



All India Impact Based Weather Warning Bulletin

Tuesday 19 October 2021
Time of Issue: 0830 hours IST

(MORNING)

19 October (Day 1): ♦ **Heavy to very heavy rainfall with extremely heavy falls** very likely at isolated places over Sub-Himalayan West Bengal & Sikkim; **Heavy to very heavy rainfall** at isolated places over Uttarakhand, Bihar, Gangetic West Bengal, Arunachal Pradesh and Assam & Meghalaya and **heavy rainfall** at isolated places over Uttar Pradesh, Jharkhand, Odisha and Nagaland, Manipur, Mizoram & Tripura.

♦ **Thunderstorm accompanied with lightning and gusty winds** (speed reaching 30-40 kmph) likely at isolated places over Gangetic West Bengal and **with lightning** at isolated places over Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim, Odisha, Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.

♦ **Squally weather** (wind speed reaching 40-50 kmph) very likely over North Bay of Bengal along & off West Bengal-Bangladesh coasts. Fishermen are advised not to venture into these areas.

20 October (Day 2): ♦ **Heavy to very heavy rainfall** very likely at isolated places over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh and Assam & Meghalaya and **heavy rainfall** at isolated places over Bihar, Gangetic West Bengal, Nagaland, Manipur, Mizoram & Tripura, Tamilnadu, Puducherry & Karaikal and Kerala & Mahe.

♦ **Thunderstorm accompanied with lightning** at isolated places over Bihar, Jharkhand, Gangetic West Bengal, South Interior Karnataka Tamilnadu, Puducherry & Karaikal and Kerala & Mahe.

♦ **Squally weather** (wind speed reaching 40-50 kmph) very likely over Southeast Arabian Sea along & off Kerala coast and Lakshadweep area. Fishermen are advised not to venture into these areas.

21 October (Day 3): ♦ **Heavy to very heavy rainfall** likely at isolated places over Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe and **heavy rainfall** at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Coastal & South Interior Karnataka and Rayalaseema.

♦ **Thunderstorm accompanied with lightning** likely at isolated places over Rayalaseema, Coastal & South Interior Karnataka Tamilnadu, Puducherry & Karaikal, Lakshadweep and Kerala & Mahe.

♦ **Squally weather** (wind speed reaching 40-50 kmph) likely over Southeast Arabian Sea along & off Kerala coast and Lakshadweep area. Fishermen are advised not to venture into these areas.

22 October (Day 4): ♦ **Heavy to very heavy rainfall** likely at isolated places over Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe and **heavy rainfall** at isolated places over Coastal & South Interior Karnataka and Rayalaseema.

♦ **Thunderstorm accompanied with lightning** likely at isolated places over Rayalaseema, Coastal & South Interior Karnataka Tamilnadu, Puducherry & Karaikal, Lakshadweep and Kerala & Mahe.

♦ **Squally weather** (wind speed reaching 40-50 kmph) likely over Southeast Arabian Sea along & off Kerala coast and Lakshadweep area. Fishermen are advised not to venture into these areas.

23 October (Day 5): ♦ **Heavy rainfall** likely at isolated places over Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.

♦ **Thunderstorm accompanied with lightning** likely at isolated places over Jammu, Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Rayalaseema, South Interior Karnataka, Tamilnadu, Puducherry & Karaikal, Lakshadweep and Kerala & Mahe.

