

## **SPECIALBULLETIN-11**

Date: 3<sup>rd</sup> December 2021

Time: 23.30 Hrs IST

**Sub:Cyclonic Storm 'JAWAD' over westcentral Bay of Bengal: Cyclone Warning for north Andhra Pradesh and Odisha coasts – Orange Message.**

The Cyclonic Storm 'JAWAD' (Pronounced as JOWAD) over westcentral Bay of Bengal continued to move north-northwestwards with a speed of 14 kmph during past 06 hours and lay centered at 2030 hrs IST of today, the 03<sup>rd</sup> December 2021, over westcentral Bay of Bengal near Lat. 15.7°N and Long. 85.0°E, about 280 km south-southeast of Vishakhapatnam (Andhra Pradesh), 400 km nearly south of Gopalpur (Odisha), 460 km south-southwest of Puri (Odisha) and 540 km south-southwest of Paradip (Odisha).

It is likely to move north-northwestwards and reach Westcentral Bay of Bengal off north Andhra Pradesh–south Odisha coasts by tomorrow, the 04<sup>th</sup> December morning. Thereafter, it is likely to recurve north-northeastwards and move along Odisha coast reaching near Puri around 5<sup>th</sup> December noon. Subsequently, it is likely to continue to move north-northeastwards along coastal Odisha towards West Bengal coast.


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
03.12.21/2030	15.7/85.0	70-80 gusting to 90	CYCLONIC STORM
03.12.21/2330	15.9/84.7	75-85 gusting to 95	CYCLONIC STORM
04.12.21/0530	16.5/84.4	80-90 gusting to 100	CYCLONIC STORM
04.12.21/1130	17.1/84.3	90-100 gusting to 110	SEVERE CYCLONIC STORM
04.12.21/1730	17.9/84.5	90-100 gusting to 110	SEVERE CYCLONIC STORM
05.12.21/0530	19.2/85.3	85-95 gusting to 105	CYCLONIC STORM
05.12.21/1730	20.1/86.3	70-80 gusting to 90	CYCLONIC STORM
06.12.21/0530	21.0/87.4	55-65 gusting to 75	DEEP DEPRESSION
06.12.21/1730	21.9/88.5	45-55 gusting to 65	DEPRESSION

**Details Forecast and warning as follows:**

### **Rainfall Forecast and warnings:**

Day	Forecast	Heavy Rainfall Warning
Day-1 (Valid upto 0830 Hrs IST of 04.12.21 ):	Light to moderate rain or thundershower very likely to occur at many places over the districts of coastal Odisha & at a few places over rest districts Odisha.	<b>Yellow Warning (Be updated)</b> Heavy to very heavy rainfall very likely to occur at one or two places over the districts of Ganjam , Gajapati with heavyrainfall very likely to occur at one or two places over the districts of Koraput, Rayagada, Puri Jagatsinghpur and Kendrapada.
Day-2 (Valid from 0830 Hrs IST of 04.12.21 to 0830 Hrs	Light to moderate rain or thundershower very likely to occur at most places over districts of coastal Odisha & at many places over the districts of interior Odisha	<b>Red warning (Take action)</b> Heavy to very heavy rainfall very likely to occur at a few placeswith isolated extremely heavy falls (more than 20 cm) over the districts ofGajapati, Ganjam, Puri, and Jagatsinghpur. <b>Orange warning (Be Prepared)</b>

IST of 05.12.21 ):		<p><b>Heavy to very heavy rainfall</b> very likely to at one or two places over the districts of <b>Kendrapada, Cuttack, Khordha, Nayagarh, Kandhamal, and Rayagada</b></p> <p><b>Yellow Warning (Be updated)</b></p> <p><b>Heavy rainfall</b> very likely to occur at isolated places over the districts of <b>Balasore, Bhadrak, Jajpur, Koraput and Malkangiri.</b></p>
Day-3 (Valid from 0830 Hrs IST of 05.12.21 to 0830 Hrs IST of 06.12.21 ):	<p><b>Light to moderate rain or thundershower very likely to occur at most places over the districts of north coastal Odisha and at many places over rest districts of Odisha</b></p>	<p><b>Orange warning (Be Prepared)</b></p> <p><b>Heavy to very heavy rainfall</b> very likely to occur at one or two places over the districts of <b>Mayurbhanj, Balasore, Bhadrak, Kendrapada, Jagatsinghpur, Jajpur, Cuttack, and Puri.</b></p> <p><b>Yellow Warning (Be updated)</b></p> <p><b>Heavy rainfall</b> very likely to occur at isolated places over the districts of <b>Keonjhar, Angul, Dhenkanal, Nayagarh, Khordha, Ganjam and Gajapati</b></p>
Day-4 (Valid from 0830 Hrs IST of 06.12.21 to 0830 Hrs IST of 07.12.21 ):	<p><b>Light to moderate rain or thundershower very likely to occur at isolated places over the districts of Odisha</b></p>	 <p style="text-align: center;"><b>NIL</b></p>

#### Wind warning:

Gale wind speed reaching 70-80 kmph gusting to 90 kmph prevails over westcentral Bay of Bengal. It would gradually increase becoming 90-100 kmph gusting to 110 kmph over west-central and adjoining northwest Bay of Bengal from the evening of 4<sup>th</sup> December for the subsequent 12 hours.

