN 34 KT  
○ 34-47 KT  
● ≥ 48 KT  
— OBSERVED TRACK  
— FORECAST TRACK  
■ CONE OF UNCERTAINTY  
AREA OF MAXIMUM SUSTAINED WIND SPEED:  
■ 28-33 KT (52-61 KMPH)  
■ 34-49 KT (62-91 KMPH)  
■ 50-63 KT (92-117 KMPH)  
■ ≥ 64 KT (≥118 KMPH)

**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

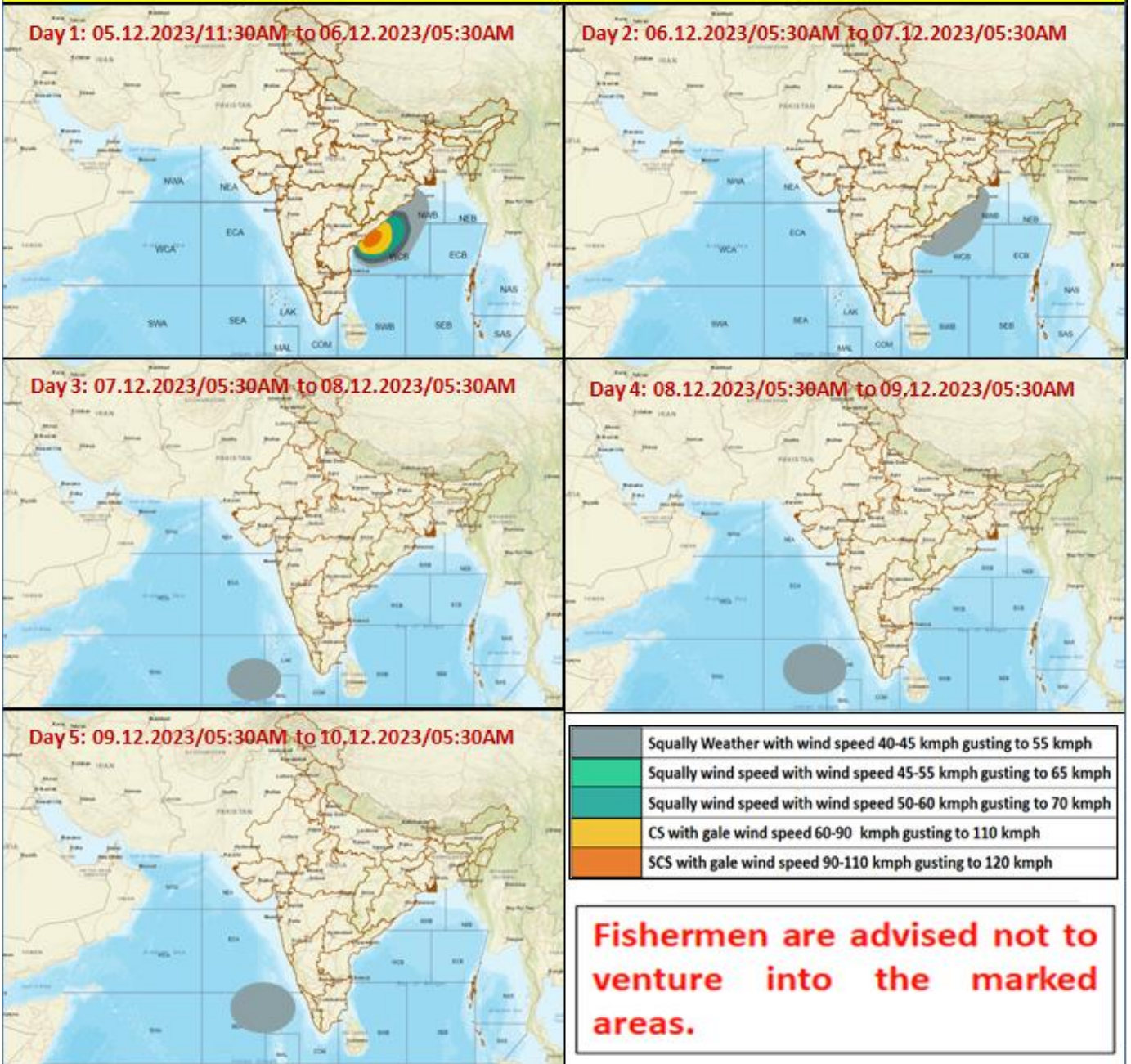
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# Weather Warning Graphics



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## Fishermen Warning Graphics



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## Storm Surge Warning Graphics based on Forecast Track

### 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)
Repalle	Guntur	Andhra Pradesh	Forest	0.5-1.1	Upto 0.23
Sullurpeta	Nellore	Andhra Pradesh	Duggaraja Patnam	0.5-0.8	Upto 0.24
Bapatla	Guntur	Andhra Pradesh	Forest	0.5-0.8	Upto 0.19
Ongole	Prakasam	Andhra Pradesh	Kanuparthi	0.4-0.8	Upto 0.16
Chirala	Prakasam	Andhra Pradesh	Kotha Peta (Rural)	0.5-0.7	Upto 0.17
Kovvur	Nellore	Andhra Pradesh	Isakapalle	0.4-0.5	Upto 0.13