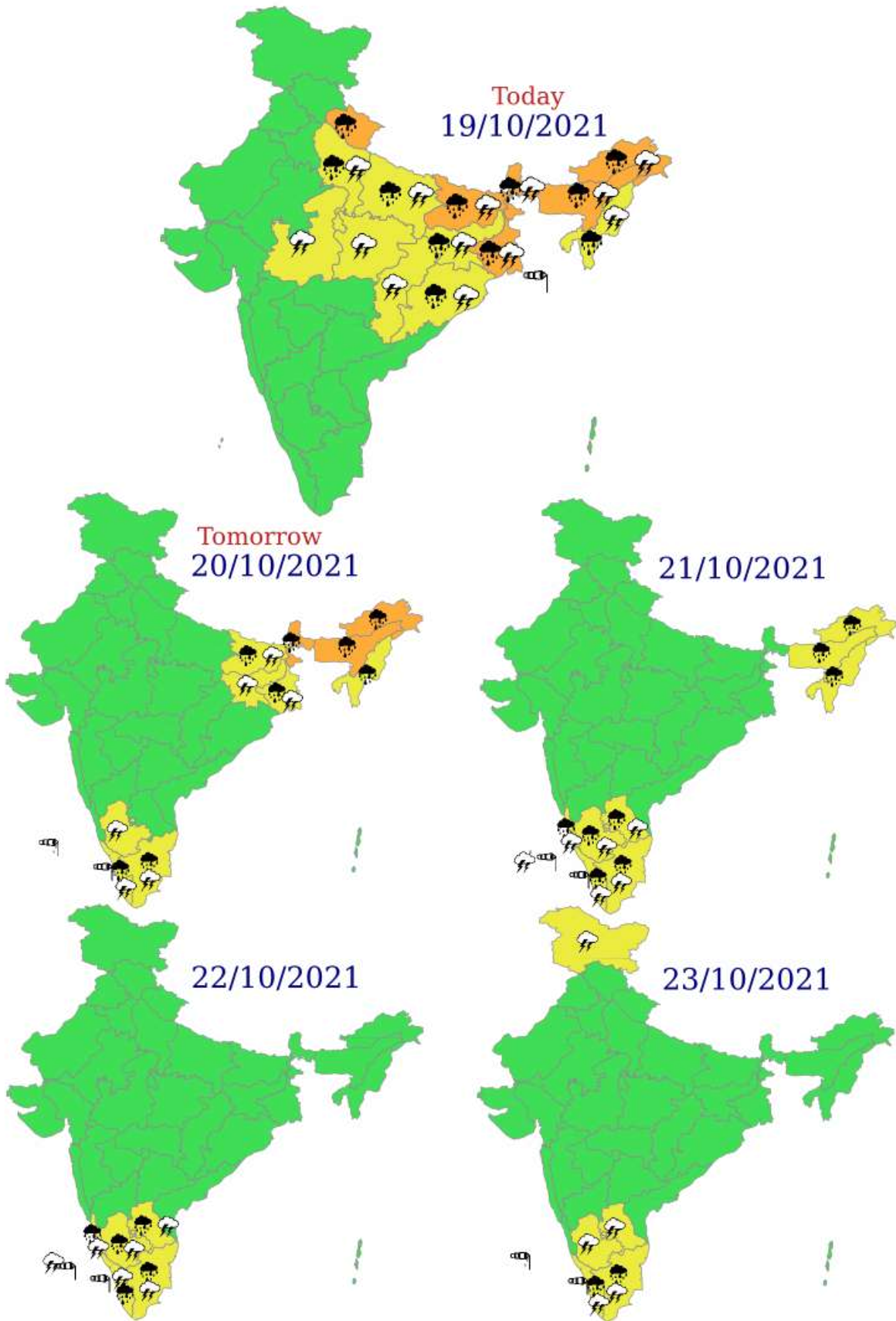
♦ **Squally weather** (wind speed reaching 40-50 kmph) likely over Southeast Arabian Sea along & off Kerala coast and Lakshadweep area. Fishermen are advised not to venture into these areas.

* Red color warning does not mean "Red Alert" Red color 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

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EXPECTED IMPACT & ACTION SUGGESTED due to

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(i) Extremely heavy falls over Sub-Himalayan West Bengal on 19th October, 2021.

(ii) Very Heavy Rainfall over Uttarakhand, Gangetic West Bengal and Bihar on 19th; Sub-Himalayan West Bengal on 20th, Arunachal Pradesh, Assam & Meghalaya on 19th & 20th October, 2021.

A. Impact Expected

- Localized Flooding of roads, inundation and 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 due to water logging in roads leading to increased travel time.
- Minor damage to kutcha roads.
- Possibilities of damage to vulnerable structure.
- Localized Mudslides/Landslides.
- Damage to horticulture and standing crops in some areas due to inundation.
- It may lead to riverine flooding in some river catchments (for riverine flooding please visit Web page of CWC)

B. Action Suggested

- 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.

Flash Flood Guidance

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Persistent Flash Flood Threat (PFFT)
till 1130 IST of 19.10.2021:

Moderate to High threat over few watersheds and neighborhood of Tehri Garhwal, Pauri Garhwal, Rudraprayag, Chamoli, Bagehwar, Almora, Nanital, Pithoragarh, Champawat and Udham Singh Nagar districts of Uttarakhand subdivision in next 06 hours.

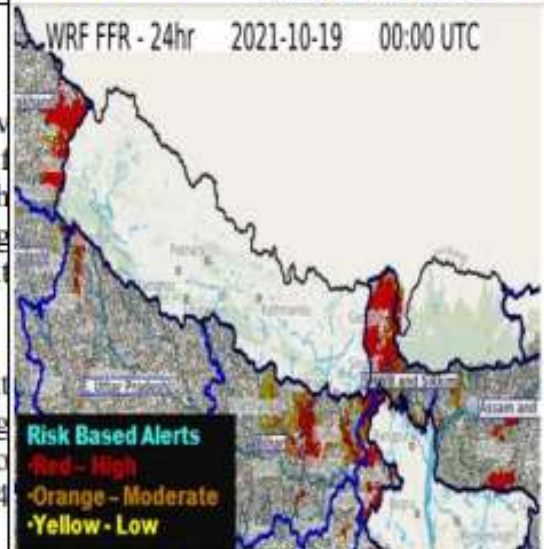
Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as depicted in map due to expected rainfall occurrence in next 06 hours.



