

Government of India Ministry of Earth Sciences India Meteorological Department



Press Release
Date: 18th September, 2024
Time of Lague 1200 hours IST

Time of Issue: 1300 hours IST

Subject: Heavy to very heavy rainfall over Uttar Pradesh and Madhya Pradesh in association with the Well Marked Low Pressure Area on today, the 18th September, 2024

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

Heavy to very heavy rainfall with extremely heavy rainfall at isolated places over West Uttar Pradesh; **Heavy to very heavy rainfall with extremely heavy rainfall** at a few places over East Uttar Pradesh, Madhya Pradesh; at isolated places over Odisha; **Heavy rainfall** at isolated places over Jharkhand and Uttarakhand.

Weather Systems:

- Yesterday's **Depression** over Jharkhand & adjoining north Chhattisgarh weakened into a **Well Marked Low Pressure Area** and lay over central parts of north Madhya Pradesh & neighbourhood at 0830 hours IST of today. It is likely to weaken into a **low pressure area** over the same region during next 24 hours.
- ✓ The western end of monsoon trough is north of its normal position and eastern end is south of its normal position.

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

Central India:

- ✓ Scattered to Fairly Widespread light to moderate rainfall very likely over Madhya Pradesh, Vidarbha, Chhattisgarh during the week.
- ✓ Isolated **heavy rainfall** very likely over West Madhya Pradesh on 18th & 24th; East Madhya Pradesh on 18th, 23rd & 24th and over Chhattisgarh during 22nd-24th September.

Northwest India

- ✓ Scattered to Fairly widespread light to moderate rainfall very likely over the region on 18th and isolated light rainfall during subsequent 6 days.
- ✓ Isolated **very heavy rainfall** very likely over West Uttar Pradesh on 18th September.
- ✓ Isolated **heavy rainfall** very likely over Haryana-Chandigarh-Delhi and East Uttar Pradesh on 18th; Uttarakhand on 18th & 24th September.

East & Northeast India

- ✓ Fairly widespread to Widespread light/moderate rainfall very likely over Andaman & Nicobar Islands; Scattered to Fairly widespread light to moderate rainfall very likely over Assam & Meghalaya & Nagaland, Manipur, Mizoram & Tripura; Isolated to scattered light/moderate rainfall very likely over remaining East India & Arunachal Pradesh during the week.
- ✓ Isolated **heavy rainfall** very likely over Andaman & Nicobar Islands on 18th; Odisha on 18th, 22nd & 23rd; Assam & Meghalaya on 21st & 22nd; Nagaland, Manipur, Mizoram & Tripura during 21st–24th September.

West & South Peninsular India

- ✓ Fairly Widespread to Widespread light/moderate rainfall very likely over Konkan & Goa; Isolated to scattered light/moderate rainfall very likely over remaining region during the week.
- ✓ **Hot and Humid Weather** very likely over Tamil Nadu, Puducherry & Karaikal on 18th & 19th September.

For more details, kindly refer:

https://mausam.imd.gov.in/responsive/all_india_forcast_bulletin.php

For District wise warnings refer:

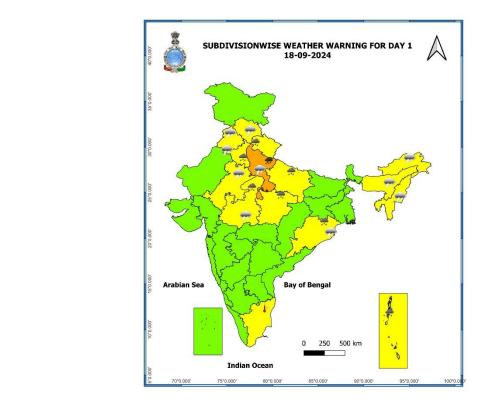
 $\underline{https://mausam.imd.gov.in/responsive/districtWiseWarningGIS.php}$

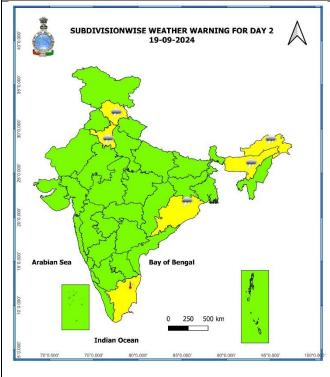
Significant Rainfall recorded during past 24 hours till 0830 hours IST of today 18.09.2024 (in cm):

