



Saturday 18 March 2023

MORNING

Time of Issue: 0800 hours IST

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features

Weather Forecast and Warnings:

A Western Disturbance as a trough runs along Long. 72°E to the north of Lat.25°N in middle tropospheric levels. A cyclonic circulation over south Rajasthan & adjoining north Gujarat and another over northeast Rajasthan in lower tropospheric levels. A trough/wind discontinuity runs from Tamilnadu to north Konkan in lower tropospheric levels. Under the influence of above favourable conditions, following weather is expected;

◆ **Northwest India:** Scattered to fairly widespread light/moderate rainfall with thunderstorm, lightning & gusty winds likely over Western Himalayan Region and Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh & Rajasthan on 18th-20th March, 2023. Isolated hailstorm likely over Himachal Pradesh & Uttarakhand during next 3 days.

◆ **West & Central India:** Scattered to fairly widespread light/moderate rainfall with thunderstorm, lightning & gusty winds likely over Gujarat, Maharashtra, Madhya Pradesh, Vidarbha, Chhattisgarh during 18th-19th March, 2023. Isolated hailstorm also likely over East Madhya Pradesh, Vidarbha and Chhattisgarh on 18th March, 2023.

◆ **South Peninsular India:** Scattered to fairly widespread light/moderate rainfall with thunderstorm, lightning & gusty winds likely over north interior Tamil Nadu, Andhra Pradesh, Telangana, Karnataka during 18th-19th March, 2023. Isolated heavy rainfall very likely over Coastal Andhra Pradesh during 18th-19th; Telangana on 18th March, 2023.

◆ **East & Northeast India:** Fairly widespread to widespread light/moderate rainfall activity with thunderstorm, lightning & gusty winds likely over East and Northeast India during 18th-21st March, 2023. Isolated hailstorm also likely over Bihar & Odisha on 18th March, 2023. Isolated heavy rainfall very likely over Arunachal Pradesh, Assam & Meghalaya on 19th & 20th and over Tripura on 20th March, 2023.

Main Weather Observations

◆ **Rainfall/thundershowers observed** (from 0830 hours IST to 1730 hours IST of yesterday): **at many places over Himachal Pradesh; at a few places over Arunachal Pradesh, Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Uttarakhand and East Rajasthan and at isolated places over Assam & Meghalaya, West Bengal & Sikkim, Bihar, Jharkhand, Odisha, West Rajasthan, Madhya Pradesh, Marathwada, Gujarat State, Telangana, Rayalaseema, Coastal Andhra Pradesh & Yanam and Tamilnadu, Puducherry & Karaikal.**

◆ **Significant rainfall recorded**(from 0830 hours IST to 1730 hours IST of yesterday)(in cm): **Assam & Meghalaya:** Silchar -1; **Gujarat Region:** Baroda -1; **West Madhya Pradesh:** Ratlam -1; **Coastal Andhra Pradesh:** Narsapur -1; **Tamilnadu:** Chennai & Kodaikanal -5; Vidhagmandalam, Valprai and Tiruttani -1 each.

◆ **Thunderstorm observed** (from 0830 of yesterday to 0530 hours IST of today): at isolated places over Uttarakhand, Rajasthan, Madhya Pradesh, Gangetic West Bengal, Saurashtra & Kutch, Telangana, Rayalaseema, Madhya Maharashtra, Andhra Pradesh and Tamilnadu, Puducherry & Karaikal.

◆ **Minimum Temperature Departures (as on 17-03-2023):** Minimum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at many places over East Uttar Pradesh; at a few places over Bihar; at isolated places over Punjab, Haryana, Chandigarh & Delhi and East Madhya Pradesh; **above normal (1.6°C to 3.0°C)** at many places over Gujarat Region and Andaman & Nicobar Islands; at a few places over Himachal Pradesh, West Rajasthan and Tamilnadu, Puducherry & Karaikal and at isolated places over East Rajasthan, West Madhya Pradesh and Saurashtra & Kutch. They were **appreciably below normal (-3.1°C to -5.0°C)** at a few places over Gangetic West Bengal; **below normal (-1.6°C to -3.0°C)** at many places over North Interior Karnataka; at a few places over Telangana and Coastal Andhra Pradesh & Yanam and at isolated places over Vidarbha, Marathwada, Rayalaseema, Odisha and Assam & Meghalaya and **near normal** over rest parts of the country. **Yesterday, the lowest minimum temperature of 13.4°C** was reported at **Aurangabad (Marathwada)** over plains of the country.

