



Pakistan's Monthly Climate Summary NOVEMBER, 2021

In brief

- November is the month when the dry continental winds predominantly setup across Pakistan.
- No significant rainfall event occurred during the whole month.
- November 2021 rainfall was 94.4% below average for Pakistan as a whole and stood sixth-driest November on record.
- The worst deficient rainfall hit were the provinces of Balochistan and Sindh, which did not receive any rainfall during the whole month and both ranked as first-driest November on record.
- AJK (-94.1%), GB (-99.5 %), KP (-90.8 %) & Punjab (-92.0 %) all experienced deficient rainfall and stood among tenth driest month on record except Punjab which stood twelfth.
- The wettest day of the month in the country was 1st November, when Dir (KP) recorded 24.0 mm of rain which also proved to be the wettest place with highest monthly total.
- The national mean monthly temperature of November 2021 for Pakistan as a whole was 18.06 °C, being 0.42 °C warmer than monthly-average.
- The mean maximum (day) temperature at country-level was 26.35 °C, being 0.43 °C lower than average of 25.93 °C.
- The night (minimum) temperature was 9.76 °C, being 0.43 °C warmer than country-average of 9.33 °C.
- The hottest day of the month was at Mithi (Sindh) when it recorded 37.5 °C temperature on 9th November.
- The coldest temperature of -7.3 °C of the month were recorded at Skardu (GB) on 13th November 2021.
- The negative Indian Ocean Dipole (IOD) event persisted in the month.
- La Niña established in the tropical equatorial Pacific during November 2021.

National weather extremes during November 2021

Hottest day	37.5 °C	at Mithi (Sindh) on the 9 th
Coldest day	5.0 °C	at Kalam (KP) on the 5 th
Coldest night	-7.3 °C	at Skardu (GB) on the 13 th
Warmest night	22.5 °C	at Mirpurkhas (Sindh) on the 1 st & 2 nd
Wettest day	24.0 mm	at Dir (KP) on the 5 th
Wettest month	24.0 mm	at Dir (KP)

Synoptic Summary

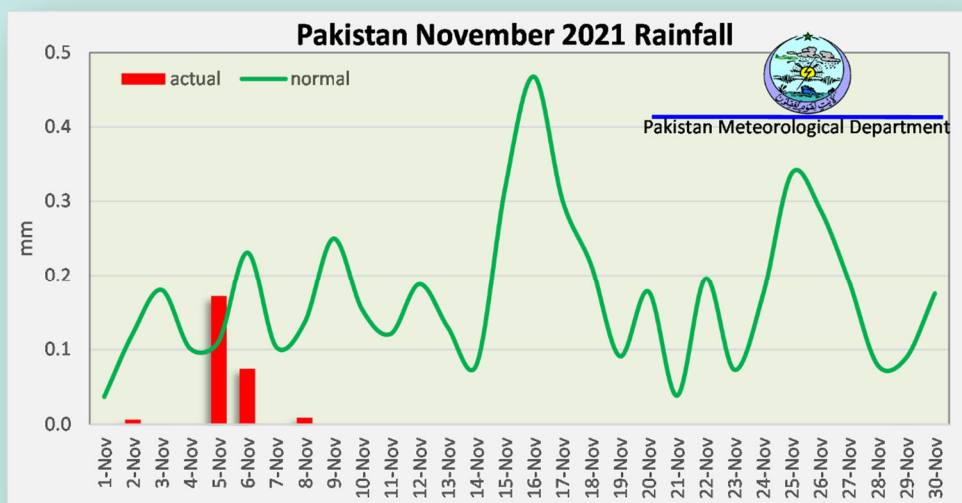
November is the month when the dry continental winds predominantly setup across Pakistan. To start with, a westerly trough was spotted over upper Khyber Pakhtunkhwa (KP) and adjoining Gilgit-Baltistan (GB) which persisted through the following 3 days. Whereas, dry continental air prevailed over rest of the country. On 5th November, a low-pressure area formed over upper KP and North Balochistan which reduced to a trough the next day. This low-trough see-saw pattern over KP & GB prevailed till 9 Nov. From there on, the dry continental air has been a dominant synoptic feature across whole of Pakistan till the month's end.

