



India Meteorological Department

(Ministry of Earth Sciences)

NATIONAL BULLETIN NO.: 22 (BOB/04/2024)

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DATED: 12.09.2024

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Sub: Depression over central Uttar Pradesh

The depression over Southwest Uttar Pradesh and neighbourhood moved east-northeastwards with a speed of 10 kmph during past 6 hours and lay centred at 1730 hours IST of today, the 12th September over central Uttar Pradesh near latitude 27.5°N and longitude 79.3°E, about 70 km southwest of Shahjahanpur (Uttar Pradesh), 90 km west of Hardoi (Uttar Pradesh), 100 km south of Bareilly (Uttar Pradesh), 130 km east-southeast of Aligarh (Uttar Pradesh) and 130 km east-northeast of Agra (Uttar Pradesh).

It is likely to continue to move east-northeastwards and maintain its intensity today, the 12th September and weaken gradually thereafter from tomorrow, the 13th September.

The system is under continuous surveillance of Doppler Weather Radars at Delhi and Lucknow.

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.

Warnings:

(i) Rainfall warning

Uttarakhand: Light to moderate rainfall at most places is very likely with **heavy to very heavy rainfall** at a few places and **extremely heavy rainfall** at isolated places on 12th & 13th; **heavy rainfall** at isolated places on 14th September.

West Uttar Pradesh: Light to moderate rainfall at most places is very likely with **heavy to very heavy rainfall** at a few places and **extremely heavy rainfall** at isolated places on 12th **heavy to very heavy rainfall** at isolated places on 13th and **heavy rainfall** at a few places on 14th September.

East Uttar Pradesh: Light to moderate rainfall at many places is very likely with **heavy rainfall** at a few places on 12th and at isolated places on 13th & 14th September.

West Madhya Pradesh: Light to moderate rainfall at many places is very likely with **heavy to very heavy rainfall** at a few places over northwest Madhya Pradesh on 12th; **heavy rainfall** at isolated places on 13th & 14th September.

East Madhya Pradesh: Light to moderate rainfall at most places is very likely with **heavy rainfall** at a few places over northeast Madhya Pradesh on 12th and **heavy rainfall** at isolated places on 13th and 14th September.

East Rajasthan: Light to moderate rainfall at many places is very likely with **heavy to very heavy rainfall** at a few isolated places over northeast Rajasthan on 12th and **heavy rainfall** at isolated places on 14th September.

Haryana: Light to moderate rainfall at most places is very likely with **heavy to very heavy rainfall** at a few places over south Haryana on 12th and **heavy rainfall** at isolated places on 13th & 14th September.

(ii) Flash Flood Guidance: (Graphics Attached)

24 hours Outlook for the Flash Flood Risk (FFR) till 1730 IST of 13-09-2024:

Moderate to High flash flood risk likely over few watersheds & neighbourhoods of

East Uttar Pradesh - Bahraich, Hardoi, Kheri, Shravasti, Siddharthnagar and Sitapur districts.

Uttarakhand - Almora, Bageshwar, Chamoli, Champawat, Dehradun, Nanital, Pauri Garhwal, Pithoragarh, Rudraprayag, Tehri Garwal, Udham Singh Nagar and Uttarkashi districts.

West Uttar Pradesh - Aligarh, Badaun, Baghpat, Bareilly, Bijnor, Bulandsahar, Gautambudhnagar, Ghaziabad, Hapur, Jyotibaphule Nagar, Kanshiramnagar, Mahamayanagar, Meerut, Moradabad, Pilibhit, Rampur and Sambhal districts.

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

(iii) Wind warning:

Strong wind speed reaching 35-45 kmph gusting to 55 kmph is likely to prevail over central Uttar Pradesh and neighbourhood during next 12 hours.

(iv) Impact Expected (Uttarakhand, Uttar Pradesh, North Madhya Pradesh, Haryana, and Northeast Rajasthan due to heavy rainfall)

- ✓ 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 and roadways due to water logging in roads leading to increased travel time.
- ✓ Minor damage to kutcha roads.
- ✓ Possibilities of damage to vulnerable structure.