◆ **Maximum Temperature Departures (as on 17-03-2023):** Maximum temperatures were **appreciably above normal (3.1°C to 5.1°C)** at isolated places over Konkan & Goa; **above normal (1.6°C to 3.0°C)** at many places over Coastal Karnataka; a few places over Punjab and Kerala & Mahe and at isolated places over Tamilnadu, Puducherry & Karaikal; They were **markedly below normal (-5.1°C or less)** at most places over Telangana; at many places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, East Uttar Pradesh, Gangetic West Bengal, Marathwada and Coastal Andhra Pradesh; at a few places over Odisha, West Rajasthan, West Madhya Pradesh and Rayalaseema; at isolated places over Madhya Maharashtra; **appreciably below normal (-3.1°C to -5.1°C)** at many places over Vidarbha and North Interior Karnataka; at a few places over Himachal Pradesh, Punjab, East Rajasthan and Chhattisgarh and at isolated places over East Madhya Pradesh and Gujarat State; **below normal (-1.6°C to -3.0°C)** at many places over West Uttar Pradesh, Haryana, Chandigarh & Delhi; at a few places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura and near normal over rest parts of the country. **Yesterday, the highest maximum temperature of 37.5°C** was reported at **K. Paramathy (Tamilnadu)**.

* Red color warning does not mean "Red Alert" Red color warning means "Take Action".

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(Circle as the National office 4870)

Meteorological Analysis (Based on 0530 hours IST)

- ◆ The **Western Disturbance** as a trough in middle & upper tropospheric levels with its axis 5.8 km above mean sea level now runs roughly along Long. 72°E to the north of Lat. 25°N.
- ◆ The induced **cyclonic circulation** over southwest Rajasthan & adjoining Kutch now lies over south Rajasthan & adjoining north Gujarat and extends upto 1.5 km above mean sea level.
- ◆ The **cyclonic circulation** over northeast Rajasthan at 0.9 km above mean sea level persists.
- ◆ The **trough** from Northeast Arabian sea to cyclonic circulation over northeast Rajasthan across Gujarat at 0.9 km above mean level persists.
- ◆ The **east-west trough** now runs from cyclonic circulation over south Rajasthan & adjoining north Gujarat to Bangladesh across Madhya Pradesh, north Chhattisgarh, Jharkhand and Gangetic West Bengal at 1.5 km above mean level.
- ◆ The **trough/wind discontinuity** from Interior Tamilnadu to central Madhya Pradesh across Rayalaseema, Telangana and Vidarbha at 0.9 km above mean sea level persists.
- ◆ The **cyclonic circulation** over east Bangladesh & neighbourhood at 0.9 km above mean sea level persists.
- ◆ A fresh **Western Disturbance** likely to affect Northwest India from 19th March, 2023.

Weather Forecast for next 5 days * upto 0830 hours IST of 23rd March, 2023

- ◆ **Meteorological sub-division wise detailed 5 days temperature forecast is given in Table-1.**
- ◆ **Northwest India:** Gradual fall by 2-4°C in maximum temperatures very likely during next 2 days and rise by 2-4°C thereafter.
- ◆ **East India:** Fall by 2-3°C in maximum temperatures very likely during next 24 hours and no significant change thereafter.
- ◆ **Central India and Gujarat state:** No significant change in maximum temperatures very likely during next 4-5 days.
- ◆ **Maharashtra:** No significant change in maximum temperatures very likely during next 2 days and rise by 3-4°C thereafter.
- ◆ **Rest parts of the Country:** No significant change in Maximum Temperatures very likely during next 4-5 days.

Weather Outlook for subsequent 2 days during 23rd-25th March, 2023

- ◆ Scattered to fairly widespread light/moderate rainfall/thundershowers likely over Northeast India. Isolated to scattered light rainfall/thundershowers likely over most parts of Northwest & south Peninsular India.
- ◆ Another Western Disturbance likely to affect Northwest India from 22nd March, 2023.

Weather Warning during next 5 days *

18 March (Day 1): ♦ **Heavy rainfall** very likely at isolated places over Coastal Andhra Pradesh & Yanam, Odisha and Telangana.

