

Government of India  
Ministry of Earth Sciences  
India Meteorological Department



Press Release

Date: 28<sup>th</sup> September, 2024

Time of Issue: 1345 hours IST

**Subject: Isolated heavy to very heavy rainfall very likely over Gujarat Region, East Uttar Pradesh, Bihar and Sub-Himalayan West Bengal & Sikkim today on 28<sup>th</sup> September.**

**Realised weather during past 24 hours till 0830 hours IST of today (Annexure I)**

**Heavy to very Heavy rainfall at a few places with extremely heavy rainfall** at isolated places over East Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim and Bihar; **Heavy to very Heavy rainfall** at few places over Sub-Himalayan West Bengal & Sikkim and over isolated places over Gujarat Region, Konkan & Goa, Saurashtra & Kutch, West Madhya Pradesh, Marathwada and Madhya Maharashtra; **Heavy rainfall** at isolated places over Himachal Pradesh, East Rajasthan, Chhattisgarh, Assam & Meghalaya, Tamil Nadu, Puducherry & Karaikal and Rayalaseema.

**Weather Systems:**

- ✓ Yesterday's upper air cyclonic circulation over southwest Madhya Pradesh & neighbourhood now lies over southwest Uttar Pradesh & neighbourhood extending upto middle tropospheric levels.
- ✓ A trough runs from Northeast Arabian Sea and adjoining south Gujarat to north Bihar across the cyclonic circulation over southwest Uttar Pradesh extending upto middle tropospheric levels.

**Forecast & Warnings (upto 7 days) (Annexure II & III):**

**West India**

- ✓ Fairly widespread to widespread light to moderate rainfall very likely over Konkan & Goa, Madhya Maharashtra, Gujarat State during next 2 days; Isolated to Scattered light to moderate rainfall over the entire region during subsequent 5 days; dry weather likely to prevail over Saurashtra & Kutch from 2<sup>nd</sup> October.
- ✓ **Heavy to very Heavy rainfall** at isolated places very likely over Gujarat State on 28<sup>th</sup> September.
- ✓ **Isolated heavy rainfall** very likely over Madhya Maharashtra, North Konkan & Goa on 28<sup>th</sup> September.

**East & Northeast India**

- ✓ Scattered to Fairly widespread light to moderate rainfall very likely over Northeast India during next 2 days and fairly widespread to widespread light/moderate rainfall over the region during subsequent next 5 days; Fairly widespread to widespread light/moderate rainfall very likely over East India today & Isolated to Scattered light to moderate rainfall during the next subsequent 6 days.
- ✓ **Heavy to Very Heavy rainfall** very likely over Sub-Himalayan West Bengal & Sikkim, Bihar, on 28<sup>th</sup> September, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura during 2<sup>nd</sup> to 4<sup>th</sup> October, Assam & Meghalaya on 2<sup>nd</sup> & 3<sup>rd</sup>.

- ✓ **Isolated heavy rainfall** very likely Arunachal Pradesh on 28<sup>th</sup> September and 1<sup>st</sup> October and Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 30<sup>th</sup> September and 1<sup>st</sup> October.

✓

#### Central India:

- ✓ Scattered to Fairly widespread light to moderate rainfall over central India today and Isolated to Scattered light to moderate rainfall over the same region during subsequent 6 days.
- ✓ **Isolated heavy rainfall** very likely over East Madhya Pradesh on 28<sup>th</sup> September.

#### Northwest India

- ✓ Fairly widespread to widespread light to moderate rainfall very likely over East Uttar Pradesh today days & Isolated to Scattered light to moderate rainfall over the same region during subsequent next 6 days; Isolated to Scattered light to moderate rainfall over Uttarakhand during the week & Isolated to Scattered light to moderate rainfall over Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi, Rajasthan, West Uttar Pradesh during next 2 days and dry weather likely to prevail over the same region during subsequent next 4-5 days.
- ✓ **Isolated heavy to very heavy rainfall** very likely over East Uttar Pradesh during 28<sup>th</sup> September.
- ✓ **Isolated heavy rainfall** very likely over Uttarakhand & East Rajasthan on 28<sup>th</sup> September.

#### South Peninsular India

- ✓ Fairly widespread to widespread light to moderate rainfall very likely over Kerala & Mahe, Lakshadweep during the week; Scattered to Fairly widespread light to moderate rainfall over the rest of the region during the week.
- ✓ **Isolated heavy rainfall** very likely over Tamil Nadu during 28<sup>th</sup> to 30<sup>th</sup>, South Interior Karnataka on 28<sup>th</sup> and 29<sup>th</sup>, Rayalaseema on 28<sup>th</sup> September & 2<sup>nd</sup> October, Coastal Karnataka on 29<sup>th</sup>, Lakshadweep on 30<sup>th</sup> and over Kerala & Mahe during 28<sup>th</sup> September to 2<sup>nd</sup> October.

#### Southwest Monsoon withdrawal Map (ANNEXURE IV)

**For more details, kindly refer:**

[https://mausam.imd.gov.in/responsive/all\\_india\\_forcast\\_bulletin.php](https://mausam.imd.gov.in/responsive/all_india_forcast_bulletin.php)