Squally wind speed reaching 45-55 kmph gusting to 65 kmph likely to commence along & off North Andhra Pradesh – Odisha coasts becoming 55-65 gusting to 75 kmph from the forenoon of tomorrow, the 4<sup>th</sup> December and increase gradually becoming 80-90 kmph gusting to 100 kmph from 4<sup>th</sup> evening till 5<sup>th</sup> morning and 70-80 kmph gusting to 90 kmph during subsequent 12 hours.

**(For districtwise wind warning kindly see the attached maps. )**

#### Sea conditions

Sea condition would be High over west central Bay of Bengal during next 12 hours and High to very High over west-central & northwest Bay of Bengal from the early morning of 4<sup>th</sup> December for the subsequent 24 hours. It is likely to be high over northwest Bay of Bengal on 5<sup>th</sup> December.

Sea condition will be rough to very rough over along & off North Andhra Pradesh – Odisha coast from the mid-night of 3<sup>rd</sup> December and become High to very High from 4<sup>th</sup> Afternoon, for the subsequent 12 hours.

#### Storm surge warning.( Graphics enclosed)

Storm surge of about 0.5 – 1m height above astronomical tide is likely to inundate low lying areas of coastal districts of Odisha around noon of 5<sup>th</sup> December.

Fourth December being a new Moon day, higher astronomical tides of about 2-4 m height are likely along the coast of Odisha & West Bengal.

#### Fishermen Warning:

**Fishermen are advised not to venture into sea over westcentral and adjoining southeast & eastcentral Bay of Bengal on 3<sup>rd</sup> December, over west-central & northwest Bay of Bengal and along & off north Andhra Pradesh - Odisha- West Bengal coasts during 3<sup>rd</sup> - 5<sup>th</sup> December 2021**

#### Port warning:

Replace Local Warning Signal No. 4 (LW-4) at Gopalpur and Puri ports by Danger Signal No.7 (D-7) and Keep Hoisted Local Warning Signal No. 4 (LW-4) at Dhamara and Paradeep ports of Odisha.

**Expected impact and action suggested:**

Districts	Expected Impact	Action suggested
Gajapati, Ganjam, Puri, Khordha, Jagatsinghpur, Kendrapada and Cuttack	<p>i) Major damage to thatched houses/huts and vulnerable structures.</p> <p>ii) Breaking of tree branches, uprooting of trees.</p> <p>iii) Minor damage to power and communication lines.</p> <p>iv) Localized Flooding of roads, inundation and water logging in low lying areas and closure of underpasses mainly in urban areas of the affected region.</p> <p>v) Occasional reduction in visibility due to heavy rainfall.</p> <p>vi) Disruption of traffic in major cities due to water logging in roads leading to increased travel time.</p> <p>viii) Localized Landslides/Mudslides in hilly areas</p> <p>ix) Damage to horticulture and standing crops in some areas due to inundation. Damage to banana, Papaya &amp; Moringa (Drumstick) trees.</p> <p>x) It may lead to riverine flooding in some river catchments (Nagavali, Rushikulya, Vanshadhara) (for riverine flooding please visit Web page of CWC)</p>	<p>i) Total suspension of fishing operations.</p> <p>ii) Check for traffic congestion on your route before leaving for your destination.</p> <p>iii) Follow any traffic advisories that are issued in this regard.</p> <p>iv) Avoid going to areas that face the water logging problems often.</p> <p>v) Avoid staying in vulnerable structure.</p> <p>vi) Harvest the ripen crops like Paddy &amp; Horticultural crops and also secure the harvested crops securely from the damage due to rain and strong winds.</p> <p>vii) Harvest of matured paddy crop and the harvested paddy should be shifted to safer places. Also harvest the rabi vegetables like cauliflower and cabbage if heads are ready to use.</p> <p>viii) Do arrangement for Drainage of excess water from standings crops in growing stage and vegetable fields.</p> <p>ix) Postpone sowing of rabi crop like Green gram, black gram and Mustard and vegetables like potato, Onion and coriander.</p> <p>x) Provide support to young fruit plants like Papaya and Banana and vegetables like ridge gourd. Cover the vegetable nursery with white polythene.</p> <p>xi) Keep the livestock indoors during rainfall if possible keep them loose inside the shed. Keep feed for 3-5 days, in case of any emergency</p>