24 hours Outlook for the Flash Flood Risk (FFR) till 0530 IST of 20.10.2021:

Moderate to High Risk over few watersheds and neighborhood of Southeastern part of Uttarakhand, North of Bihar and SHWB & Sikkim adjoining Assam & Meghalaya subdivision in next 24 hours.

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



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LEGENDS

WARNING

WARNING (TAKE ACTION)
ALERT (BE PREPARED)
WATCH (BE UPDATED)
NO WARNING (NO ACTION)

Probabilistic Forecast

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



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°C to 6.4°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°C

Warm Night: When minimum temperature departure 4.5°C to 6.4°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°C to -6.4°C .
Severe Cold Wave: Minimum Temperature Departure from normal $\geq -6.5^\circ\text{C}$

(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 $\leq -4.5^\circ\text{C}$ or 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°C to -6.4°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 Storm: Wind speed > 220 kmph (> 119 knots)

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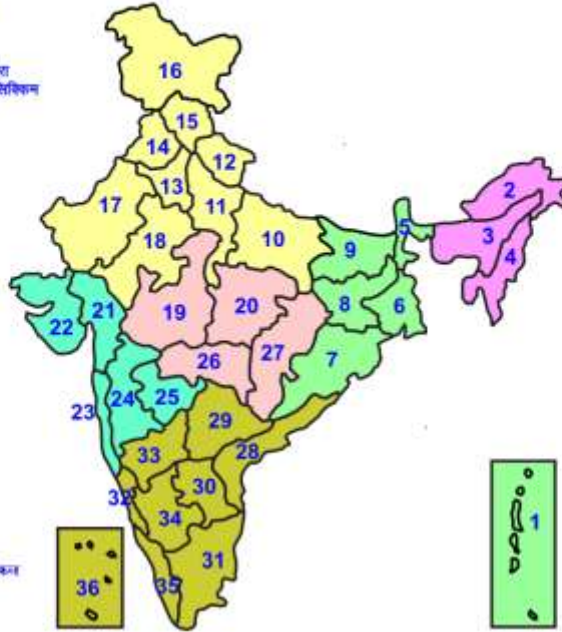
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LEGENDS

- 1 अंडमान और निकोबार द्वीप समूह
- 2 अरुणाचल प्रदेश
- 3 असम और मेघालय
- 4 नागालैंड, मणिपुर, मिजोरम और त्रिपुरा
- 5 उप हिमालय पश्चिम बंगाल एंव सिक्किम
- 6 पश्चिम बंगाल
- 7 ओडिशा
- 8 झारखंड
- 9 बिहार
- 10 पूर्वी उत्तर प्रदेश
- 11 पश्चिम उत्तर प्रदेश
- 12 उत्तराखंड
- 13 हरियाणा, चंडीगढ़ एंव दिल्ली
- 14 पंजाब
- 15 हिमाचल प्रदेश
- 16 जम्मू एंव कश्मीर एंव लद्दाख
- 17 पश्चिम राजस्थान
- 18 जम्मू एंव कश्मीर एंव लद्दाख
- 19 पश्चिम राजस्थान
- 20 पूर्वी मध्य प्रदेश
- 21 गुजरात
- 22 सागराश्रम
- 23 कर्नाटक
- 24 मध्य प्रदेश
- 25 मध्य प्रदेश
- 26 मध्य प्रदेश
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- 34 मध्य प्रदेश
- 35 मध्य प्रदेश
- 36 मध्य प्रदेश



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. Orissa
8. Jharkhand
9. Bihar
10. East Uttar Pradesh
11. West Uttar Pradesh
12. Uttarakhand
13. Haryana, Chd & 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. Vidharbha
27. Chhattisgarh
28. Coastal Andhra Pradesh & Yaram
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)

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	Heavy Rain		Heavy Snow		Thunderstorm		Dust Storm
	Strong Winds		Visibility		Cyclone		Squall/ Hail
	Frost		Cold Wave		Heat Wave		Sea State

Kindly download **MAUSAM** APP for location specific forecast & warning, **MEGHDOOT** APP for Agromet advisory and **DAMINI** APP for Lightning Warning & visit state MC/RMC websites for district wise warning.

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