♦ **Thunderstorm accompanied with lightning, hail & gusty winds** (30-40 kmph) at isolated places over East Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar, Odisha and Telangana; **with lightning & hail** over Himachal Pradesh, Uttarakhand, Marathwada and East Rajasthan; **with lightning & gusty wind (40-50 kmph)** over Jharkhand and Gangetic West Bengal; **with lightning & gusty wind (30-40 kmph)** over Punjab, Haryana, Chandigarh & Delhi, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura and Andhra Pradesh & Yanam; **with lightning** over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Uttar Pradesh, West Rajasthan, West Madhya Pradesh, Arunachal Pradesh, Gujarat state, Madhya Maharashtra, South Interior Karnataka and Tamilnadu, Puducherry & Karaikal.

♦ **Squally weather** (wind speed 40-45 kmph gusting to 55 kmph) very likely along & off Andhra Pradesh coast & adjoining West Central bay of Bengal. Fishermen are advised not to venture into these areas.

19 March (Day 2): ♦ **Heavy to very heavy rainfall** very likely at isolated places over Assam & Meghalaya; **Heavy rainfall** at isolated places over Bihar, West Bengal & Sikkim, Arunachal Pradesh and Coastal Andhra Pradesh & Yanam.

♦ **Thunderstorm accompanied with lightning & hail** at isolated places over Himachal Pradesh, Uttarakhand and Rajasthan; **with lightning & gusty wind (40-50 kmph)** over Gangetic West Bengal; **with lightning & gusty wind (30-40 kmph)** over East Madhya Pradesh, Jharkhand, Sub-Himalayan West Bengal & Sikkim, Coastal Andhra Pradesh & Yanam, Telangana and Rayalaseema; **with lightning** over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, West Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar, Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura, Gujarat state and Tamilnadu, Puducherry & Karaikal.

20 March (Day 3): ♦ **Heavy rainfall** at isolated places very likely over Bihar, Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.

♦ **Thunderstorm accompanied with lightning & hail** at isolated places over Himachal Pradesh, Uttarakhand and Rajasthan; **with lightning & gusty wind (30-40 kmph)** over Jharkhand, Gangetic West Bengal, Coastal Andhra Pradesh & Yanam Rayalaseema; **with lightning** over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar and Tamilnadu, Puducherry & Karaikal.

21 March (Day 4): ♦ **Thunderstorm accompanied with lightning & hail** at isolated places over Uttarakhand; **with lightning & gusty wind (30-40 kmph)** over Gangetic West Bengal; **with lightning** over Himachal Pradesh, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh and Bihar.

22 March (Day 5): ♦ **Thunderstorm accompanied with lightning & hail** at isolated places over Uttarakhand; **with lightning & gusty wind (30-40 kmph)** over Gangetic West Bengal; **with lightning** over Himachal Pradesh, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh and Bihar.

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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(Created by the National Press 1077)



Table-1
5 Day Rainfall Forecast (MORNING)
18-March-2023

Met-Sub-Division	18-Mar Today	19Mar Sun	20Mar Mon	21Mar Tue	22Mar Wed
1. Andaman & Nicobar Islands	ISOL	ISOL	ISOL	ISOL	ISOL
2. Arunachal Pradesh	FWS	WS	WS	WS	WS
3. Assam & Meghalaya	FWS	WS	WS	WS	WS
4. N. M. M. & T.	FWS	WS	WS	WS	WS
5. S.H. West Bengal & Sikkim	FWS	WS	WS	WS	WS
6. Gangetic West Bengal	FWS	WS	WS	FWS	FWS
7. Odisha	FWS	SCT	ISOL	ISOL	ISOL
8. Jharkhand	FWS	FWS	FWS	SCT	SCT
9. Bihar	FWS	WS	WS	SCT	SCT
10. East Uttar Pradesh	SCT	FWS	WS	FWS	FWS
11. West Uttar Pradesh	FWS	FWS	WS	FWS	FWS
12. Uttarakhand	FWS	FWS	WS	FWS	FWS
13. Haryana, Chd & Delhi	FWS	FWS	FWS	ISOL	ISOL
14. Punjab	FWS	FWS	FWS	ISOL	ISOL
15. Himachal Pradesh	FWS	FWS	FWS	SCT	SCT
16. J & K and Ladakh	SCT	SCT	SCT	SCT	SCT
17. West Rajsthan	ISOL	SCT	SCT	ISOL	ISOL
18. East Rajasthan	ISOL	SCT	SCT	ISOL	ISOL
19. West Madhya Pradesh	SCT	SCT	ISOL	ISOL	ISOL
20. East Madhya Pradesh	SCT	SCT	SCT	ISOL	ISOL
21. Gujarat Region	ISOL	ISOL	ISOL	ISOL	ISOL
22. Saurashtra & Kutch	ISOL	ISOL	ISOL	ISOL	ISOL
23. Konkan & Goa	ISOL	ISOL	DRY	DRY	DRY
24. Madhya Maharashtra	ISOL	ISOL	ISOL	DRY	DRY
25. Marathawada	SCT	ISOL	ISOL	DRY	DRY
26. Vidharbha	FWS	SCT	ISOL	ISOL	ISOL
27. Chhattisgarh	FWS	FWS	SCT	ISOL	ISOL
28. Coastal A. P. & Yanam	WS	FWS	FWS	ISOL	ISOL
29. Telangana	WS	FWS	ISOL	ISOL	ISOL
30. Rayalaseema	FWS	SCT	ISOL	DRY	DRY
31. T.N.,Puducherry & Karaikal	SCT	SCT	SCT	ISOL	ISOL
32. Coastal Karnataka	DRY	DRY	DRY	DRY	DRY
33. North Interior Karnataka	ISOL	DRY	DRY	DRY	DRY
34. South Interior Karnataka	ISOL	ISOL	ISOL	DRY	DRY
35. Kerala & Mahe	ISOL	ISOL	ISOL	ISOL	ISOL
36. Lakshadweep	DRY	SCT	SCT	DRY	DRY