**For District wise warnings refer:**

<https://mausam.imd.gov.in/responsive/districtWiseWarningGIS.php>

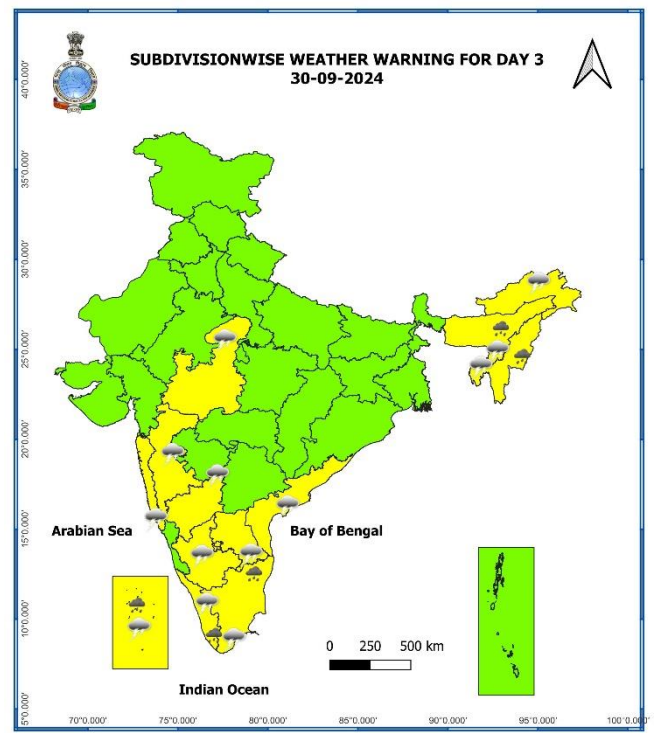
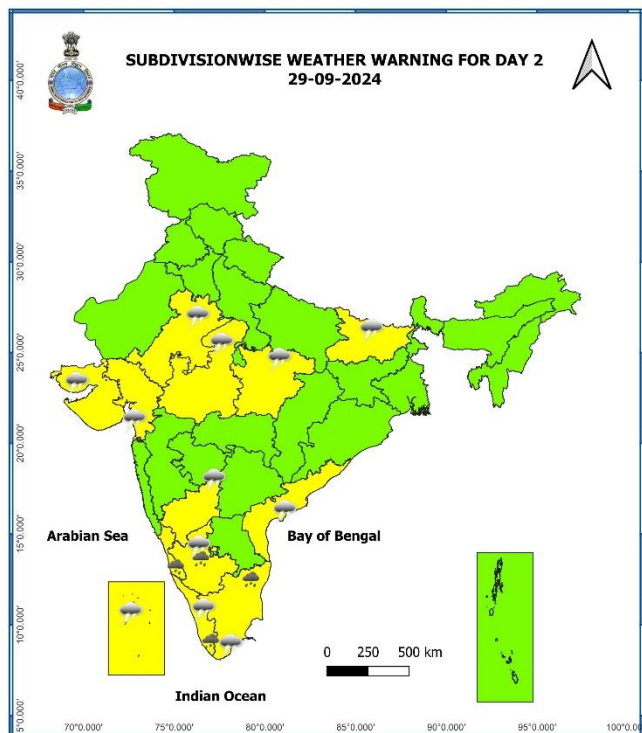
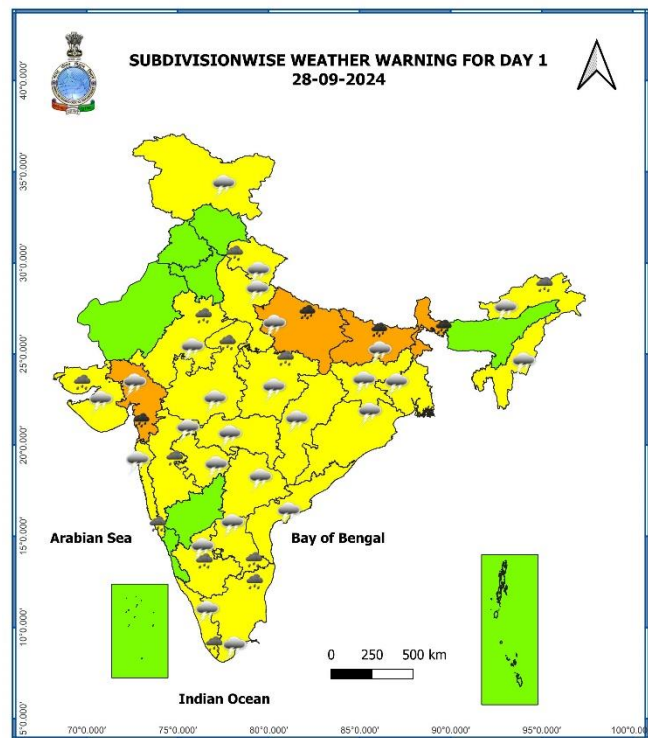
**Significant Rainfall recorded during past 24 hours till 0830 hours IST of today 28.09.2024 (in cm):**

