



Pakistan's Monthly Climate Summary JULY, 2021

Overview

- National rainfall for the month of July 2021 was close to normal (+4%).
- The GB (+86 %), KP (28 %) and Balochistan (22 %) regions had recorded above normal rainfall.
- AJK (-4 %) & Punjab (+1 %) recorded close to normal rainfall.
- Deficient monthly rainfall was observed over Sindh (-47 %).
- The national mean monthly temperature was 0.22 °C warmer than average.
- The mean maximum temperature at country-level was 0.36 °C warmer than average.
- The mean minimum temperature was 25.73 °C, being 0.43 °C warmer than average.
- The country hottest day was 1st July at Dadu with 49.5 °C temperature.
- The Indian Ocean Dipole (IOD) was below the negative IOD threshold.
- El Nino-Southern Oscillation (ENSO) continued to be neutral in July 2021.

National weather extremes during JULY 2021

Hottest day	49.5 °C	at Dadu (Sindh) on the 1 st
Coldest day	14.0 °C	at Babusar (KP) on the 21 st
Coldest night	7.5 °C	at Babusar (KP) on the 22 nd
Warmest night	33.5 °C	at Nokkundi (Balochistan) on the 18 th
Wettest day	193.0 mm	at Sialkot Airport (Punjab) on the 12 th
Wettest month	544.9 mm	at Sialkot Cantt. (Punjab)

Synoptic Summary

The seasonal/heat low, a semi-permanent feature of monsoon dynamics, was prevalent over Balochistan with its trough extending southeastwards. Also, there was a trough lying over KP and some moist currents, in shallow layers, from the North Arabian Sea started penetrating into northeastern parts of the country from 3rd July. On 5th of July, the seasonal low became more pronounced over north Balochistan and the situation more or less persisted through the following days and weeks of the month. On 10th July, a fresh low-pressure area developed over east Punjab which consequently pulled moist monsoon currents from the North Arabian Sea. Also, a monsoon low developed over Northeast Arabian Sea and adjoining Indian Gujarat on 12 July, persisted till 14 July, and resulted first monsoon showers in Karachi and other scattered places of Sindh and then moved westward.

On 20 July, another monsoon low developed over the Bay of Bengal, persisted for next 2 days and moved towards West Madhya Pradesh (India) on 22 July. On the other hand, a low pressure area formed over eastern Sindh which brought 2nd rain spell over Tharparker, Umerkot and Badin districts on 23-24 July. The monsoon low(s) continued to form over the Bay of Bengal and mover west/northwestward sending persistent monsoon currents into upper half of the country through the following days of the month that consequently produced significant rains in Punjab, KP, GB & Kashmir.

July, 2021 area-weighted rainfall

	Rank (of 60)	Normal (mm)	Average (mm)	Departure (percent)	Comment
Pakistan	41	63.3	65.7	3.8	21st highest (record 153.7 mm in 1978)
Azad Jammu & Kashmir	37	129.9	125.1	-3.7	25th highest (record 280.9 mm in 1988)
Balochistan	44	29.7	36.3	22.4	18th highest (record 95.3 mm in 1978)
Gilgit Baltistan	54	14.0	26.0	85.3	08th highest (record 45.2 mm in 2010)
Khyber Pakhtunkhwa	48	121.7	155.2	27.5	14th highest (record 325.3 mm in 2010)
Punjab	34	103.9	105.1	1.1	28th highest (record 245.0 mm in 1978)
Sindh	28	60.2	32.1	-46.7	34th highest (record 234.1 mm in 2003)