Balasore, Bhadrak  
Jajpur, Malkangiri  
Nayagarh,  
Kandhamal,  
Rayagada Koraput,  
Mayurbhanj  
Keonjhar, Angul, and  
Dhenkanal

i) Breaking of tree branches  
iii) Localized Flooding of roads, inundation and water logging in low lying areas and closure of underpasses mainly in urban areas of the affected region.  
v) Occasional reduction in visibility due to heavy rainfall.  
vi) Disruption of traffic in major cities due to water logging in roads leading to increased travel time.  
vii) Minor Damage to Kutchha roads and vulnerable structure and wall collapsed of vulnerable kutchha houses  
xi) Localized Landslides/Mudslides in hilly areas  
Damage to horticulture and standing crops in some areas due to inundation. Damage to banana, Papaya & Moringa (Drumstick) trees.

i) Check for traffic congestion on your route before leaving for your destination.  
iii) Follow any traffic advisories that are issued in this regard.  
iv) Avoid going to areas that face the water logging problems often.  
v) Avoid staying in vulnerable structure.  
vi) Harvest the ripen crops like Paddy & Horticultural crops and also secure the harvested crops securely from the damage due to rain and strong winds.  
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viii) Do arrangement for Drainage of excess water from standings crops in growing stage and vegetable fields.  
ix) Postpone sowing of rabi crop like Green gram, black gram and Mustard and vegetables like potato, Onion and coriander.  
x) Provide support to young fruit plants like Papaya and Banana and vegetables like ridge gourd. Cover the vegetable nursery with white polythene.  
xi) Keep the livestock indoors during rainfall if possible keep them loose inside the shed. Keep feed for 3-5 days, in case of any emergency

### Advisory to along & off shore Installations

The off-shore & alongshore operations along Odisha coast (Viz., All ports of Odisha, ITR Chandipur, Army Defence College, Gopalpur, INS Chilika, Chilika Development Authority establishment, ICZMP activity, Bhitarkanika wildlife sanctuary, Kendrapada, ONGC Odisha etc) are advised to be judiciously regulated on 3rd December and to be suspended on 4th December 2021, to ensure safety of life & property.

**N.B:** 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. PROBABILISTIC FORECAST: UNLIKELY =< 25%, LIKELY 26-50%, VERY LIKELY 51-75%, MOST LIKELY > 75%