% Station Reporting Rainfall

% 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)
No Rain	Dry		

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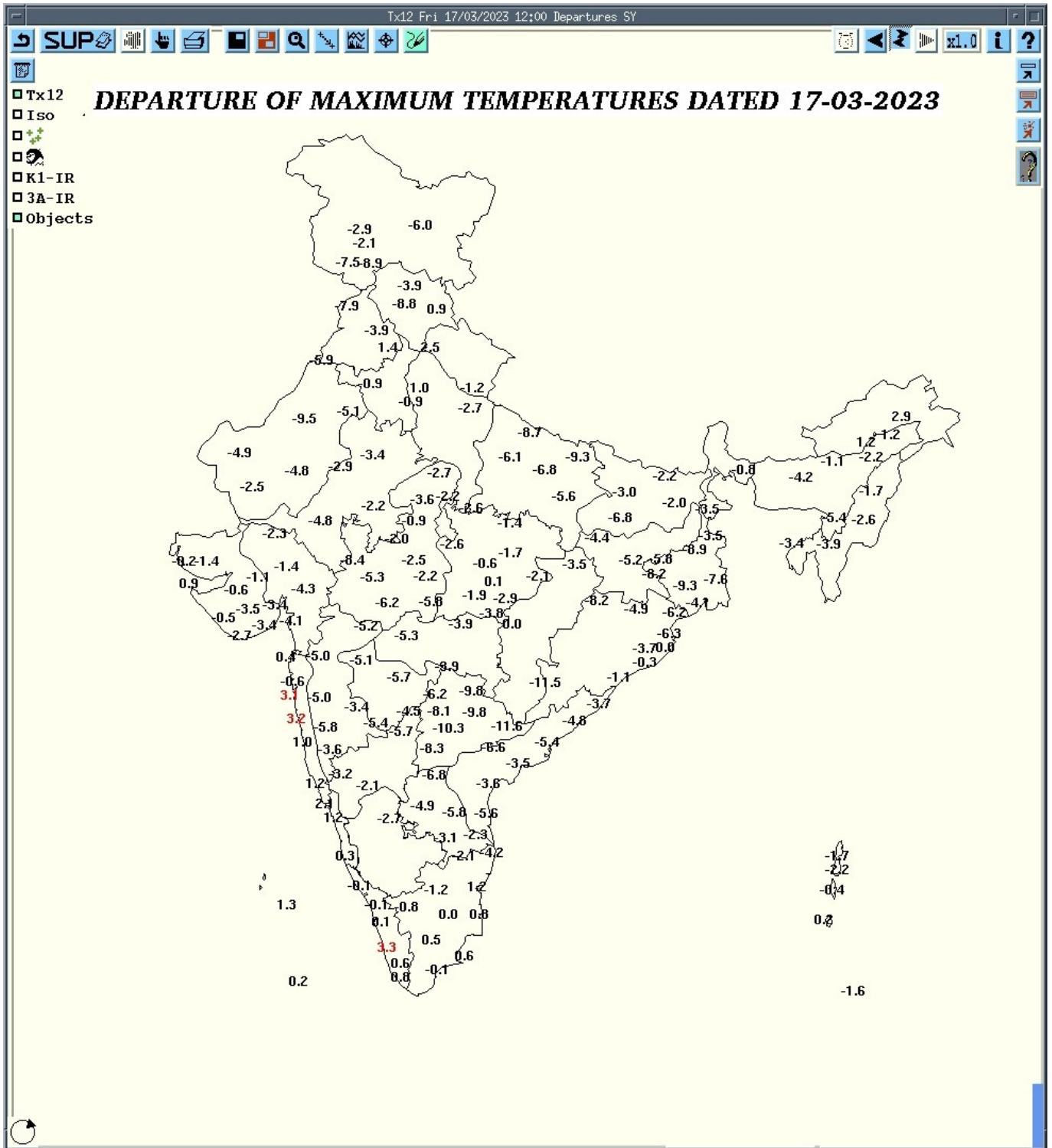
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Fig. 4: Departure from Normal of Maximum Temperatures