- ❖ **Sub-Himalayan West Bengal & Sikkim:** Nagarkata (dist Jalpaiguri) 27, Gajoldoba (dist Jalpaiguri) 25, Murti (dist Jalpaiguri) 23, Neora (dist Jalpaiguri) 23, Champasari (dist Darjeeling) 22, Chengmari/diana (dist Jalpaiguri) 22, Siliguri Pto (dist Darjeeling) 21, Sevoke (dist Darjeeling) 20, Hasimara (dist Alipurduar) 19, Buxaduar (dist Alipurduar) 18, Bhutanghat (dist Alipurduar) 18, Bagdogra Iaf (dist Darjeeling) 17, Jalpaiguri (dist Jalpaiguri) 16, Sukiapokhri (dist Darjeeling) 16, Alipurduar (pto) (dist Alipurduar) 16, Darjeeling (dist Darjeeling) 15, Damthang (dist Namchi) 14, Domohani (dist Jalpaiguri) 14, Lava (dist Kalimpong) 13, Dhupguri (dist Jalpaiguri) 13, Kalimpong (dist Kalimpong) 13, Jhallong (dist Kalimpong) 13, Amfu Kalimpong (dist Kalimpong) 12, Munsong (dist Darjeeling) 12, Kumargram (dist Alipurduar) 12, Rongo (dist Kalimpong) 12, Rongli (dist Pakyong) 12, Algarah (dist Kalimpong) 12, Nh31 Bridge (dist Jalpaiguri) 12, Amfu Pundibari (dist Cooch Behar) 12, Pedong (dist Kalimpong) 11, Ravangla Arg (dist Namchi) 11, Gyalsing (pto) (dist Gyalshing) 11, Gangtok (dist Gangtok) 11, Majitar (dist Pakyong) 10, Yuksom (dist Gyalshing) 10, Tadong (dist Gangtok) 10, Bagrakote (dist Jalpaiguri) 10, Khanitar (dist Pakyong) 9, Mathabhanga (dist Cooch Behar) 9, Kabi (dist Mangan) 9, Mangan (dist Mangan) 9, Pakyong (dist Pakyong) 9, Chepan (dist Alipurduar) 9, Mekhliganj (dist Cooch Behar) 7, Falakata (dist Alipurduar) 7, Dentam (dist Gyalshing) 7.
- ❖ **East Uttar Pradesh:** Basti Cwc (dist Basti) 26, Bansi Cwc (dist Siddharth Nagar) 26, Nichlaul (dist Maharajganj) 24, Chanderdeepghat (dist Gorakhpur) 23, Bansgaon (dist Gorakhpur) 21, Birdghat (dist Gorakhpur) 20, Ayodhya (dist Ayodhya) 20, Trimohani Ghat Fmo (dist Maharajganj) 18, Mankapur (dist Gonda) 18, Balrampur (dist Balrampur) 18, Tanda (dist Ambedkar Nagar) 17, Mehdawal (dist Sant Kabir Nagar) 17, Uska Bazar Fmo (dist Siddharth Nagar) 17, Mukhlispur (dist Gorakhpur) 17, Gorakhpur (dist Gorakhpur) 15, Nautanwa (dist Maharajganj) 15, Naugarh (dist Siddharth Nagar) 14, Dhanghata (dist Sant Kabir Nagar) 14, Gonda Sadar (dist Gonda) 14, Domeriaganj (dist Siddharth Nagar) 13, Shoharatgarh (dist Siddharth Nagar) 13, Basti Obsy (dist Basti) 13, Maharajganj (dist Maharajganj) 13, Regoli (dist Gorakhpur) 13, Khalilabad (dist Sant Kabir Nagar) 12, Pharenda (dist Maharajganj) 12, Akbarpur (dist Ambedkar Nagar) 12, Balrampur (t) (dist Balrampur) 12, Kakrahi (dist Siddharth Nagar) 12, Sultanpur Obsy (dist Sultanpur) 11, Akbarpur Fmo (dist Ambedkar Nagar) 10, Pratapgarh (t) (dist Pratapgarh) 10, Tulasipur (dist Balrampur) 10, Itwa (dist Siddharth Nagar) 9, Tarabganj (dist Gonda) 9, Lambhuua (dist Sultanpur) 9, Salempur (dist Deoria) 9, Raniganj (dist Pratapgarh) 9, Azamgarh (dist Azamgarh) 8, Ayodhya (ag) (dist Ayodhya) 8, Sultanpur Cwc (dist Sultanpur) 8, Kanpur Iaf (dist Kanpur City) 7, Dhaurahara (dist Kheri) 7, Amethi (dist Amethi) 7, Patti (dist Pratapgarh) 7, Ghosi (dist Mau) 7, Haidargarh (dist Barabanki) 7, Ikauna (dist Shrawasti) 7, Phaphmau Fmo (dist Prayagraj) 7, Karchhana (dist Prayagraj) 7, Padrauna (dist Kushi Nagar) 7, Bikapur (dist Ayodhya) 7.
- ❖ **Bihar:** Tribeni/balmikinagar (dist West Champaran) 23, Chanpatia (dist West Champaran) 21, Motihari (dist East Champaran) 20, Gaunaha (dist West Champaran) 19, Lauria Nandargarh (dist West Champaran) 19, Bettiah (dist West Champaran) 19, Patahi (dist East Champaran) 18, Thakrahan (dist West Champaran) 18, Sikta (dist West Champaran) 18, Adapur (dist East Champaran) 17, Tedhagach (dist Kishanganj) 17, Sugauli (dist East Champaran) 16, Ramnagar (dist West Champaran) 15, Turkaulia (dist East Champaran) 15, Harsidhi (dist East Champaran) 15, Sangrampur (dist East Champaran) 14, Chatia (dist East Champaran) 14, Birpur (dist Supaul) 14, Lalbegiaghat (dist East Champaran) 13, Gopalganj (dist Gopalganj) 13, Banjaria (dist East Champaran) 12, Kotwa (dist East Champaran) 12, Areraj (dist East Champaran) 12, Thawe (dist Gopalganj) 12, Raxual (dist East Champaran) 11, Dighalbank (dist Kishanganj) 11, Mairwa (dist Siwan) 11, Thakurganj (dist Kishanganj) 11, Madhubani (dist West Champaran) 11, Ziradei (dist Siwan) 11, Piprakothi (dist East Champaran) 11, Bhore (dist Gopalganj) 11, Siwan Sadar (dist Siwan) 11, Kalyanpur (dist East Champaran) 11, Baitunthpur (dist Gopalganj) 10, Nautan (dist West Champaran) 10, Pachdeuri (dist Gopalganj) 10, Hathwa (dist Gopalganj) 10, Dhengbridge (dist Sitamarhi) 10, Bahadurganj (dist Kishanganj) 10, Barauli (dist Gopalganj) 10, Bijaipur (dist Gopalganj) 10, Dhaka (dist East