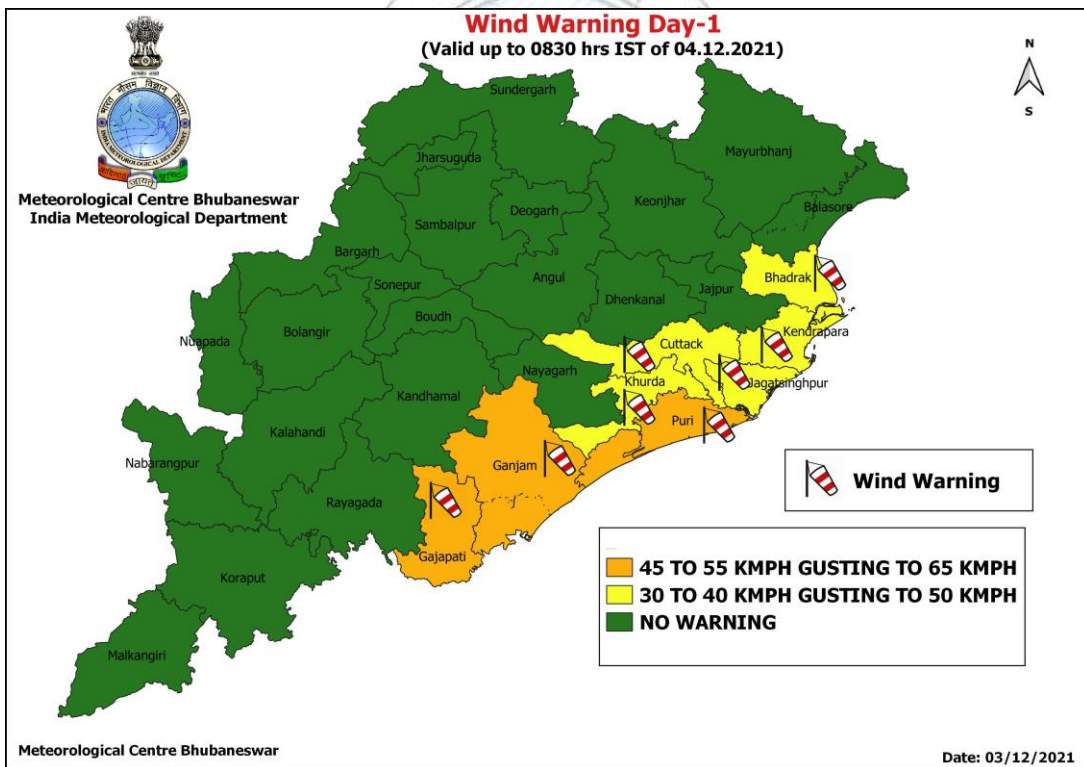
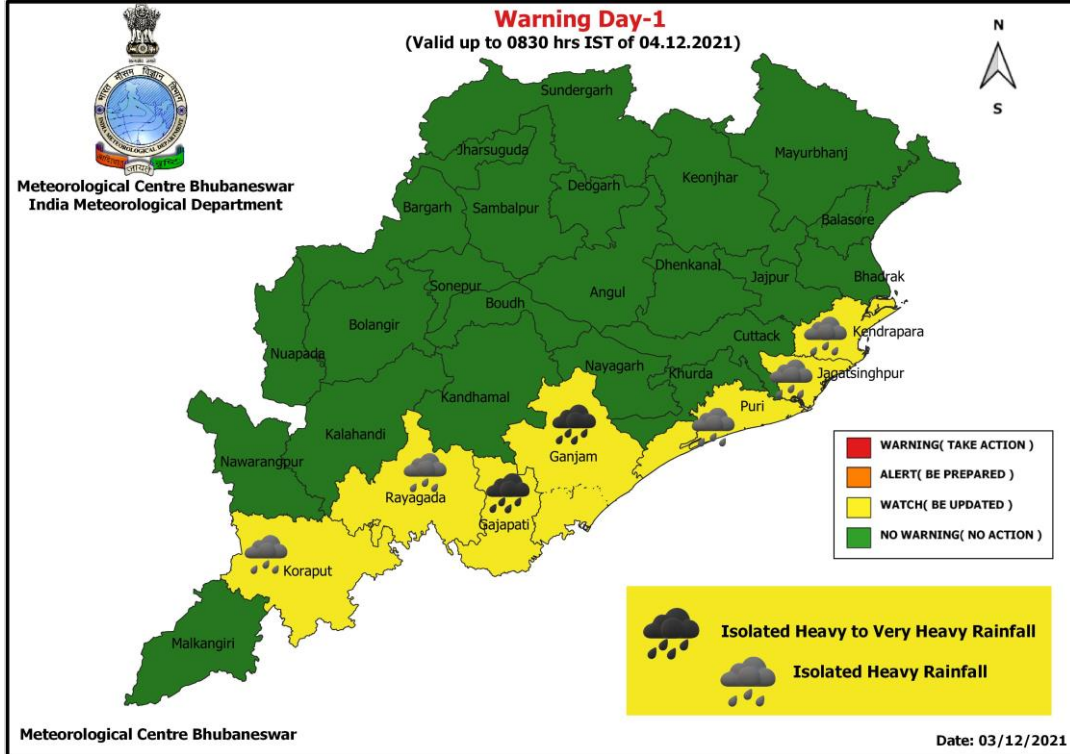
Dr.H.R. Biswas,  
Head & Scientist-E,  
Met .Centre Bhubaneswar