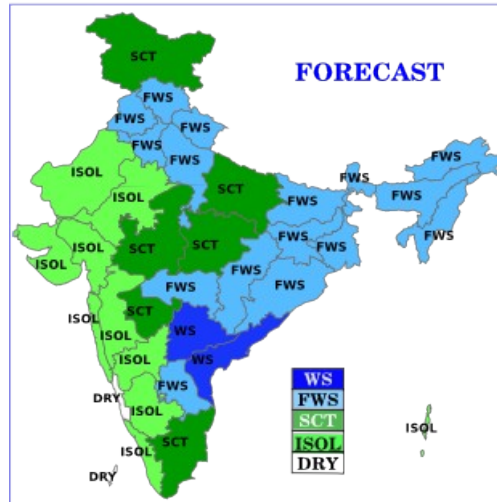
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(As per the Met Act 1975)

Saturday 18 March 2023



18 March (Day 1): ♦ **Heavy rainfall** very likely at isolated places over Coastal Andhra Pradesh & Yanam, Odisha and Telangana.

♦ **Thunderstorm accompanied with lightning, hail & gusty winds** (30-40 kmph) at isolated places over East Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar, Odisha and Telangana; **with lightning & hail** over Himachal Pradesh, Uttarakhand, Marathwada and East Rajasthan; **with lightning & gusty wind (40-50 kmph)** over Jharkhand and Gangetic West Bengal; **with lightning & gusty wind (30-40 kmph)** over Punjab, Haryana, Chandigarh & Delhi, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura and Andhra Pradesh & Yanam; **with lightning** over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Uttar Pradesh, West Rajasthan, West Madhya Pradesh, Arunachal Pradesh, Gujarat state, Madhya Maharashtra, South Interior Karnataka and Tamilnadu, Puducherry & Karaikal.

♦ **Squally weather** (wind speed 40-45 kmph gusting to 55 kmph) very likely along & off Andhra Pradesh coast & adjoining West Central bay of Bengal. Fishermen are advised not to venture into these areas.

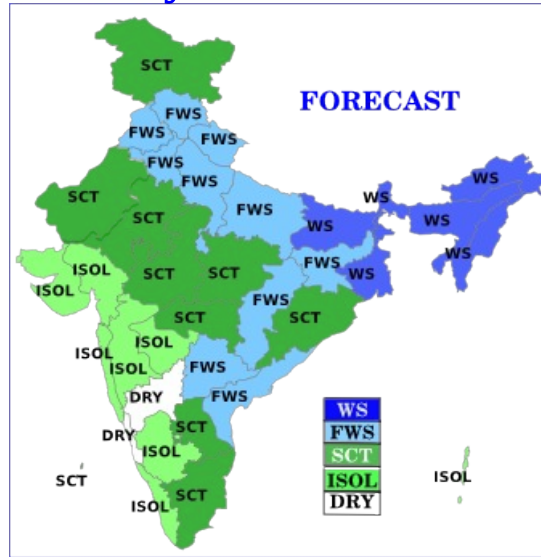
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Sunday 19 March 2023



19 March (Day 2): ♦ **Heavy to very heavy rainfall** very likely at isolated places over Assam & Meghalaya; **Heavy rainfall** at isolated places over Bihar, West Bengal & Sikkim, Arunachal Pradesh and Coastal Andhra Pradesh & Yanam.