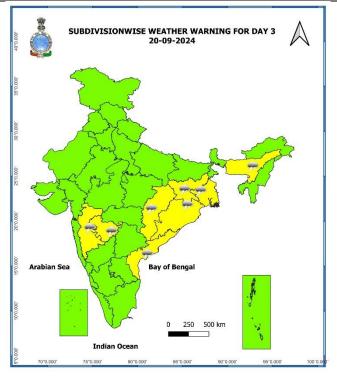
- ❖ West Uttar Pradesh: Rath (Dist Hamirpur) 22, Hamirpur Obsy (Dist Hamirpur) 13, Etawah Obsy (Dist Etawah) 12, Chakkar Nagar (Dist Etawah) 12, Shikohabad (Dist Firozabad) 8, Orai (Dist Jalaun) 7, Bharthana (Dist Etawah) 7;
- ❖ East Uttar Pradesh: Attarra (Dist Banda) 16, Kanpur Obsy (Dist Kanpur City) 12, Mau Tehsil (Dist Chitrakoot) 12, Beberu (Dist Banda) 11, Manikpur (Dist Chitrakoot) 11, Rajapur (Dist Chitrakoot) 11, Karwi (Dist Chitrakoot) 11, Kanpur Iaf (Dist Kanpur City) 10, Banda (Dist Banda) 10, Lalganj (Dist Mirzapur) 10, Tirwa (Dist Kannauj) 9, Koraon (Dist Prayagraj) 9, Chhibramau (Dist Kannauj) 8, Karchhana (Dist Prayagraj) 7, Ghorawal (Dist Sonbhadra) 7, Kannauj(T) (Dist Kannauj) 7, Prayagraj Pbo (Dist Prayagraj) 7, Mirzapur Tehsil (Dist Mirzapur) 7, Prayagraj Sadar (Dist Prayagraj) 7, Bhognipur (Dist Kanpur Dehat) 7;
- ❖ West Madhya Pradesh: Roan (Dist Bhind) 15, Lahar (Dist Bhind) 12, Mihona (Dist Bhind) 11, Gohad (Dist Bhind) 11, Mau (Dist Bhind) 11, Gwalior (Dist Gwalior) 9, Ambah (Dist Morena) 9, Bhander (Dist Datia) 9, Dabra (Dist Gwalior) 9, Bhind-Aws (Dist Bhind) 8, Porsa (Dist Morena) 8, Datia-Aws (Dist Datia) 8, Ater (Dist Bhind) 7, Ghatigaon (Dist Gwalior) 7, Gormi (Dist Bhind) 7, Seodha (Seondha) (Dist Datia) 7;
- ❖ East Madhya Pradesh: Hanumana (Dist Rewa) 13, Chitrangi (Dist Singrauli) 10, Rewa-Aws (Dist Rewa) 10, Gaurihar (Dist Chhatarpur) 10, Mauganj (Dist Rewa) 9, Sarai (Dist Singrauli) 9, Ajaigarh (Dist Panna) 9, Mangawan (Dist Rewa) 8, Nowgong (Dist Chhatarpur) 8, Churhat (Dist Sidhi) 8, Devendranagar (Dist Panna) 7, Naigarhi (Dist Rewa) 7, Sidhi (Gopadbanas) (Dist Sidhi) 7, Nagode (Dist Satna) 7, Birsingpur (Dist Satna) 7, Raipurkarchuliyan (Dist Rewa) 7, Sihawal (Dist Sidhi) 7, Gudh (Dist Rewa) 7, Jawa (Dist Rewa) 7, Shahgarh (Dist Sagar) 7, Unchehra (Dist Satna) 7;
- ❖ Orissa: Dhenkanal Pto (Dhenkanal) 13, Dhenkanal (Dhenkanal) 13, Bhuban (Dhenkanal) 12, Banki (Cuttack) 10, Korei (Jajpur) 10;
- ❖ Jharkhand: Lohardaga Kvk Aws (dist Lohardaga) 8, Kharsema (dist Seraikela-kharsawan) 8;
- Uttarakhand: Rudraprayag (Rudraprayag) 7;