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- ✓ Localized Landslides/Mudslides/landslips/mud slips/land sinks/mud sinks.
- ✓ Damage to horticulture and standing crops in some areas due to inundation and wind.
- ✓ It may lead to riverine flooding in some river catchments (for riverine flooding please visit Web page of CWC)

(v) Action Suggested (Uttarakhand, Uttar Pradesh, North Madhya Pradesh, Haryana, and Northeast Rajasthan)

- ✓ Judicious regulation of surface transports including railways and roadways.
- ✓ 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.
- ✓ Avoid staying in vulnerable structure.

(vi) Agromet advisories for Heavy Rainfall likely over various parts of the country

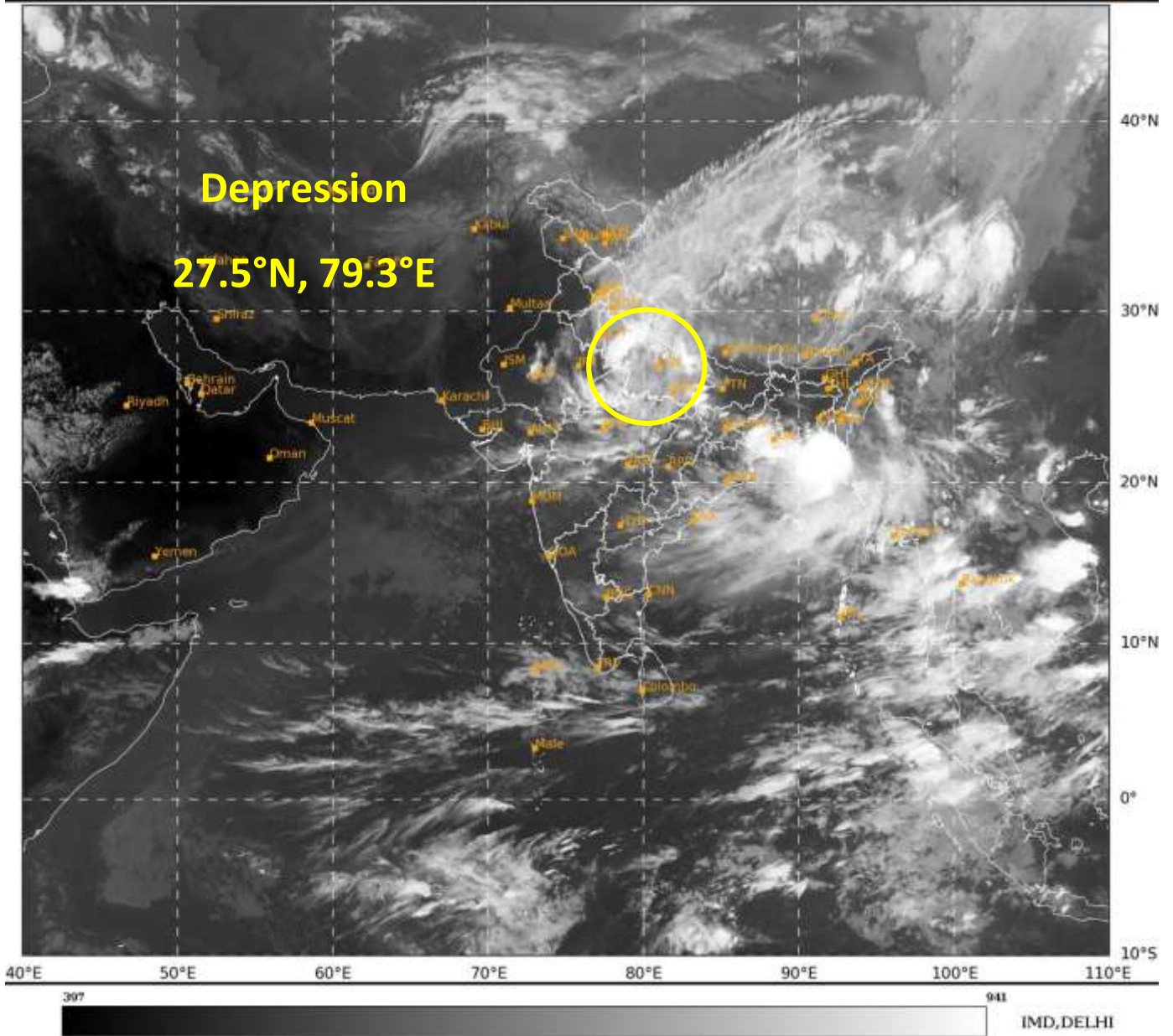
- ✓ Provide mechanical support to horticultural crops & staking to vegetables.
- ✓ Keep the harvested produce at safer place.