November, 2021 area-weighted rainfall

	Rank (of 61)	Norma l (mm)	Average (mm)	Departure (percent)	Comment
Pakistan	6	5.2	0.3	-94.4	6 th Driest year (1987 was record driest)
Azad Jammu & Kashmir	8	21.7	1.3	-94.1	8 th Driest years
Balochistan	1	2.6	0.0	-100.0	1 st Driest year (equaling other 16 driest years)
Gilgit Baltistan	6	5.1	0.03	-99.5	6 th Driest year
Khyber Pakhtunkhwa	6	17.6	1.6	-90.8	7 th Driest year
Punjab	12	4.2	0.3	-92.0	12 th Driest year
Sindh	1	1.6	0.0	-100.0	1 st Driest year (equaling other 29 driest years)

Rank ranges from 1 (lowest) to 61 (highest)

Rainfall – Exceptionally below average over the country

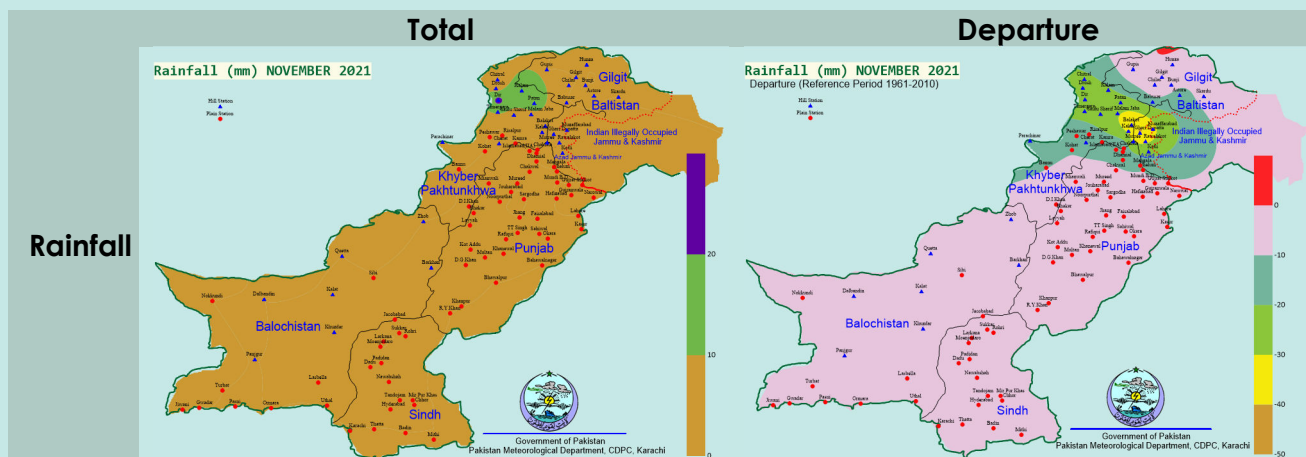


During November 2021, no significant rainfall occurred during. November 2021 rainfall was 94.4% below average for Pakistan as a whole and stood sixth-driest November on record for the country during 1961-2021. Climatologically, the month of November

happens to be the driest month of the year across Pakistan and November 2021 was one of the extremely driest month on record with only 0.3 mm rain (area weighted) against its normal 5.2 mm. On average, the November rainfall contribution is of the order of 20% and 2% to the post-monsoon (OND) and annual rainfall respectively.

On regional scale, all the regions/provinces witnessed extremely driest condition. The worst deficient rainfall hit were the provinces of Balochistan and Sindh, which did not receive any rainfall in whole month and both ranked as first-driest November on record equalling the previous sixteen and twenty-nine driest years on record respectively. Dry conditions on other regions were not very different. AJK (-94.1%), GB (-99.5 %), KP (-90.8 %) & Punjab (-92.0 %) all experienced among tenth driest month on record except Punjab which stood twelfth driest month on record. The wettest day of the month in the country was 1st November, when Dir (KP) recorded 24.0 mm of rain with same amount and place being the wettest monthly total.