♦ **Thunderstorm accompanied with lightning & hail** at isolated places over Himachal Pradesh, Uttarakhand and Rajasthan; **with lightning & gusty wind (40-50 kmph)** over Gangetic West Bengal; **with lightning & gusty wind (30-40 kmph)** over East Madhya Pradesh, Jharkhand, Sub-Himalayan West Bengal & Sikkim, Coastal Andhra Pradesh & Yanam, Telangana and Rayalaseema; **with lightning** over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, West Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar, Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura, Gujarat state and Tamilnadu, Puducherry & Karaikal.

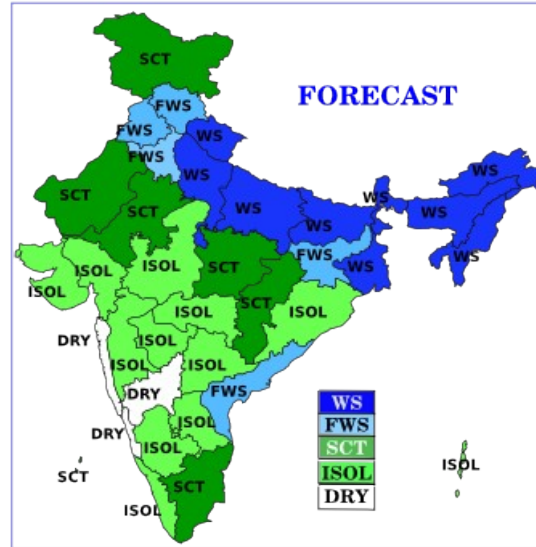
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Monday 20 March 2023



20 March (Day 3): ♦ **Heavy rainfall** at isolated places very likely over Bihar, Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.

♦ **Thunderstorm accompanied with lightning & hail** at isolated places over Himachal Pradesh, Uttarakhand and Rajasthan; **with lightning & gusty wind (30-40 kmph)** over Jharkhand, Gangetic West Bengal, Coastal Andhra Pradesh & Yanam Rayalaseema; **with lightning** over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar and Tamilnadu, Puducherry & Karaikal.

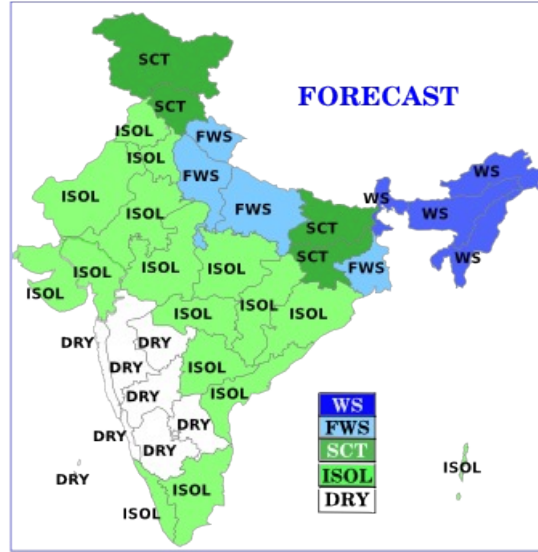
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Tuesday 21 March 2023



21 March (Day 4): ♦ **Thunderstorm accompanied with lightning & hail** at isolated places over Uttarakhand; **with lightning & gusty wind (30-40 kmph)** over Gangetic West Bengal; **with lightning** over Himachal Pradesh, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh and Bihar.

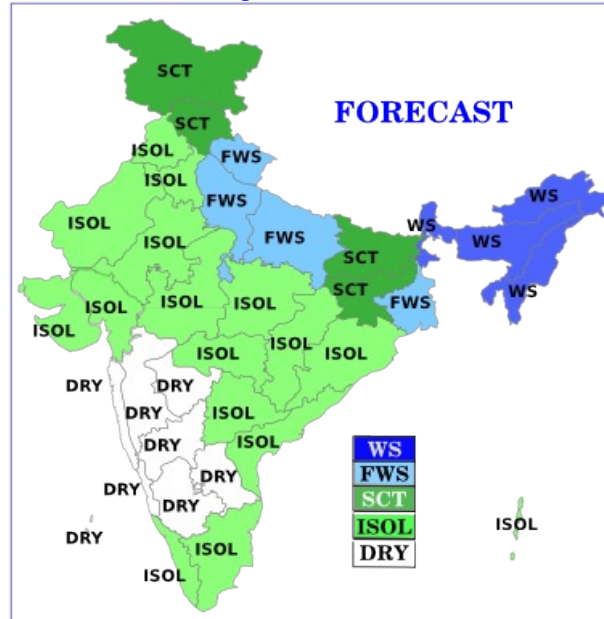
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Wednesday 22 March 2023