Significant amount of rainfall recorded from 0830 hrs IST to 1730 hrs IST of 12.09.2024 (cm) is given in Annexure –I.

The next bulletin will be issued at 0230 hrs IST of tomorrow, the 13th September, 2024.

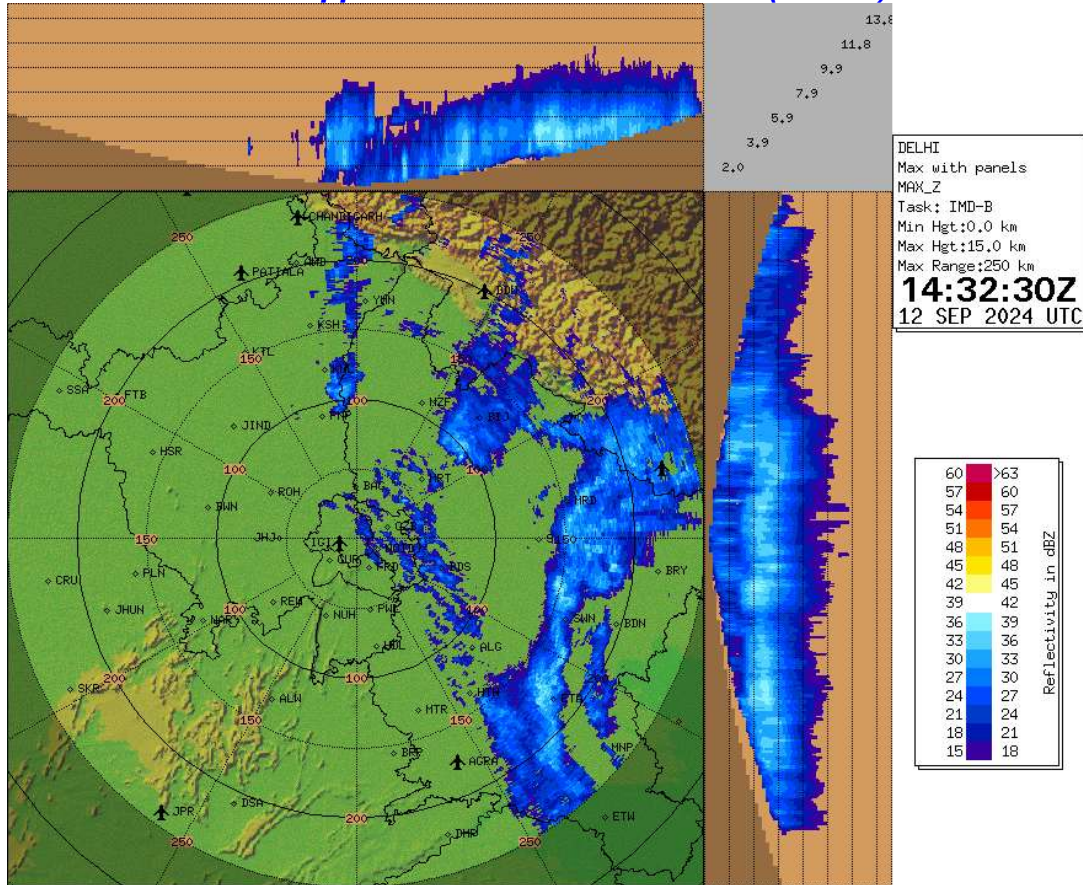
**(Dr. Ananda Kumar Das)
Scientist- E, RSMC, New Delhi**

Copy to: CRS, Pune/RMC Delhi /RMC Nagpur/MC Lucknow/MC Bhopal/MC Chandigarh/MC Dehradun/ MC Jaipur/MC Shimla