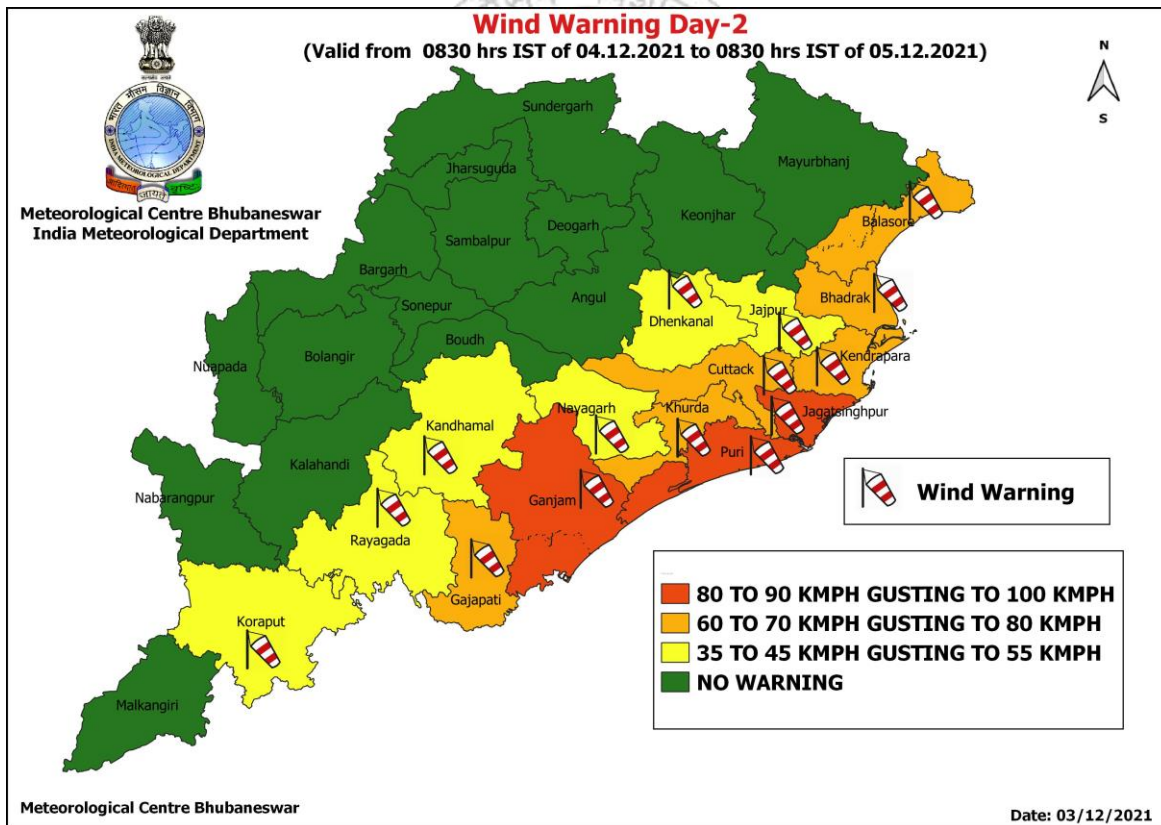
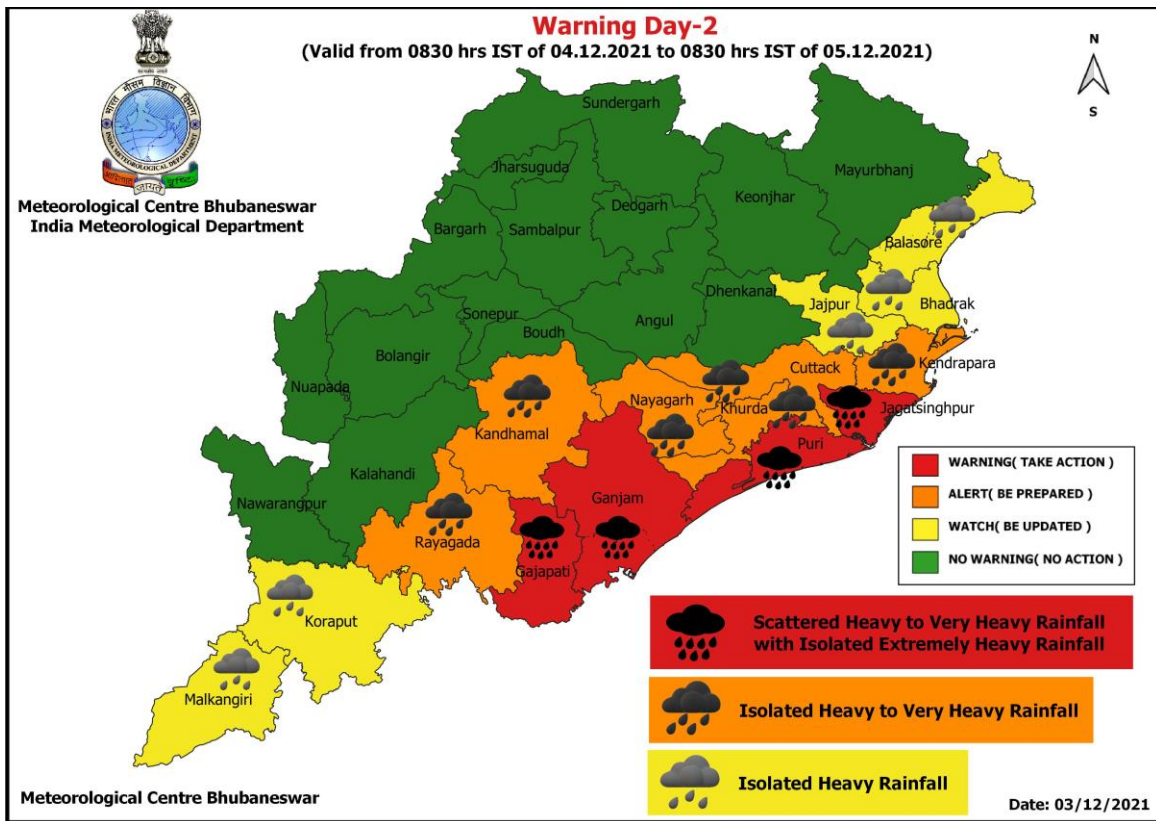
To