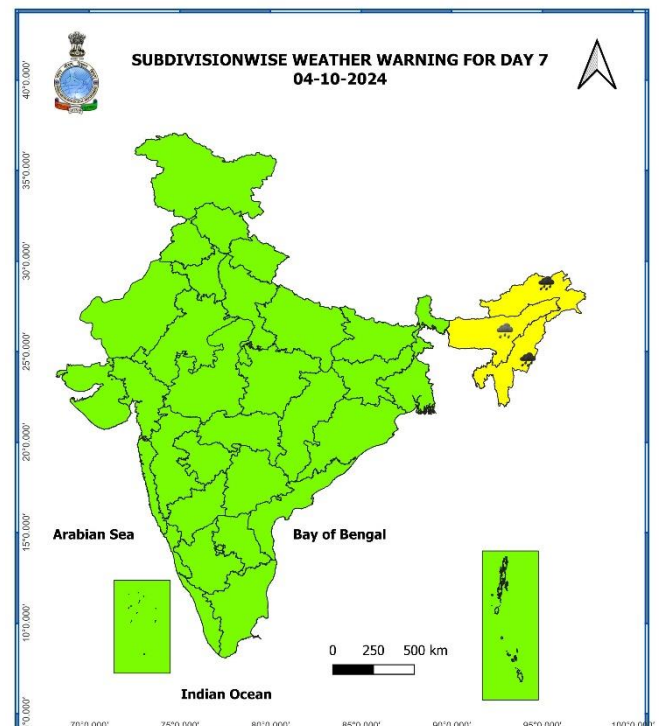
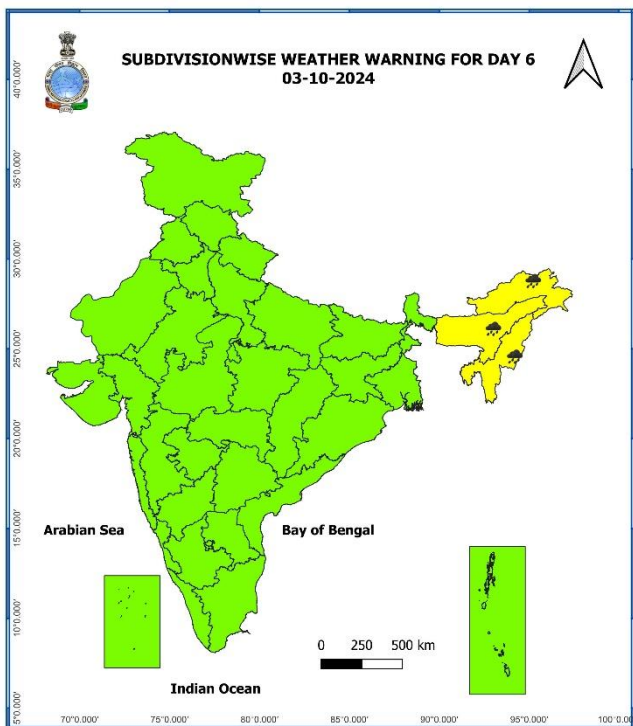
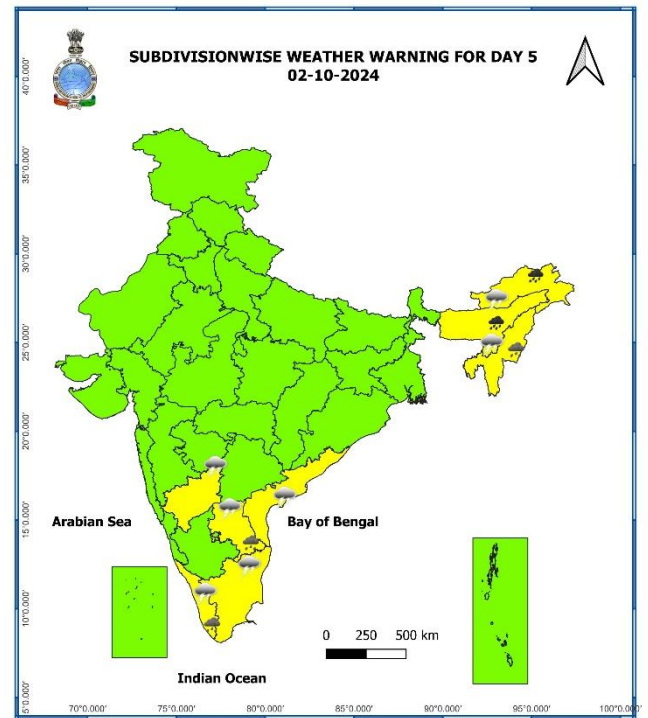
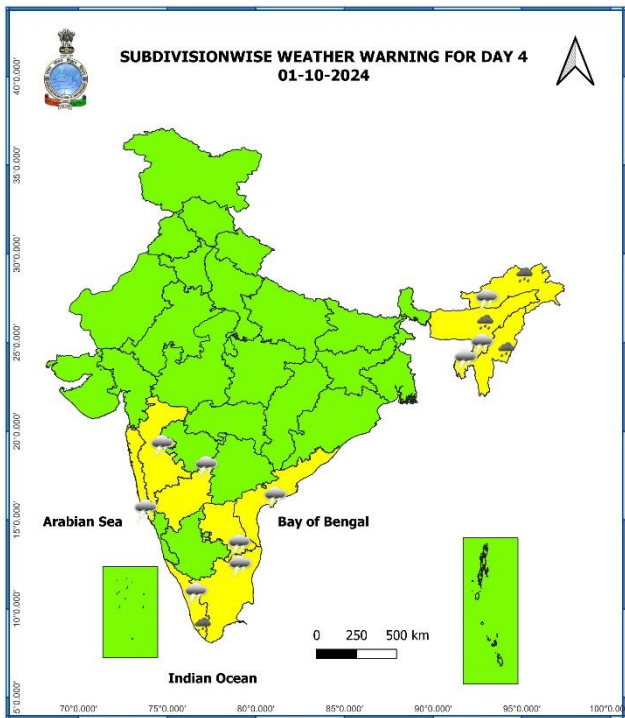
- Champaran) 9, Kataiya (dist Gopalganj) 9, Kessariah (dist East Champaran) 9, Ahirwalia (dist East Champaran) 9, Pratapganj (dist Supaul) 8, Lakri Nabiganj (dist Siwan) 8, Bagaha (dist West Champaran) 8, Barharia (dist Siwan) 7, Pothia (dist Kishanganj) 7, Sattar Kataiya (dist Saharsa) 7, Mahedi/mehshi (dist East Champaran) 7, Kursakanta (dist Araria) 7, Taibpur (dist Kishanganj) 7, Chakia (dist East Champaran) 7, Phulwaria (dist Gopalganj) 7, Darauli (dist Siwan) 7, Kishanganj (dist Kishanganj) 7, Narpatganj (dist Araria) 7, Forbesganj (dist Araria) 7.
- ❖ **Madhya Maharashtra:** Lonavala\_agri (dist Pune) 19, Navapur (dist Nandurbar) 8, Trimbakshwar (dist Nashik) 7, Igatpuri (dist Nashik) 7.
  - ❖ **Gujarat Region:** Sagbara (dist Narmada) 17, Surat City (dist Surat) 16, Umerpada (dist Surat) 10, Jalalpor (dist Navsari) 9, Navsari (dist Navsari) 8, Daman Fmo (dist Daman) 8, Dholka (dist Ahmedabad) 7, Gandevi (dist Navsari) 7, Umergam (dist Valsad) 7, Danta (dist Banaskantha) 7, Vadodara (dist Vadodara) 7, Vadali (dist Sabarkantha) 7, Pardi (dist Valsad) 7, Navasari\_aws (dist Navsari) 7.
  - ❖ **West Madhya Pradesh:** Sardarpur (dist Dhar) 15, Jabot (dist Alirajpur) 13, Barod (dist Agar-malwa) 12, Kathiwada (dist Alirajpur) 10, Rajpur (dist Barwani) 9, Alirajpur (dist Alirajpur) 9, Susner (dist Agar-malwa) 8, Ranapur (dist Jhabua) 8, Ichhawar (dist Sehore) 8, Udaigarh (dist Alirajpur) 8, Gautampura (dist Indore) 7, Anjad (dist Barwani) 7, Sondwa (dist Alirajpur) 7, Vidisha (dist Vidisha) 7.
  - ❖ **Saurashtra & Kutch:** Lakhtar (dist Surendranagar) 14, Junagadh (dist Junagadh) 12, Dhoraji (dist Rajkot) 12, Porbandar (dist Porbandar) 11, Manavadar (dist Junagadh) 11, Mangrol(j) (dist Junagadh) 10, Bhanvad (dist Devbhoomi Dwarka) 10, Upleta (dist Rajkot) 10, Ranavav (dist Porbandar) 9, Talala (dist Gir Somnath) 9, Vanthali (dist Junagadh) 8, Lalpur (dist Jamnagar) 7, Visavadar (dist Junagadh) 7.
  - ❖ **Konkan & Goa:** Matheran (dist Raigad) 12, Pen (dist Raigad) 9, Karjat\_agri (dist Raigad) 8, Mokheda - Fmo (dist Palghar) 8, Jawhar (dist Palghar) 8, Vikramgad (dist Palghar) 8, Uran (dist Raigad) 7, Murud (dist Raigad) 7.
  - ❖ **Himachal Pradesh:** Naina Davi (dist Bilaspur) 8.
  - ❖ **RAYALASEEMA:** Chittoor (dist Chittoor) 8.
  - ❖ **Tamil Nadu, Puducherry & Karaikal:** Sattur (dist Virudhunagar), Srivilliputhur (dist Virudhunagar) 8 Each; Vazhapadi (dist Salem) 7.
  - ❖ **East Rajasthan:** Manohar Thana (dist Jhalawar) 7, Dungarpur Tehsil Sr (dist Dungarpur) 7.
  - ❖ **Chhattisgarh:** Chando (dist Balrampur) 7.
  - ❖ **Uttarakhand:** Jollyghat (dist Dehradun) 7, Narendranagar (dist Garwal Tehri) 7.
  - ❖ **Assam & Meghalaya:** Dhubri\_Cwc (dist Dhubri) 7.