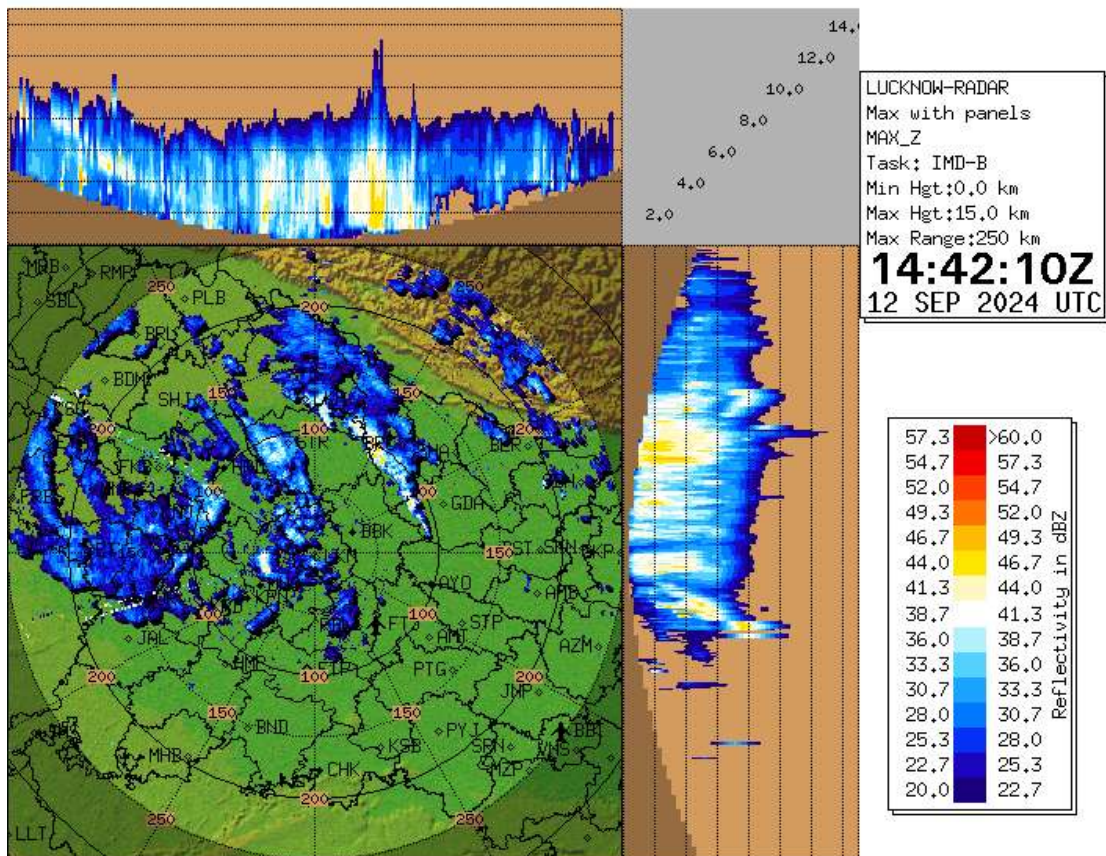


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Doppler Weather Radar at Delhi (Max_Z)



Doppler Weather Radar at Lucknow (Max_Z)



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OBSERVED AND FORECAST TRACK OF DEPRESSION OVER CENTRAL UTTAR PRADESH BASED ON 1200 UTC (1730 IST) OF 12TH SEPTEMBER, 2024.