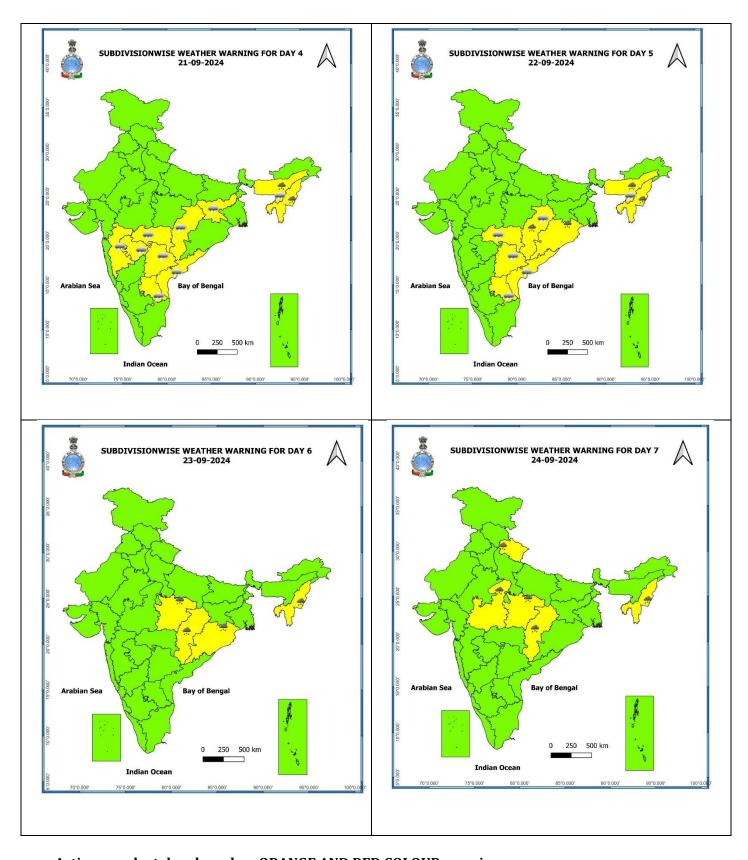
	7 Da	ys Rainf	all Fore	ast				
		18-Sep	19-Sep	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep
S. No.	Subdivision	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1	ANDAMAN & NICOBAR ISLANDS	WS	WS	WS	WS	FWS	FWS	FWS
2	ARUNACHAL PRADESH	ISOL	ISOL	ISOL	ISOL	SCT	SCT	SCT
3	ASSAM & MEGHALAYA	SCT	SCT	SCT	SCT	SCT	FWS	FWS
4	NAGALAND,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

- ✓ **Very heavy rainfall** at isolated places over West Uttar Pradesh on 18th September.
- ✓ **Low to Moderate flash flood risk** likely over few watersheds & neighbourhoods of West Uttar Pradesh & West Madhya Pradesh on 18th September. **(ANNEXURE IV)**

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

- ➤ Drain out excess water from cotton, maize, soybean, pulses and vegetables in **Madhya Pradesh**; from rice, maize, groundnut, sesame, arhar, black gram and vegetables in **Uttar Pradesh** to prevent water logging.
- ➤ Make provision for draining out excess water from standing crop fields and fruit orchards to avoid water stagnation in Andaman & Nicobar Islands, Odisha, Uttarakhand and Haryana.
- ➤ Provide mechanical support to horticultural crops & staking to vegetables. Keep the harvested produce at safer place.

Flash Flood Guidance:

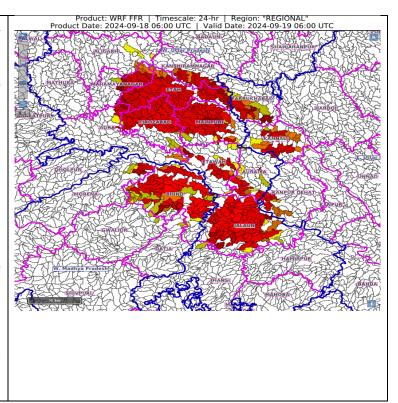
24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 19-09-2024:

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of following Met Sub-divisions during next 24 hours.

West Uttar Pradesh - Agra, Aligarh, Auraiya, Etah, Etawah, Firozabad, Jalaun, Jhansi, Kanshiramnagar, Mahamayanagar and Mainpuri districts.

West Madhya Pradesh - Bhind, Datia, Gwalior and Morena districts.

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



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.



राष्ट्रीय मौसम पूर्वानुमान केन्द्र भारत मौसम विज्ञान विभाग पृथ्वी विज्ञान मंत्रालय

National Weather Forecasting Centre India Meteorological Department **Ministry of Earth Sciences**

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4. नागालैंड, मणिपुर, मिजोरम और त्रिपुरा 5. उप-हिमालयी पश्चिम बंगाल और सिक्किम

6. गंगीय पश्चिम बंगाल



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. आतंरिक उत्तरी कर्नाटक

Sust Raising Winds

34. आतंरिक दक्षिणी कर्नाटक

35. केरल और माहे

36. लक्षद्वीप



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. Puniab

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)