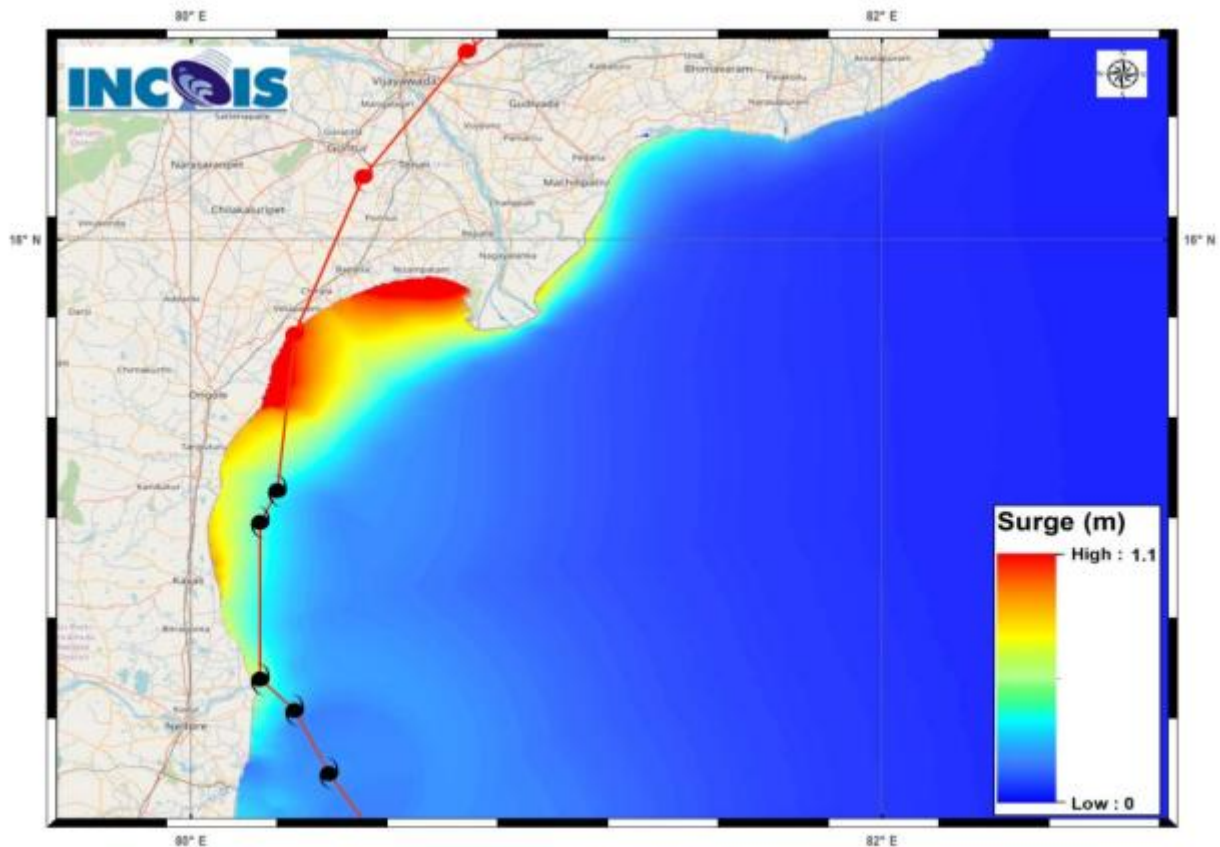


Figure:Storm Surge Map

## Storm Surge Map

## Flash Flood Guidance

**24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 06-12-2023 :**

**High flash flood risk** likely over few watersheds & neighbourhoods of following coastal districts of **Andhra Pradesh**

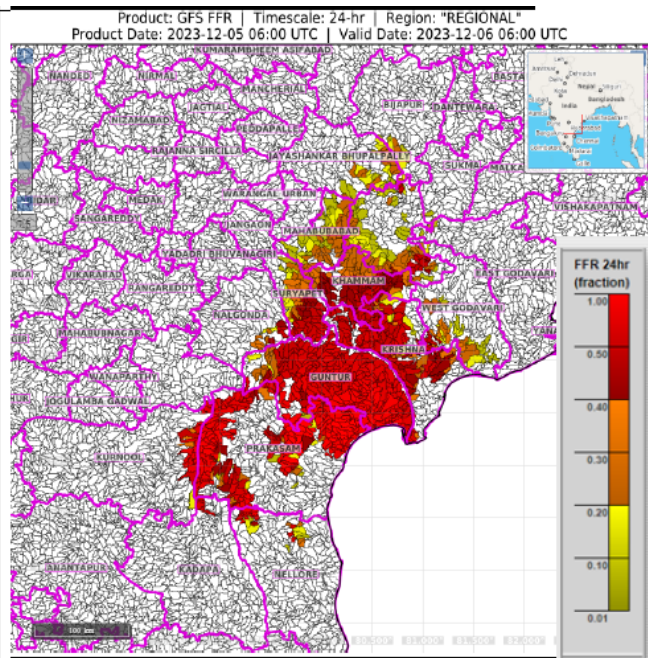
Guntur, Prakasam and Krishna (>50%) districts of **Andhra Pradesh**;

**Moderate flash flood risk** likely over few watersheds & neighbourhoods of following coastal districts (>20% - <50%) of **Andhra Pradesh and Telangana** during next 24 hours.