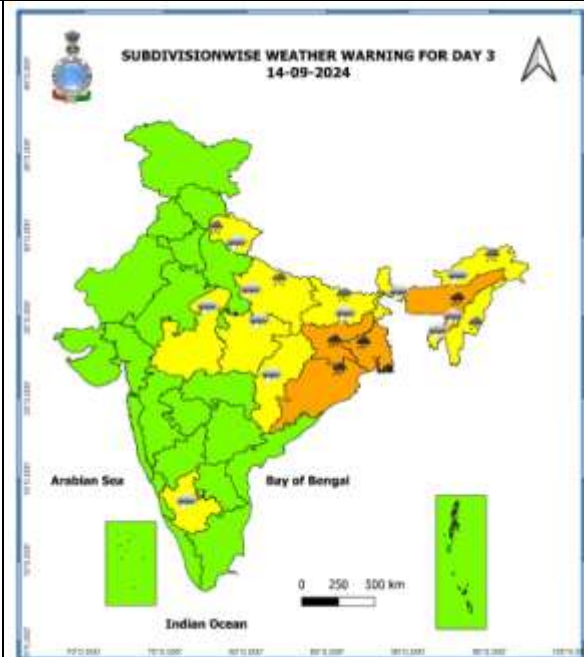
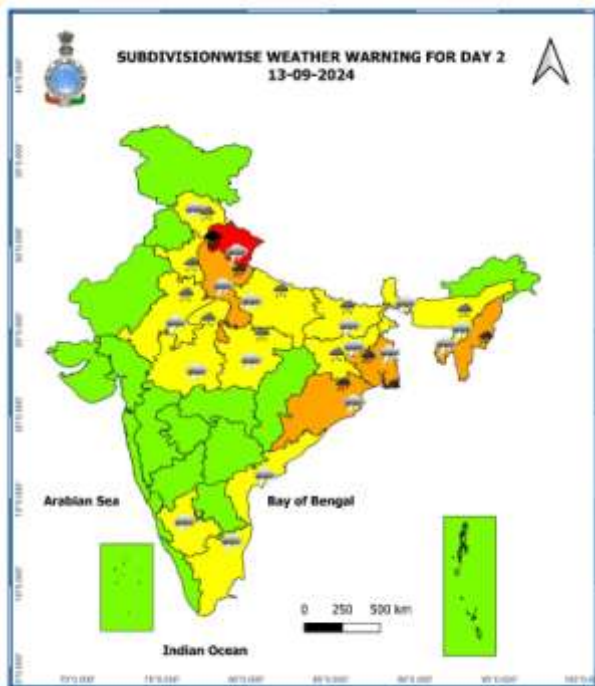
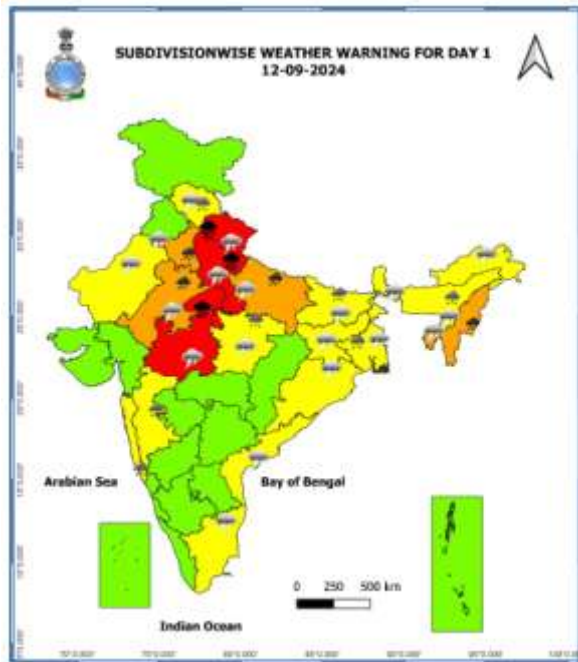


DATE/TIME IN UTC
 IST=UTC + 0530
 L: LOW PRESSURE AREA
 WML: WELL MARKED LOW PRESSURE AREA
 D: DEPRESSION (17-27 KT)
 DD: DEEP DEPRESSION (28-33 KT)
 CS: CYCLONIC STORM (34-47 KT)
 SCS: SEVERE CYCLONIC STORM (48-63KT)
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
 ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)
 SuCS: SUPER CYCLONIC STORM \geq 120 KT