1. CHIEF SECRETARY , GOVT. OF ODISHA
2. PRINCIPAL SECRETARY, REVENUE & DISASTER MANAGEMENT, GOVT. OF ODISHA.
3. PRINCIPAL SECRETARY, DEPT. OF AGRICULTURE, GOVT. OF ODISHA.
4. PRINCIPAL SECRETARY, DEPARTMENT OF WATER RESOURCES, GOVT. OF ODISHA.
5. SPECIAL RELIEF COMMISSIONER (SRC), GOVT. OF ODISHA BHUBANESWAR.
6. REVENUE SECRETARY, GOVT. OF ODISHA, BHUBANESWAR.
7. M.D., OSDMA, GOVT. OF ODISHA, BHUBANESWAR.
8. RDC, CENTRAL DIVISION/ SOUTHERN DIVISION/ NORTHERN DIVISION.
9. AIR CUTTACK / DOORDARSHAN.



**Rainfall Warning Maps for Day-1 to Day-3**



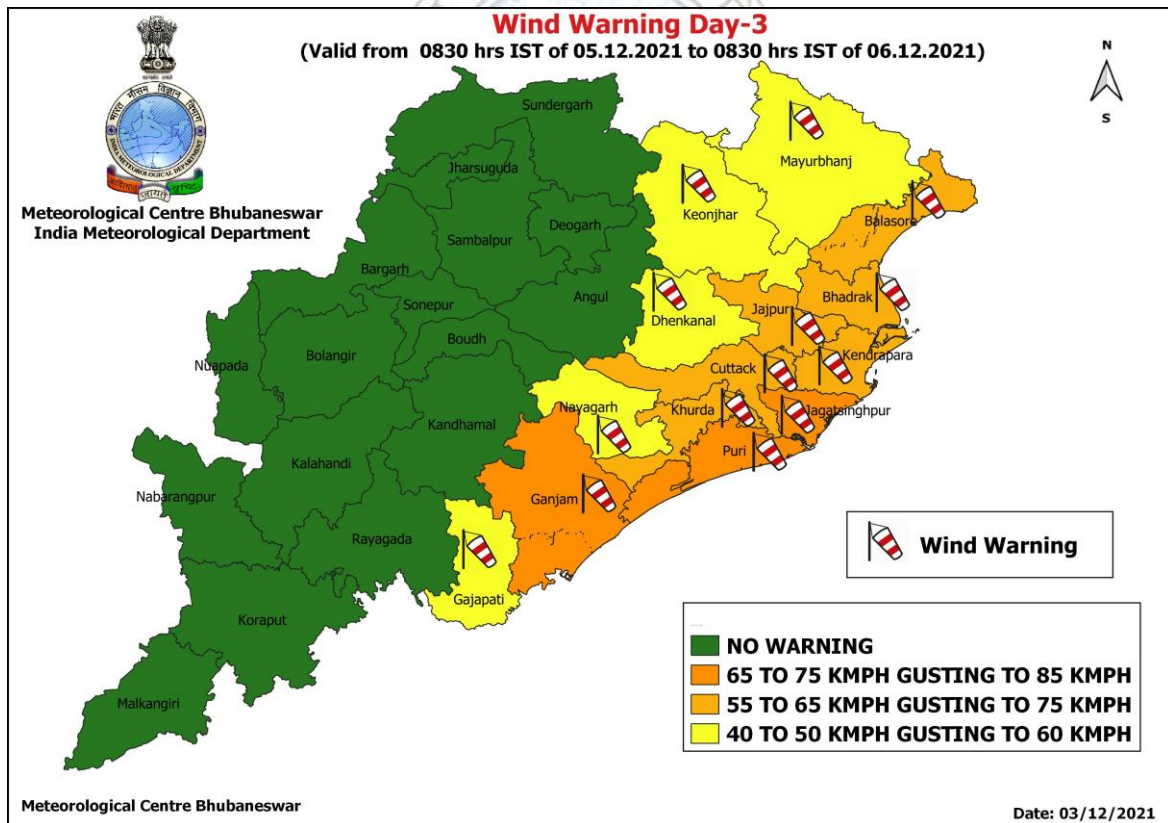
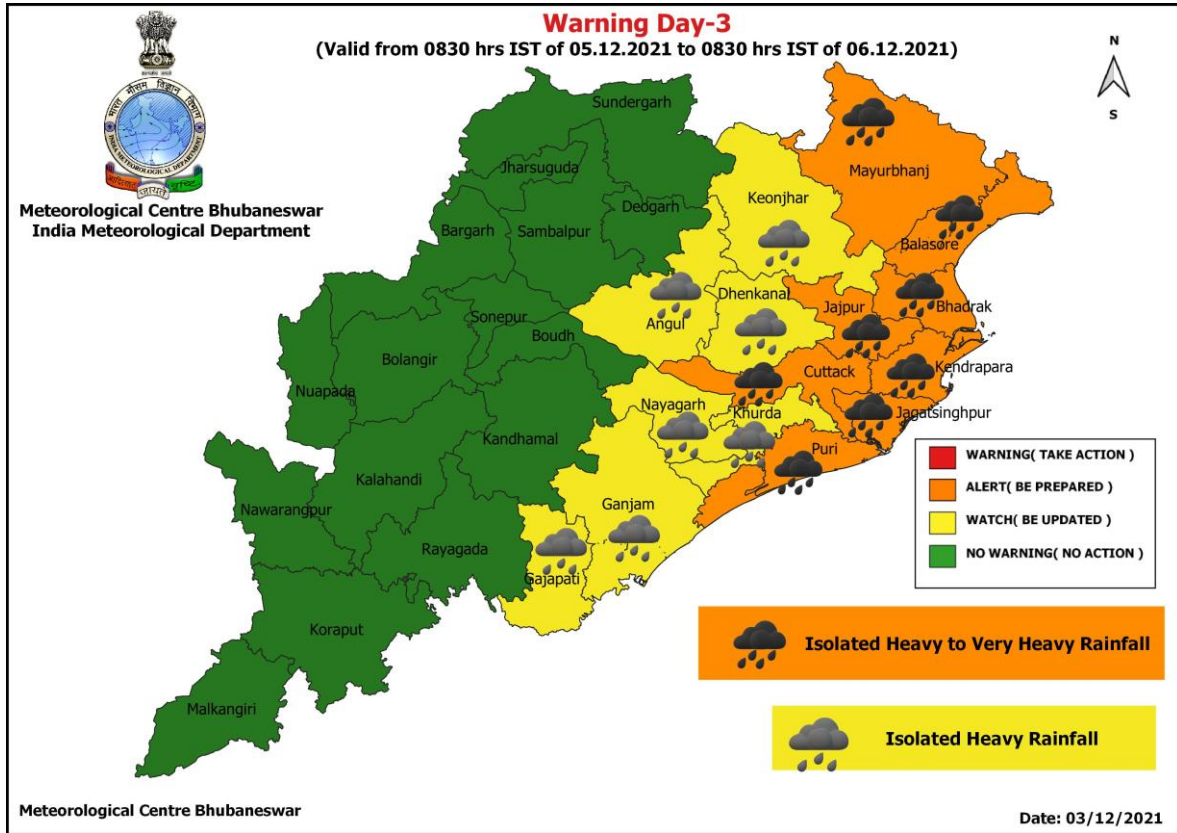