November 2021 rainfall maps



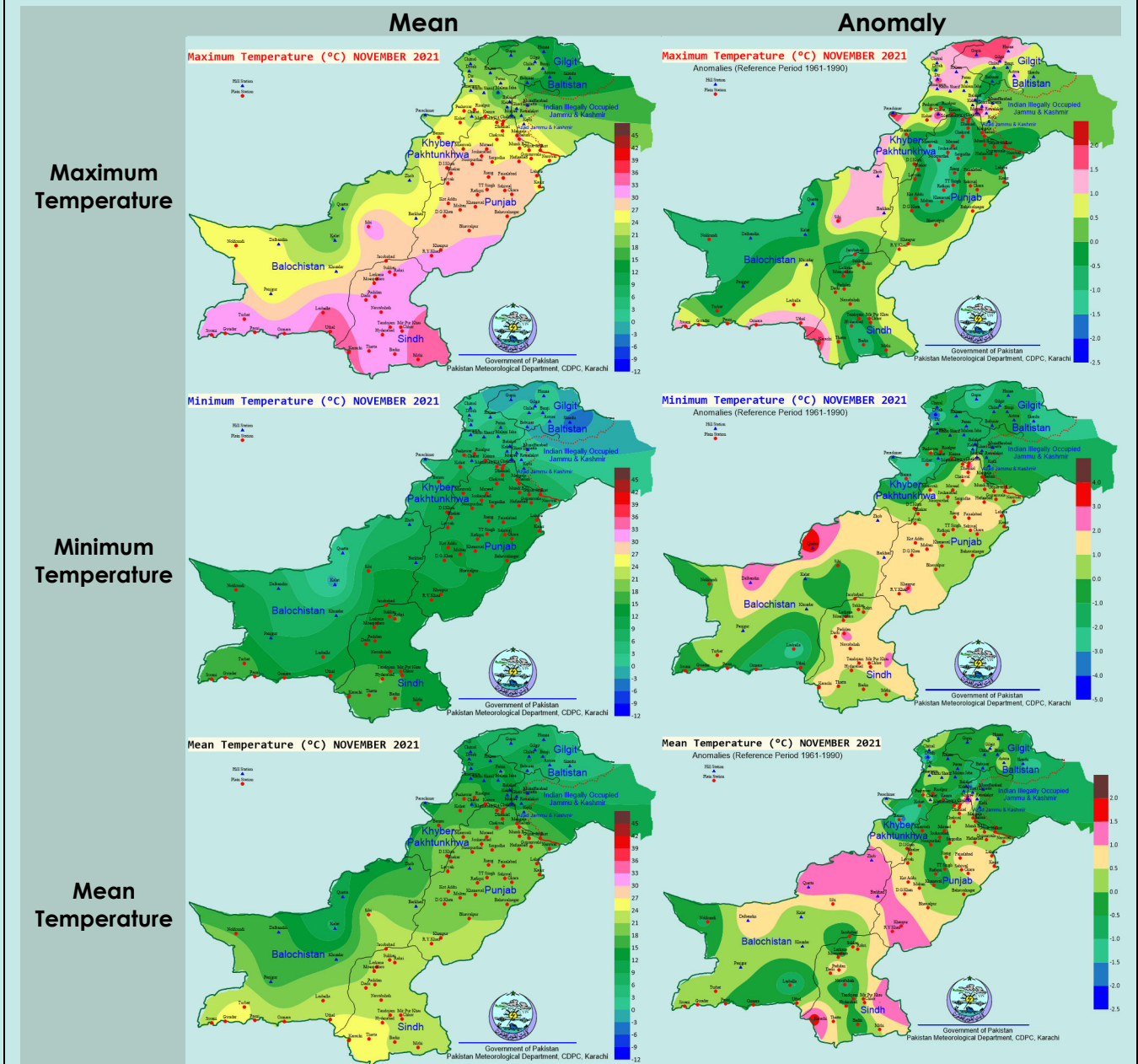
Temperatures – Warmer than average temperature over the Country

The national mean monthly temperature of November 2021 for Pakistan as a whole was 18.06 °C, being 0.42 °C warmer than monthly-average. On regional scale, Balochistan (+0.48 °C), Punjab (+0.56 °C) and Sindh (+0.59 °C) recorded warmer than average while AJK (-0.25 °C), KP (-0.04 °C) and GB (-0.52 °C) recorded negative anomaly for the month.

The mean maximum (day) temperature at country-level was 26.35 °C, being 0.43 °C lower than average of 25.93 °C. The night (minimum) temperature was 9.76 °C, being 0.43 °C warmer than country-average of 9.33 °C. The mean temperature anomalies of November were ±1.5 °C over most parts of the country.