22 March (Day 5): ♦ **Thunderstorm** accompanied with **lightning & hail** at isolated places over Uttarakhand; **with lightning & gusty wind (30-40 kmph)** over Gangetic West Bengal; **with lightning** over Himachal Pradesh, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh and Bihar.

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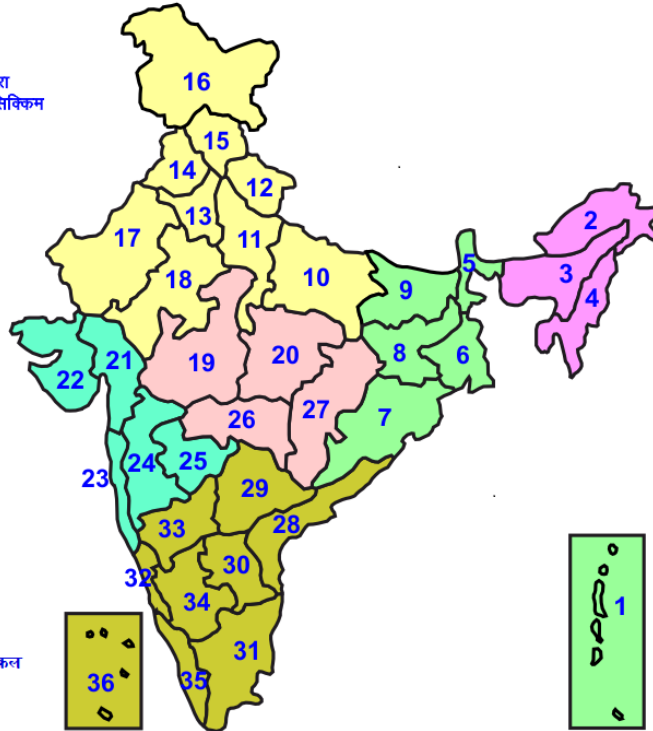
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LEGENDS

- 1 अंडमान और निकोबार द्वीप समूह
- 2 अरुणाचल प्रदेश
- 3 असम और मेघालय
- 4 नागालैंड मनीपुर मीजोरम और त्रिपुरा
- 5 उप हिमालय पश्चिम बंगाल एवं सिक्किम
- 6 पश्चिम गंगोय बंगाल
- 7 ओडिशा
- 8 झारखंड
- 9 बिहार
- 10 पूर्वी उत्तर प्रदेश
- 11 पश्चिम उत्तर प्रदेश
- 12 उत्तराखंड
- 13 हरियाणा चंडिगढ़ एवं दिल्ली
- 14 पंजाब
- 15 हिमाचल प्रदेश
- 16 जम्मू एवं कश्मीर एवं लद्दाख
- 17 पश्चिम राजस्थान
- 18 पूर्वी राजस्थान
- 19 पश्चिम मध्य प्रदेश
- 20 पूर्वी मध्य प्रदेश
- 21 गुजरात क्षेत्र
- 22 सौराष्ट्र एवं कच्छ
- 23 कोंकण एवं गोवा
- 24 मध्य महाराष्ट्र
- 25 मराठावाडा
- 26 विदर्भ
- 27 छत्तीसगढ़
- 28 तटीय आंध्र प्रदेश एवं यनम
- 29 तेलंगाना
- 30 रायलसीमा
- 31 तमिलनाडु, पुदुचेरी एवं कराईकल
- 32 तटिय कर्नाटक
- 33 आंतरिक उत्तरी कर्नाटक
- 34 आंतरिक दक्षिणी कर्नाटक
- 35 केरल एवं 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. 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. Marathawada
26. Vidharbha
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)

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



Heavy Rain



Heavy Snow



Thunderstorm



Dust Storm



Strong Winds



Visibility



Cyclone



Squall/ Hail



Frost



Cold Wave



Heat Wave



Sea State

* 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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(Copies to the Media upto 1070)

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 $\leq -6.5^{\circ}\text{C}$

(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°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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