7 Days Rainfall Forecast								
S. No.	Subdivision	28-Sep	29-Sep	30-Sep	01-Oct	02-Oct	03-Oct	04-Oct
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1	ANDAMAN & NICOBAR ISLANDS	SCT	SCT	SCT	FWS	FWS	FWS	FWS
2	ARUNACHAL PRADESH	FWS	SCT	FWS	FWS	WS	WS	WS
3	ASSAM & MEGHALAYA	SCT	FWS	FWS	WS	WS	WS	FWS
4	NAGALAND, MANIPUR, MIZORAM & TRIPURA	FWS	FWS	FWS	WS	WS	WS	FWS
5	SUB-HIMALAYAN WEST BENGAL & SIKKIM	WS	SCT	SCT	FWS	FWS	FWS	FWS
6	GANGETIC WEST BENGAL	SCT	ISOL	ISOL	SCT	SCT	SCT	SCT
7	ODISHA	ISOL	ISOL	ISOL	ISOL	ISOL	FWS	FWS
8	JHARKHAND	SCT	ISOL	ISOL	ISOL	SCT	SCT	SCT
9	BIHAR	FWS	ISOL	ISOL	ISOL	SCT	SCT	ISOL
10	EAST UTTAR PRADESH	FWS	SCT	SCT	ISOL	ISOL	ISOL	ISOL
11	WEST UTTAR PRADESH	SCT	ISOL	ISOL	DRY	DRY	DRY	ISOL
12	UTTARAKHAND	SCT	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
13	HARYANA CHANDIGARH & DELHI	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY
14	PUNJAB	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
15	HIMACHAL PRADESH	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY
16	JAMMU & KASHMIR AND LADAKH	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
17	WEST RAJASTHAN	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY
18	EAST RAJASTHAN	ISOL	ISOL	ISOL	ISOL	DRY	DRY	DRY
19	WEST MADHYA PRADESH	FWS	SCT	ISOL	ISOL	ISOL	ISOL	ISOL
20	EAST MADHYA PRADESH	FWS	SCT	ISOL	ISOL	ISOL	ISOL	ISOL
21	GUJARAT REGION	WS	FWS	SCT	ISOL	ISOL	ISOL	ISOL
22	SAURASHTRA & KUTCH	WS	FWS	SCT	ISOL	DRY	DRY	DRY
23	KONKAN & GOA	WS	FWS	SCT	SCT	SCT	SCT	SCT
24	MADHYA MAHARASHTRA	FWS	SCT	SCT	SCT	SCT	ISOL	ISOL
25	MARATHAWADA	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
26	VIDARBHA	FWS	SCT	SCT	SCT	ISOL	ISOL	ISOL
27	CHHATTISGARH	SCT	SCT	ISOL	ISOL	ISOL	ISOL	ISOL
28	COASTAL ANDHRA PRADESH & YANAM	SCT	SCT	SCT	FWS	FWS	FWS	SCT
29	TELANGANA	ISOL	SCT	SCT	SCT	SCT	SCT	SCT
30	RAYALASEEMA	ISOL	ISOL	ISOL	SCT	SCT	SCT	ISOL
31	TAMILNADU PUDUCHERRY & KARAIKAL	SCT	SCT	SCT	SCT	SCT	SCT	SCT
32	COASTAL KARNATAKA	SCT	FWS	FWS	FWS	FWS	FWS	SCT
33	NORTH INTERIOR KARNATAKA	ISOL	ISOL	SCT	SCT	FWS	FWS	SCT
34	SOUTH INTERIOR KARNATAKA	SCT	FWS	SCT	SCT	FWS	FWS	SCT
35	KERALA & MAHE	WS	WS	WS	FWS	FWS	FWS	FWS
36	LAKSHADWEEP	FWS	WS	WS	FWS	FWS	SCT	SCT