Mean Maximum temperatures' anomalies were ± 1 °C over most parts of the country except extreme southern and northern parts of country where it was around $+2.0$ °C. The mean minimum temperature anomalies for the month were ± 2.0 °C over most parts of country with anomalies over parts of western Balochistan being considerably higher. The hottest day of the month was at Mithi (Sindh) when it recorded 37.5 °C temperature on 9th November. The coldest temperature of -7.3 °C of the month were recorded at Skardu (GB) on 13th November 2021.

November 2021 Temperature maps



November 2021 Monthly Averages & Normals

Station	Pressure (mb)		Temperature (°C)			Vapour (mb)	Precipitation	
	Station Level	Sea Level	Mean	Maximum	Minimum	Pressure	Total (mm)	Days
Drosh	856.5	1527.2	11.3	19.3	1.3	4.4	3.6	1
	857.8	1540.5	12.0	19.6	6.5	4.7	26.8	3.8
Peshawar	977.4	1015.7	16.2	26.2	7.7	11.9	0.0	0
	974.1	1015.8	16.5	26.2	9.5	11.3	11.4	2.3
Parachinar	830.2	1527.1	12.3	20.3	3.3	4.9	1.0	1
	830.5	1531.4	11.7	18.5	3.8	5.1	16.5	3.3
Rawalpindi	957.3	1015.8	16.4	24.5	10.0	9.6	0.0	0
	957.2	1015.8	15.9	25.9	7.9	10.6	15.6	2.6
Sargodha	990.3	1011.7	19.6	27.7	12.5	14.8	0.0	0
	993.5	1015.3	18.7	27.9	10.6	13.5	6.7	1.4
Jhelum	986.6	1013.9	17.4	27.6	9.7	13.4	0.0	0
	987.8	1015.0	17.7	27.7	10.4	12.9	10.0	1.7
Sialkot	984.7	1014.4	16.9	25.6	10.2	14.2	0.0	0
	985.7	1015.3	17.2	26.1	9.9	13.5	9.5	1.6
Zhob	860.9	1512.3	15.4	22.5	7.7	6.6	0.0	0
	860.9	1511.8	14.4	22.4	6.0	5.9	3.5	0.3
D.I.Khan	993.7	1013.7	19.7	28.1	12.1	13.8	0.0	0
	986.6	1014.7	18.8	28.0	10.7	13.1	2.2	0.8
Lahore	989.2	1014.1	19.7	27.2	12.9	13.3	0.0	0
	990.0	1014.9	19.4	27.7	12.4	13.6	6.5	1.8
Quetta	845.6	1546.2	10.7	18.4	2.7	3.7	0.0	0
	844.6	1534.9	10.3	19.7	0.1	5.1	4.5	1.3
Multan	999.3	1013.6	20.1	27.6	12.9	13.8	0.0	0
	1000.8	1015.3	19.4	28.8	11.4	13.9	2.3	0.8
Barkhan	892.3	1511.0	18.2	25.4	11.4	5.1	0.0	0
	893.6	1520.8	17.3	24.3	10.5	6.9	5.0	0.4
Nokkundi	937.8	1014.7	18.0	26.0	9.7	3.5	0.0	0
	938.7	1015.4	19.0	27.3	10.3	7.4	0.3	0.3
Dalbandin	922.0	1531.2	16.0	24.7	----	5.4	0.0	0
	921.6	1530.9	16.6	24.8	5.1	5.5	0.4	0.3
Jacobabad	1007.2	1013.6	22.5	28.9	14.3	14.9	0.0	0
	1008.0	1014.6	22.1	30.2	14.1	13.4	1.3	0.1
Khanpur	1002.8	1013.1	20.6	29.9	12.2	15.0	0.0	0
	1004.1	1014.4	20.1	29.7	10.5	13.2	0.5	0.3
Panjgur	906.3	1521.2	17.3	24.5	9.2	6.4	0.0	0
	907.7	1529.5	17.6	25.1	9.0	4.3	1.9	0.3
Khuzdar	879.9	1525.6	17.7	25.6	8.8	5.9	0.0	0
	879.4	1511.0	17.4	25.0	8.3	3.2	5.1	0.3
Nawabshah	1010.1	1013.5	22.4	31.8	13.9	14.5	0.0	0
	1011.1	1015.0	21.7	32.0	12.3	15.0	1.5	0.1
Jiwani	1006.9	1013.4	25.3	30.9	17.1	17.9	0.0	0
	1009.2	1014.9	24.0	29.7	17.9	18.2	3.9	0.4
Pasni	1012.9	1013.5	24.3	31.0	15.6	13.6	0.0	0
	1013.4	1013.9	23.8	31.0	16.0	17.4	1.0	0.1
Hyderabad	1007.5	1012.5	24.8	31.1	18.2	13.6	0.0	0
	1009.9	1014.3	24.5	31.8	17.4	14.1	2.3	0.2
Chhor	1011.7	1012.4	23.7	33.9	13.9	14.6	0.0	0
	1013.0	1013.7	22.7	33.5	11.8	12.9	3.6	0.3
Karachi	1010.0	1012.7	25.6	33.9	17.6	12.6	0.0	0
	1012.1	1014.4	24.3	32.2	16.3	14.8	0.9	0.2