West Godavari, Guntur, Kurnool, Prakasam and Nellore (>20% - <50%) districts of **Andhra Pradesh**;

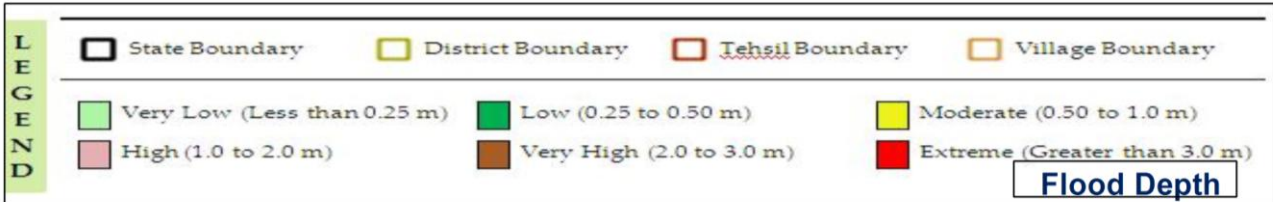
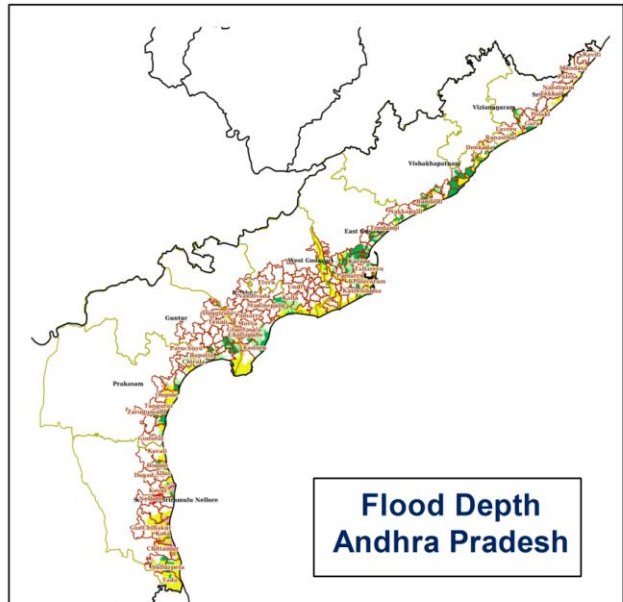
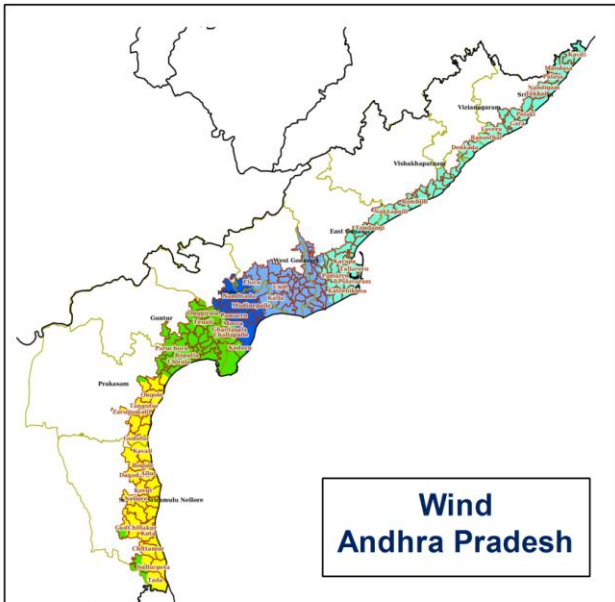
Nalgonda, Suryapet, Khammam, Bharadri kothagudem and Mahabubabad (>20% - <50%) districts of **Telangana**.

Surface runoff/ Inundation may occur at some fully saturated watersheds & low-lying areas over AoC as depicted in map due to Severe Cyclonic Storm 'Michaung' during next 24 hours.



<b>Flash Flood Risk</b>	
<div style="width: 20px; height: 10px; background-color: red; display: inline-block;"></div>	<b>High Risk (Take Action)</b>
<div style="width: 20px; height: 10px; background-color: orange; display: inline-block;"></div>	<b>Moderate Risk (Be Prepared)</b>
<div style="width: 20px; height: 10px; background-color: yellow; display: inline-block;"></div>	<b>Low Risk (Be Updated)</b>

# Hazard Map with Severe Cyclonic Storm MICHAUNG over Westcentral & adjoining off south Andhra Pradesh coast



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