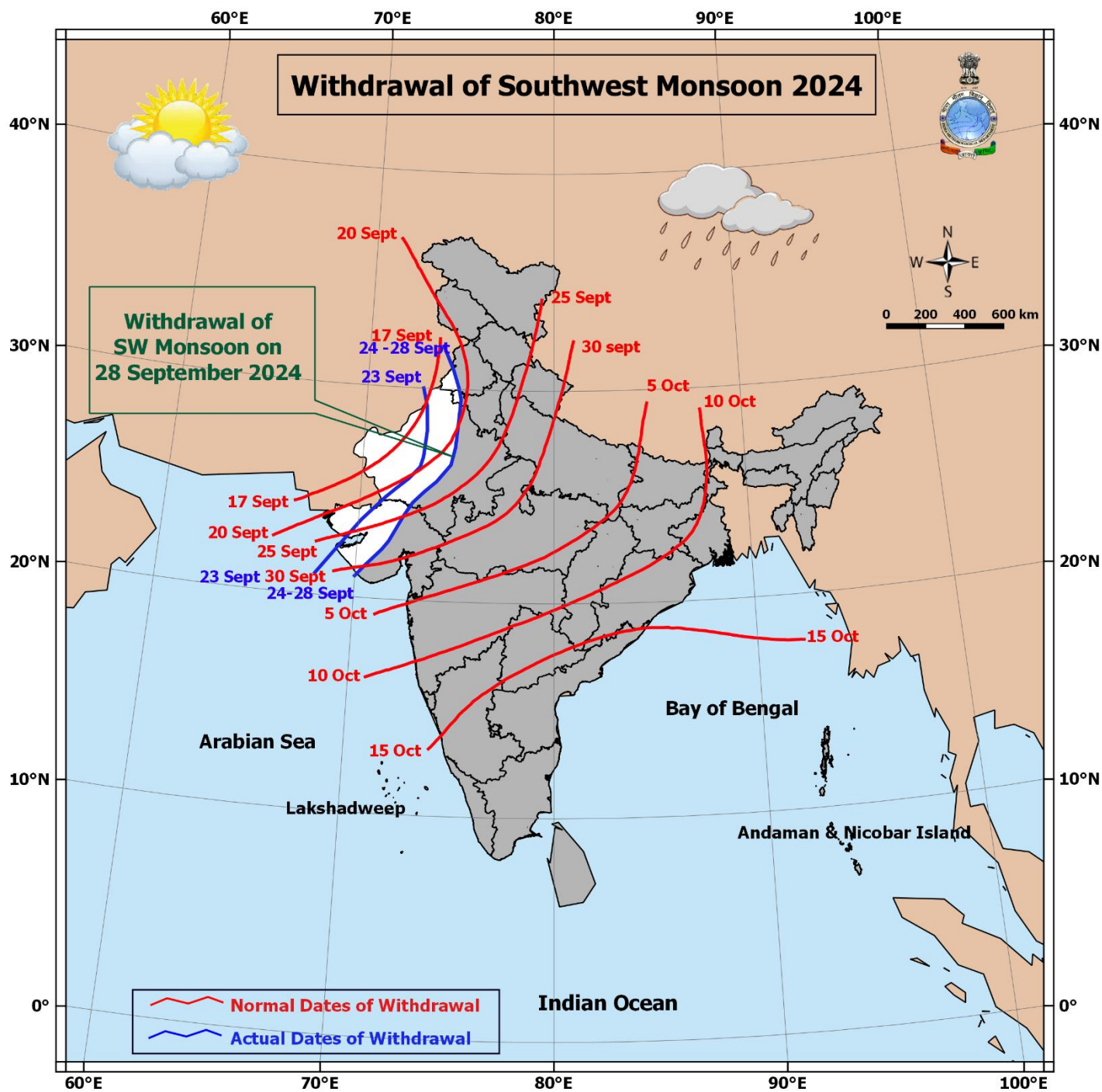
- As the lead period increases forecast accuracy decreases.







- 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.





## Impact due to

- ✓ **Isolated heavy to very heavy rainfall** very likely over on East Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim, Bihar, Gujarat State on 28<sup>th</sup> September; Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura during 2<sup>nd</sup> to 4<sup>th</sup> October, Assam & Meghalaya on 2<sup>nd</sup> & 3<sup>rd</sup>.
- ✓ **Moderate flash flood risk** likely over few watersheds & neighbourhoods of East Uttar Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, West Madhya Pradesh, South Gujarat Region on 28<sup>th</sup> & 29<sup>th</sup> September. (**Annexure V**).

## Impact Expected

- ✓ 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.
- ✓ 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)

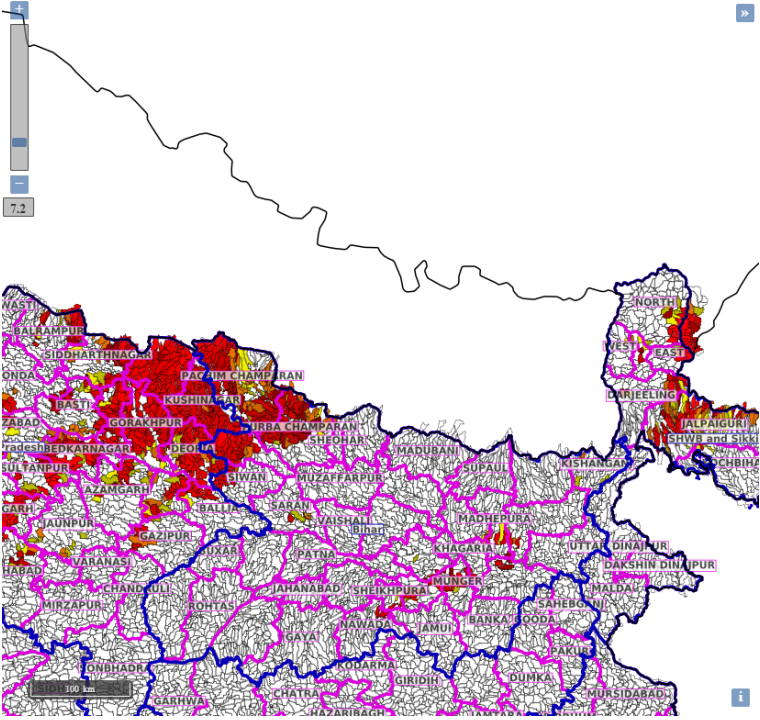
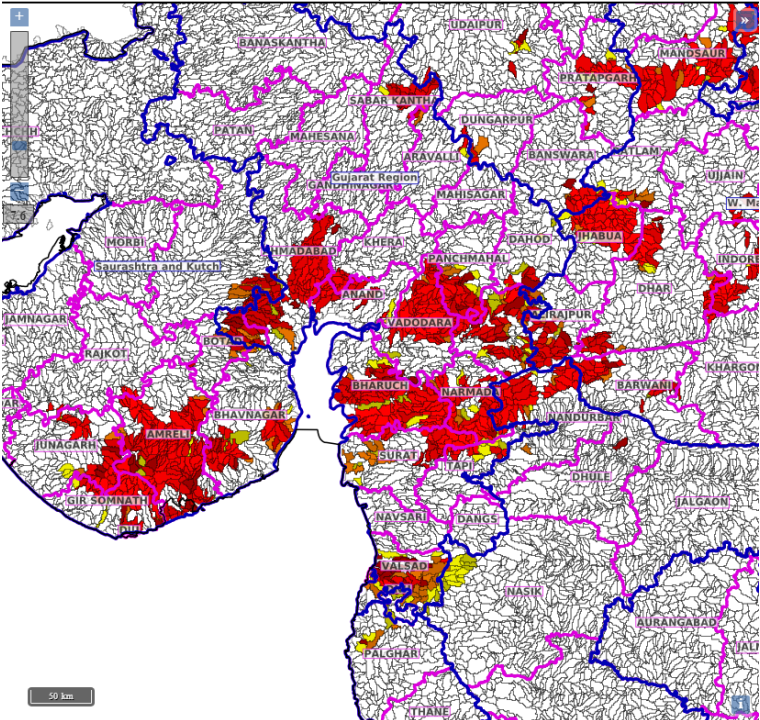
## Action Suggested

- ✓ 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

## Agromet advisories for Heavy Rainfall likely over various parts of the country

- In Madhya Maharashtra region of **Maharashtra**, postpone harvesting of matured soybean, groundnut, maize and pearl millet. Immediately move the harvested produce to safer places and cover them with plastic sheets or tarpaulin.
- In Konkan region of **Maharashtra**, make arrangements to drain out excess water from rice, finger millet, turmeric, groundnut, vegetables and orchards.
- Make provision for draining out excess water from standing crop fields and fruit orchards to avoid water stagnation in Tamilnadu, Himachal Pradesh, Uttarakhand, East Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Gujarat, Goa, West Bengal, Odisha, Bihar and Jharkhand.
- Keep the harvested produce at safer places.
- Provide mechanical support to horticultural crops & staking to vegetables.