Note: The first row against each station contains the actual values while second row for normal values of 1971-2000.

November 2021 extreme values

STATION	Mean Temperature (°C)				Temperature (°C)				Highest (mm & knots)			
	Highest	Date	Lowest	Date	Highest	Date	Lowest	Date	Rain	Date	Wind Speed	Date
Drosh	13.9	1	8.9	18	21.8	2	0.4	16*	3.6	5	14	6*
Peshawar	19.4	2	13.8	30	30.0	8	5.0	19*	0.0	0	2	1*
Parachinar	15.0	23	9.9	29	24.0	23	1.0	29*	1.0	8	14	28
Rawalpindi	19.3	1	14.4	30	26.8	10*	7.0	22	0.0	0	10	2*
Sargodha	22.9	9	16.8	27	31.0	7*	9.3	23	0.0	0	6	24
Jhelum	20.1	6	15.0	27	30.5	7*	6.7	23	0.0	0	8	2
Sialkot	19.5	1	14.5	26	28.5	7	6.5	23	0.0	0	6	2
Zhob	18.0	5*	12.1	30	25.0	9*	5.0	71	0.0	0	9	26
D.I.Khan	23.0	9	16.5	29	32.0	8*	9.0	23	0.0	0	6	5
Lahore	22.5	2	17.5	27	30.0	9*	10.1	28	0.0	0	8	2*
Quetta	14.5	8	6.4	19*	21.5	5*	-1.5	22	0.0	0	20	14
Multan	23.1	4*	17.1	21	31.1	1*	10.0	30	0.0	0	12	2
Barkhan	21.0	1	15.3	29	28.5	5*	8.0	29*	0.0	0	4	19*
Nokkundi	21.8	4	12.6	19	30.0	4	4.5	19	0.0	0	22	1
Dalbandin	19.8	5	10.8	19	30.0	4*	6.0	3*	0.0	0	8	6*
Jacobabad	27.0	1	19.1	30	35.0	1	11.0	23*	0.0	0	2	6*
Khanpur	24.0	9	17.3	19	34.3	9	8.7	22	0.0	0	6	2*
Panjgur	20.6	5	12.0	19	29.5	4	5.0	20*	0.0	0	20	1
Khuzdar	20.1	2*	14.3	20	28.5	6	3.5	22	0.0	0	4	26
Nawabshah	26.6	1	19.4	20	36.5	1	11.0	23	0.0	0	8	5*
Jiwani	28.6	1	22.8	20	36.0	1	14.0	21*	0.0	0	14	19
Pasni	27.5	1	22.4	20	36.0	1	14.0	14*	0.0	0	18	19
Hyderabad	27.5	1	22.5	22*	35.5	1	14.0	23	0.0	0	10	1*
Chhor	26.9	1	21.0	23	36.7	8	10.0	23	0.0	0	6	15*
Karachi	27.9	3	23.4	20	37.2	1	13.5	23	0.0	0	18	23

* means value occurred multiple times

Note

Monthly Climate Summary is produced by Pakistan Meteorological Department, Climate Data Processing Centre, Karachi to provide the main features of weather events occurred in the country during the month. The summary contains detailed data information of 25 climate stations of Pakistan. The extremes & analysis is based on 110 numbers of stations. The information in the summary is based on real time data and/or electronic reports, therefore, the above results can be considered only preliminary. Climate Summaries are usually published in the first week of each month. Long term average for rainfall is for 1961-2010 (50 years) while normal period for temperature is 1961-1990 (30 years).

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