Strong Surface Winds

Probability of Occurrence (%) Very Likely 50 - 75 Most Likely > 75





DEFINITION/CRITERIA

	DEFINITION/CRITERIA
	Heavy: 64.5 to 115.5 mm/cm *
Rain/ Snow *	Very Heavy: 115.6 to 204.4 mm/cm*
	Extremely Heavy: > 204.4 mm/cm *
	When maximum temperature of a station reaches ≥40° C for plains and ≥30° C for hilly regions (a) Based on Departure from normal
Heat Wave	Heat Wave: Maximum Temperature Departure from normal 4.5° C to 6.4° C.
	Severe Heat Wave: Maximum Temperature Departure from normal ≥6.5° C
	(b). Based on Actual maximum temperature
	Heat Wave: When actual maximum temperature ≥45°C.
	Severe Heat Wave: When actual maximum temperature ≥47°C
	(c). Criteria for heat wave for coastal stations When maximum temperature departure is >4.5°C from normal. Heat Wave may be described provided maximum temperature ≥37°C
	When maximum temperature remains 40°C
Warm Night	Warm Night: When minimum temperature departure 4.5 °C to 6.4 °C.
	Severe Warm Night: When minimum temperature departure >6.4 °C.
	When minimum temperature of a station ≤10°C for plains and ≤0°C for hilly regions. (a). Based on departure Cold Mayor Minimum Temperature Departure from person 4.45 °C to 6.4 °C
	Cold Wave: Minimum Temperature Departure from normal -4.5 °C to -6.4 °C. Severe Cold Wave: Minimum Temperature Departure from normal ≤ -6.5 °C
Cold Wave	
Joid Wave	(b) Based on actual Minimum Temperature (for Plains only)
	Cold Wave: When Minimum Temperature is ≤ 4.0 °C
	Severe Cold Wave: When Minimum Temperature is ≤ 2.0 °C
	(c) For Coastal Stations
	When Minimum Temperature departure is ≤-4.5 °C & actual Minimum Temperature is ≤ 15 °C
	When minimum temperature of a station ≤10°C for plains and ≤0°C for hilly regions Based on departure
Cold Day	Cold Day: Maximum Temperature Departure from normal -4.5 °C to -6.4 °C.
	Severe Cold Day: Maximum Temperature Departure from normal ≤ -6.5 °C
	Phenomenon of small droplets suspended in air and the horizontal visibility < 1km
Fog	Moderate Fog: When the visibility between 500-200 metres Dense Fog: when the visibility between 50-200 metres
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Thunderstorm Dust/Sand Storm	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 Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder) An ensemble of particles of dust or sand energetically lifted to great heights by a strong and
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Thunderstorm Dust/Sand Storm Frost	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 Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder) An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind. Ice deposits on ground Air temperature ≤4°C (over Plains)
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Thunderstorm Dust/Sand Storm Frost Squall	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 Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder) An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind. Ice deposits on ground Air temperature ≤4°C (over Plains) 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 Effect of various waves in the sea over specific area
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Thunderstorm Dust/Sand Storm Frost Squall	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 Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder) An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind. Ice deposits on ground Air temperature ≤4°C (over Plains) A strong wind that rises suddenly, lasts for atleast 1 minute. Moderate: Wind speed 52-61 kmph Severe: Wind speed 52-87 kmph Very Severe: Wind speed 587 kmph Very Severe: Wind speed 587 kmph 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
Thunderstorm Dust/Sand Storm Frost Squall	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 Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder) An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind. Ice deposits on ground Air temperature ≤4°C (over Plains) 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 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 (>63 knots) & Wave height >14 metre Phenomenal: Wind speed 61-87 kmph (34-47 knots) Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)
Thunderstorm Dust/Sand Storm Frost Squall	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 Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder) An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind. Ice deposits on ground Air temperature ≤4°C (over Plains) A strong wind that rises suddenly, lasts for atleast 1 minute. Moderate: Wind speed 52-61 kmph Severe: Wind speed 52-61 kmph Very Severe: Wind speed 587 kmph Very Severe: Wind speed 587 kmph 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 53-117 kmph (34-63 knots) & Wave height 6-14 metre Phenomenal: Wind speed >117 kmph (34-63 knots) & Wave height >14 metre Cyclonic Storm: Wind speed 88-87 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)
Thunderstorm Dust/Sand Storm Frost Squall Sea State	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 Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder) An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind. Ice deposits on ground Air temperature ≤4°C (over Plains) 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 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 (>63 knots) & Wave height >14 metre Phenomenal: Wind speed 61-87 kmph (34-47 knots) Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)