Flash Flood Warnings:

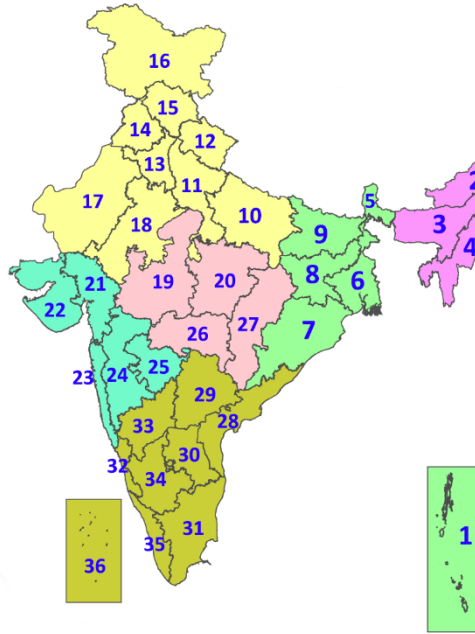
<p>24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 29-09-2024 :</p> <p><b>Moderate to high flash flood risk</b> likely over few watersheds &amp; neighbourhoods of following Met Sub-divisions during next 24 hours.</p> <p><b>East Uttar Pradesh</b> – Balrampur, Sidharthnagar, Kushinagar, Maharajganj, Basti, Santkabirnagar, Gorakhpur, Ambedkarnagar, Azamgarh, Mau, Balia, Gazipur and Deoria districts.</p> <p><b>Bihar</b> - Gopalganj, Pachim Champaran, Purba Champaran, Siwan, Sitamrhi, Araria, Kishanganj and Saran districts.</p> <p><b>SHWB &amp; Sikkim</b> – North Sikkim, East Sikkim, South Sikkim, West Sikkim, Darjeeling, Jalpaiguri, S and Cooch Behar districts.</p> <p>Surface runoff/ Inundation may occur at some fully saturated soils &amp; low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.</p>	<p>Product: NCUM FFR   Timescale: 24-hr   Region: "INDIA" Product Date: 2024-09-28 06:00 UTC   Valid Date: 2024-09-29 06:00 UTC</p> 
<p>24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 29-09-2024 :</p> <p><b>Moderate flash flood risk</b> likely over few watersheds &amp; neighbourhoods of following Met Sub-divisions during next 24 hours.</p> <p><b>South Gujarat Region</b> - Dadar &amp; Nagar Haveli, Daman, Anand, Bharuch, Chhota Udepur, Dahod, Dangs, Narmada, Navsari, Panchmahal, Surat, Tapi, Vadodara and Valsad districts.</p> <p>Adjoining <b>West Madhya Pradesh</b> – Jhabua, Ratlam, Dhar, Indore and Ujjain districts.</p> <p>Surface runoff/ Inundation may occur at some fully saturated soils &amp; low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.</p>	<p>Product: NCUM FFR   Timescale: 24-hr   Region: "INDIA" Product Date: 2024-09-28 06:00 UTC   Valid Date: 2024-09-29 06:00 UTC</p> 

### **Legends & abbreviations:**

- ❖ **Heavy Rain:**64.5-115.5mm; **Very Heavy Rain:**115.6-204.4mm; **Extremely Heavy Rain:** >204.4mm.
- ❖ **Obsy:** Observatory; **AWS:** Automatic Weather Station; **ARG:** Automatic Rain Gauge; **dist:** District; **NH:** National Highway; **KVK:** Krishi Vigyan Kendra; **DVC:** Damodar Valley Corporation; **PTO:** Part Time Office, **Aero:** Aerodrome, **IAF:** Indian Air Force.
- ❖ **Region wise classification of meteorological Sub-Divisions:**
  - **Northwest India:** Western Himalayan Region (Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand); Punjab, Haryana-Chandigarh-Delhi; West Uttar Pradesh, East Uttar Pradesh, West Rajasthan and East Rajasthan.
  - **Central India:** West Madhya Pradesh, East Madhya Pradesh, Vidarbha and Chhattisgarh.
  - **East India:** Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim; Gangetic West Bengal, Odisha and Andaman & Nicobar Islands.
  - **Northeast India:** Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
  - **West India:** Gujarat Region, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra and Marathawada.
  - **South India:** Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, Coastal Karnataka, North Interior Karnataka, South Interior Karnataka, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal and Lakshadweep.

## LEGENDS

1. अंडमान और निकोबार द्वीपसमूह
2. अरुणाचल प्रदेश
3. असम और मेघालय
4. नागालैंड, मणिपुर, मिजोरम और त्रिपुरा
5. उप-हिमालयी पश्चिम बंगाल और सिक्किम
6. गंगीय पश्चिम बंगाल
7. ओडिशा
8. झारखंड
9. बिहार
10. पूर्वी उत्तर प्रदेश
11. पश्चिम उत्तर प्रदेश
12. उत्तराखंड
13. हरियाणा, चंडीगढ़ और दिल्ली
14. पंजाब
15. हिमाचल प्रदेश
16. जम्मू और कश्मीर और लद्दाख
17. पश्चिम राजस्थान
18. पूर्वी राजस्थान
19. पश्चिम मध्य प्रदेश
20. पूर्वी मध्य प्रदेश
21. गुजरात
22. सौराष्ट्र
23. कोंकण और गोवा
24. मध्य महाराष्ट्र
25. मराठवाड़ा
26. विदर्भ
27. छत्तीसगढ़
28. तटीय आंध्र प्रदेश और यनम
29. तेलंगाना
30. रायलसीमा
31. तमिलनाडु, पुडुचेरी और कराईकल
32. तटीय कर्नाटक
33. आंतरिक उत्तरी कर्नाटक
34. आंतरिक दक्षिणी कर्नाटक
35. केरल और माहे
36. लक्षद्वीप