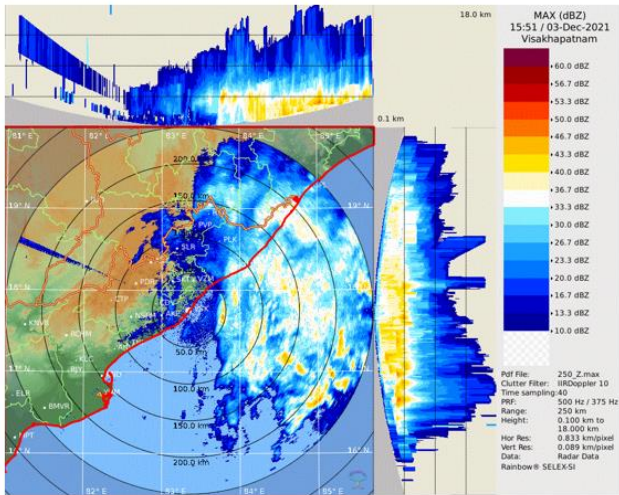
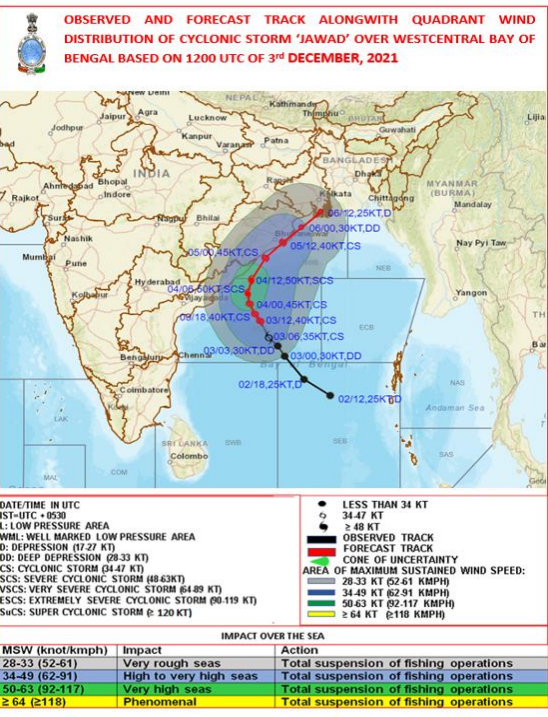
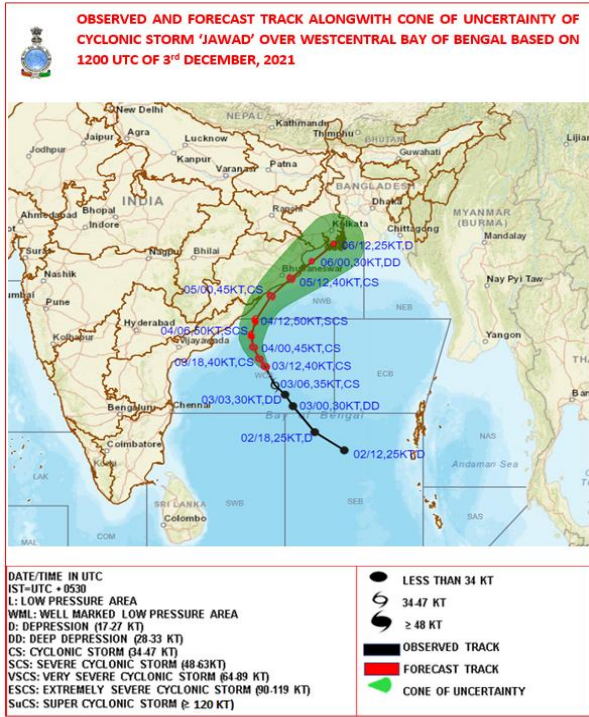
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ଭାରତସରକାର  
 ପୃଥିବୀବିଜ୍ଞାନମନ୍ତ୍ରାଳୟ  
 ଭାରତପାଣିପାଗବିଜ୍ଞାନବିଭାଗ  
 ପାଣିପାଗବିଜ୍ଞାନକେନ୍ଦ୍ର  
 ଭୁବନେଶ୍ୱର, ଓଡ଼ିଶା-୭୫୧୦୨୦