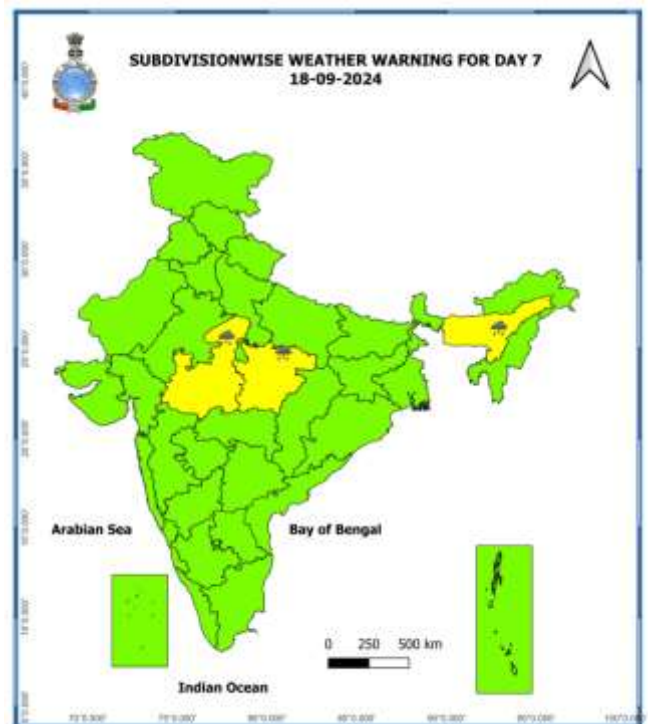
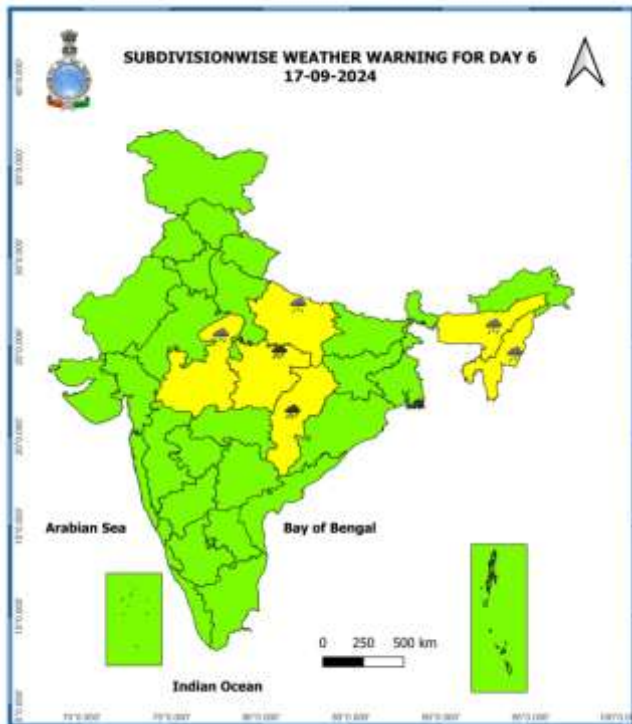
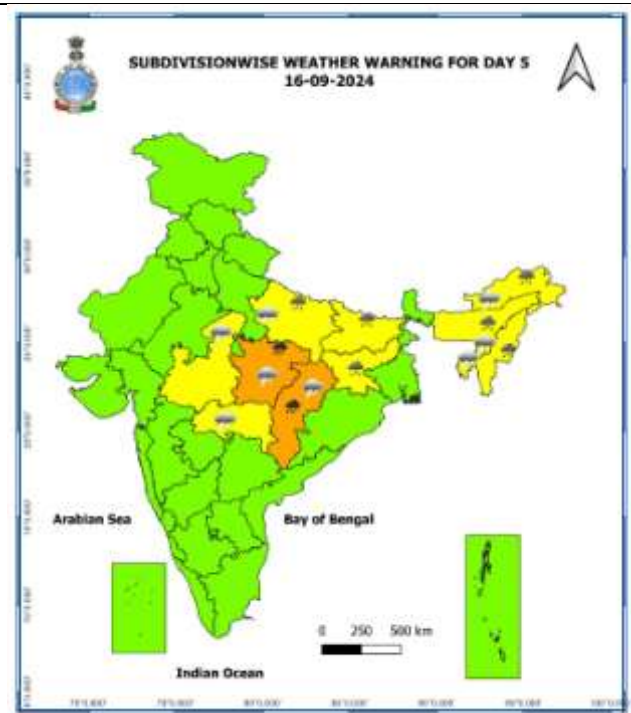
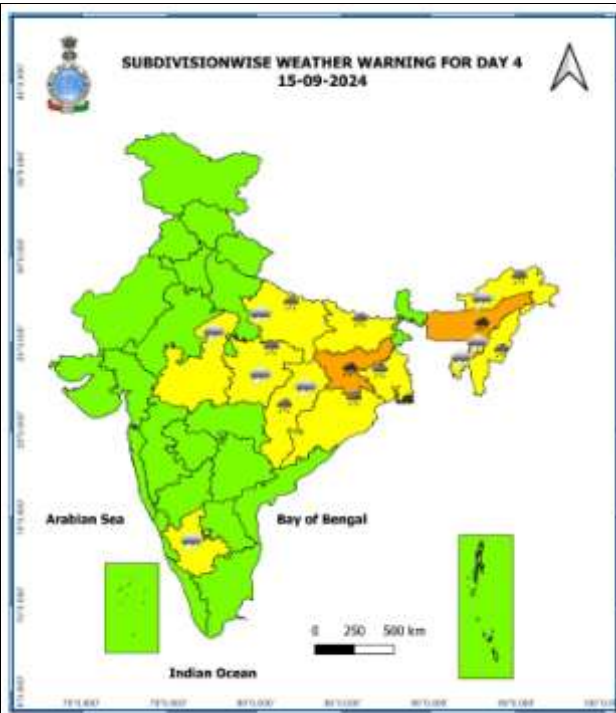
- LESS THAN 34 KT
- 34-47 KT
- \geq 48 KT
- OBSERVED TRACK
- FORECAST TRACK
- CONE OF UNCERTAINTY