1. Andaman & Nicobar Islands
2. Arunachal Pradesh
3. Assam & Meghalaya
4. Nagaland, Manipur, Mizoram & Tripura
5. Sub-Himalayan West Bengal & Sikkim
6. Gangetic West Bengal
7. Odisha
8. Jharkhand
9. Bihar
10. East Uttar Pradesh
11. West Uttar Pradesh
12. Uttarakhand
13. Haryana, Chandigarh & Delhi
14. Punjab
15. Himachal Pradesh
16. Jammu & Kashmir and Ladakh
17. West Rajasthan
18. East Rajasthan
19. West Madhya Pradesh
20. East Madhya Pradesh
21. Gujarat
22. Saurashtra
23. Konkan & Goa
24. Madhya Maharashtra
25. Marathwada
26. Vidarbha
27. Chhattisgarh
28. Coastal Andhra Pradesh & Yanam
29. Telangana
30. Rayalaseema
31. Tamilnadu, Puducherry & Karaikal
32. Coastal Karnataka
33. North Interior Karnataka
34. South Interior Karnataka
35. Kerala & Mahe
36. Lakshadweep

## SPATIAL DISTRIBUTION (% of Stations reporting)

% Stations	Category	% Stations	Category
76-100	Widespread (WS/Most Places)	26-50	Scattered (SCT/A Few Places)
51-75	Fairly Widespread (FWS/Many Places)	1-25	Isolated (ISOL)



Fog



Heavy Snow



Cold Wave



Heavy Rain



Dust Storm



Cold Day



Very Heavy Rain



Heat Wave



Ground Frost



Extremely Heavy Rain



Warm Night



Thunder & Lightning



Hot Day



Hailstorm



Hot & Humid



Dust Raising Winds



Strong Surface Winds

### COLOUR CODED WARNING

No Warning (No Action)
Watch (Be Aware)
Alert (Be Prepared To Take Action)
Warning (Take Action)

### Probabilistic Forecast

Terms	Probability of Occurrence (%)
Unlikely	< 25
Likely	25 - 50
Very Likely	50 - 75
Most Likely	> 75

\* Red colour warning does not mean "Red Alert", Red colour warning means "Take Action".  
Forecast and Warning for any day is valid from 0830 hours IST of day till 0830 hours IST of next day.  
For more details, kindly visit <https://mausam.imd.gov.in> or contact: 011-2434-4599  
(Service to the Nation since 1875)



## DEFINITION/CRITERIA

### Rain/ Snow \*

Heavy: 64.5 to 115.5 mm/cm \*  
Very Heavy: 115.6 to 204.4 mm/cm \*  
Extremely Heavy: > 204.4 mm/cm \*

### Heat Wave

When maximum temperature of a station reaches  $\geq 40^{\circ}\text{C}$  for plains and  $\geq 30^{\circ}\text{C}$  for hilly regions  
(a) Based on Departure from normal

Heat Wave: Maximum Temperature Departure from normal  $4.5^{\circ}\text{C}$  to  $6.4^{\circ}\text{C}$ .

Severe Heat Wave: Maximum Temperature Departure from normal  $\geq 6.5^{\circ}\text{C}$

(b). Based on Actual maximum temperature

Heat Wave: When actual maximum temperature  $\geq 45^{\circ}\text{C}$ .

Severe Heat Wave: When actual maximum temperature  $\geq 47^{\circ}\text{C}$

(c) Criteria for heat wave for coastal stations

When maximum temperature departure is  $> 4.5^{\circ}\text{C}$  from normal. Heat Wave may be described provided maximum temperature  $\geq 37^{\circ}\text{C}$

### Warm Night

When maximum temperature remains  $40^{\circ}\text{C}$

Warm Night: When minimum temperature departure  $4.5^{\circ}\text{C}$  to  $6.4^{\circ}\text{C}$ .

Severe Warm Night: When minimum temperature departure  $> 6.4^{\circ}\text{C}$ .

### Cold Wave

When minimum temperature of a station  $\leq 10^{\circ}\text{C}$  for plains and  $\leq 0^{\circ}\text{C}$  for hilly regions.

(a). Based on departure

Cold Wave: Minimum Temperature Departure from normal  $-4.5^{\circ}\text{C}$  to  $-6.4^{\circ}\text{C}$ .

Severe Cold Wave: Minimum Temperature Departure from normal  $\leq -6.5^{\circ}\text{C}$

(b) Based on actual Minimum Temperature (for Plains only)

Cold Wave: When Minimum Temperature is  $\leq 4.0^{\circ}\text{C}$

Severe Cold Wave: When Minimum Temperature is  $\leq 2.0^{\circ}\text{C}$

(c) For Coastal Stations

When Minimum Temperature departure is  $\leq -4.5^{\circ}\text{C}$  & actual Minimum Temperature is  $\leq 15^{\circ}\text{C}$

### Cold Day

When minimum temperature of a station  $\leq 10^{\circ}\text{C}$  for plains and  $\leq 0^{\circ}\text{C}$  for hilly regions

Based on departure

Cold Day: Maximum Temperature Departure from normal  $-4.5^{\circ}\text{C}$  to  $-6.4^{\circ}\text{C}$ .

Severe Cold Day: Maximum Temperature Departure from normal  $\leq -6.5^{\circ}\text{C}$

### Fog

Phenomenon of small droplets suspended in air and the horizontal visibility  $< 1\text{ km}$

Moderate Fog: When the visibility between 500-200 metres

Dense Fog: when the visibility between 50- 200 metres

Very Dense Fog: when the visibility  $< 50$  metres

### Thunderstorm

Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)

### Dust/Sand Storm

An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.

### Frost

Ice deposits on ground

Air temperature  $\leq 4^{\circ}\text{C}$  ( over Plains)

### Squall

A strong wind that rises suddenly, lasts for atleast 1 minute.

Moderate: Wind speed 52-61 kmph

Severe: Wind speed 62-87 kmph

Very Severe: Wind speed  $> 87$  kmph

### Sea State

Effect of various waves in the sea over specific area

Rough to very rough: Wind speed 41-62 kmph (22-33 knots) & Wave height 2.5-6 metre

High to very high: Wind speed 63-117 kmph ( 34-63 knots) & Wave height 6-14 metre

Phenomenal: Wind speed  $> 117$  kmph ( $> 63$  knots) & Wave height  $> 14$  metre

### Cyclone

Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)

Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)

Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots)

Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots)

Super Cyclone Strom: Wind speed  $> 220$  kmph ( $> 119$  knots)

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