Doppler Weather RADAR imagery from Vishakhapatnam, depicting deep convective clouds over north Coastal Andhra Pradesh and south Odisha.

**Model predicted storm surge heights in association with the Cyclone**

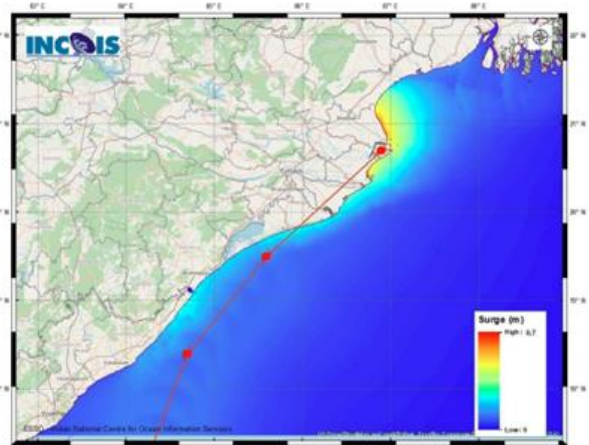


Figure: Storm Surge Map

**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)
Kendraparha	Kendrapara	Odisha	Tikayat Nagar	0.3-0.7	Upto 2.64
Bhadrak	Bhadrak	Odisha	Mohanpur	0.4-0.6	Upto 0.64
Jagatsinghpur	Jagatsinghapur	Odisha	Musadia	0.3-0.6	Upto 2.37
Puri	Puri	Odisha	Chhuriana	0.2-0.6	Upto 1.03
Baleshwar	Baleshwar	Odisha	Srikona	0.2-0.4	Upto 0.78
Brahmapur	Ganjam	Odisha	Golabandha	0.2-0.3	Upto 0.81
Chatrapur	Ganjam	Odisha	Prayagi	0.2-0.3	Upto 0.76
Ichchapuram	Srikakulam	Andhra Pradesh	Burjapadu	0.2-0.3	Upto 0.89
Sompeta	Srikakulam	Andhra Pradesh	Gollagandi	0.2-0.3	Upto 0.68
Tekkali	Srikakulam	Andhra Pradesh	Pedavanka	0.2-0.3	Upto 0.57