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Warning Graphics



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- 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

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Flash Flood Guidance

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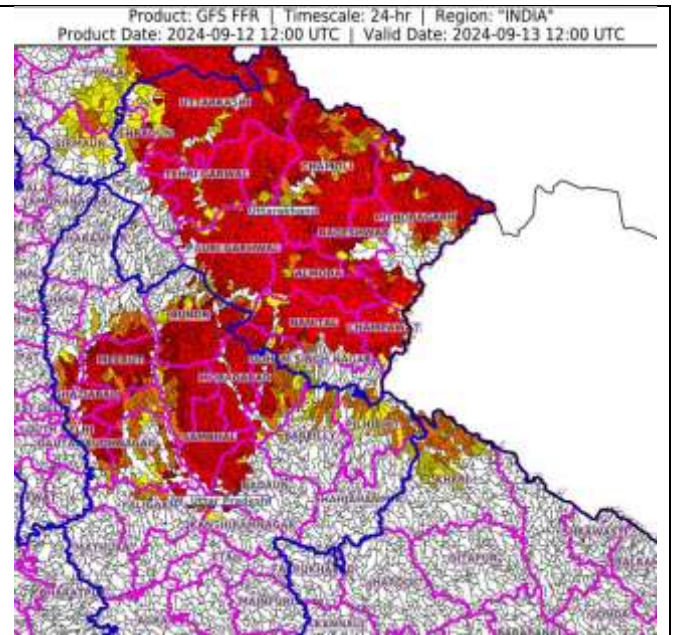
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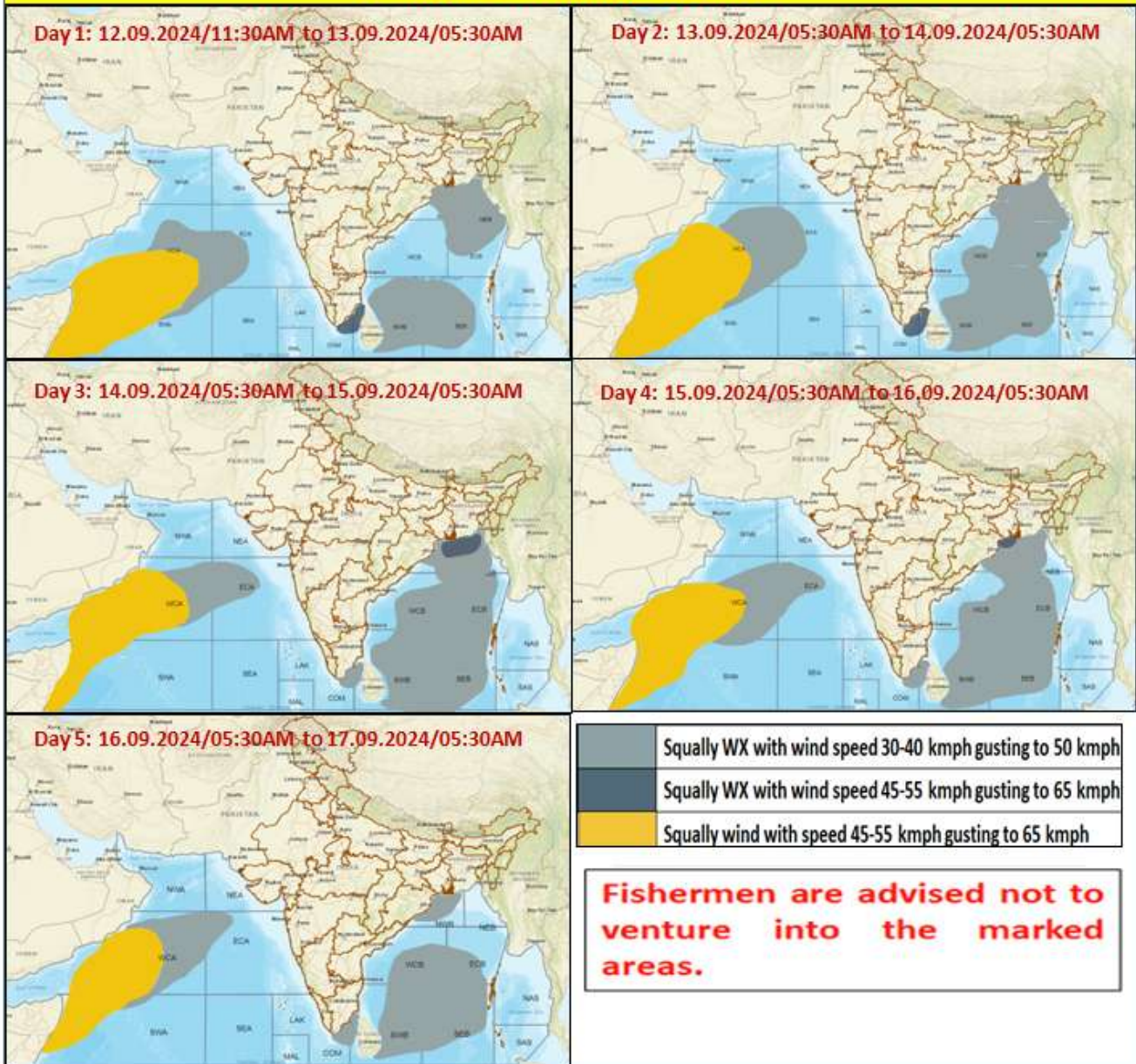
Flash Flood Risk

High Risk (Take Action)

Moderate Risk (Be Prepared)

Low Risk (Be Updated)

Fishermen Warning Graphics



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Significant amount of rainfall (from 0830 hours IST to 1730 hours IST of today) (in cm):

East Rajasthan: Mitrapura (Sawai Madhopur) 9, Patan (Neem Ka Thana) & Viratnagar (Kotputli-Behror) 8 each, Khatoli (Kota) 7, Andhi (Jaipur gramin) 7, Nirjharna (Dausa) 7, Shahbad (Baran) 7, Pilani 3;

Uttarakhand: Pati 8, Jainti & Dhari 6 each, Lohaghat 5, Devidhura 5, Rudrapur & Tanakpur 5 each, Mukteshwar Kumaon & Khatima 4 each, Pithoragarh 3, Mussoorie 2, Pantnagar & New Tehri 2;

West Uttar Pradesh: Kannauj _Anaughi (Dis. Kannauj) 8, Aligarh 5, Agra & Deomali 5 each, Meerut & Moradabad 3 each, Bareilly & Muzaffar Nagar 2 each; each;

East Uttar Pradesh: Bahraich 3; Hardoi 2, Fatehgarh & Kanpur Chakeri 2 each;

East Madhya Pradesh: Damoh 3, Malanjkhanda 2; Haryana: Narnaul 2.

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