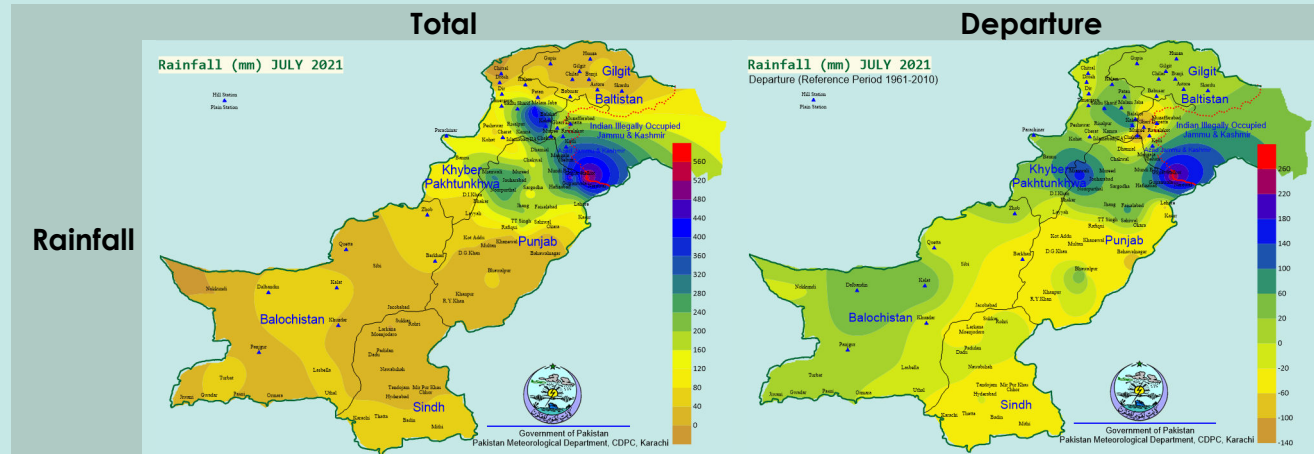
Rank ranges from 1 (lowest) to 61 (highest)

Rainfall – Near normal rainfall over country

During July 2021, three major rainfall events had occurred. The first significant spells of the month was stated on 10th & lasted 16th, second & last spells duration were 19-22 July and 28-through next month. In Pakistan, the month of July rainiest month and get significant rains. On average, The month of July has rainfall contribution of the order of 45% and 21% to the monsoon season (JAS) and annual rainfall respectively. July 2021 National rainfall was 63.3 mm against its normal rain of 65.7 mm being 4% above normal.

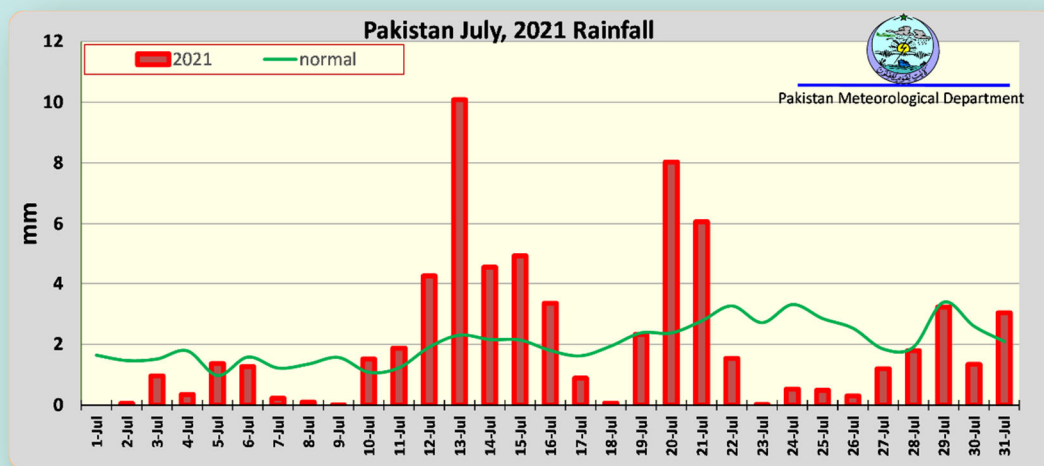
On regional scale, more than normal in monthly rainfall were observed over Balochistan (+22%), GB (+86 %), and KP (+28 %). The Punjab (+1 %) and AJK (-4 %) regions had recorded close to normal rainfall, where as Sindh (-47 %) recorded deficient rainfall. It is pertinent to note that the July 2021 rainfall over GB ranked as 8th heaviest monthly rainfall since 1961, while July 2020 rainfall was 1st highest one. The wettest day of the month in country was 12th July, when Sialkot (Punjab) recorded 193 mm of rain and Sialkot (Punjab) was the wettest place recorded 544.9 mm of total rainfall during the month. The other chief amounts of month's rainfall were: Sialkot-Cantt/AP (544.9 mm/514.3 mm), Islamabad Golra/Saidpur (450.0 mm/428.0 mm), Malam Jabba (434.0 mm), Narowal (380.0 mm) & Kakul (374.4 mm).

JULY 2021 rainfall maps



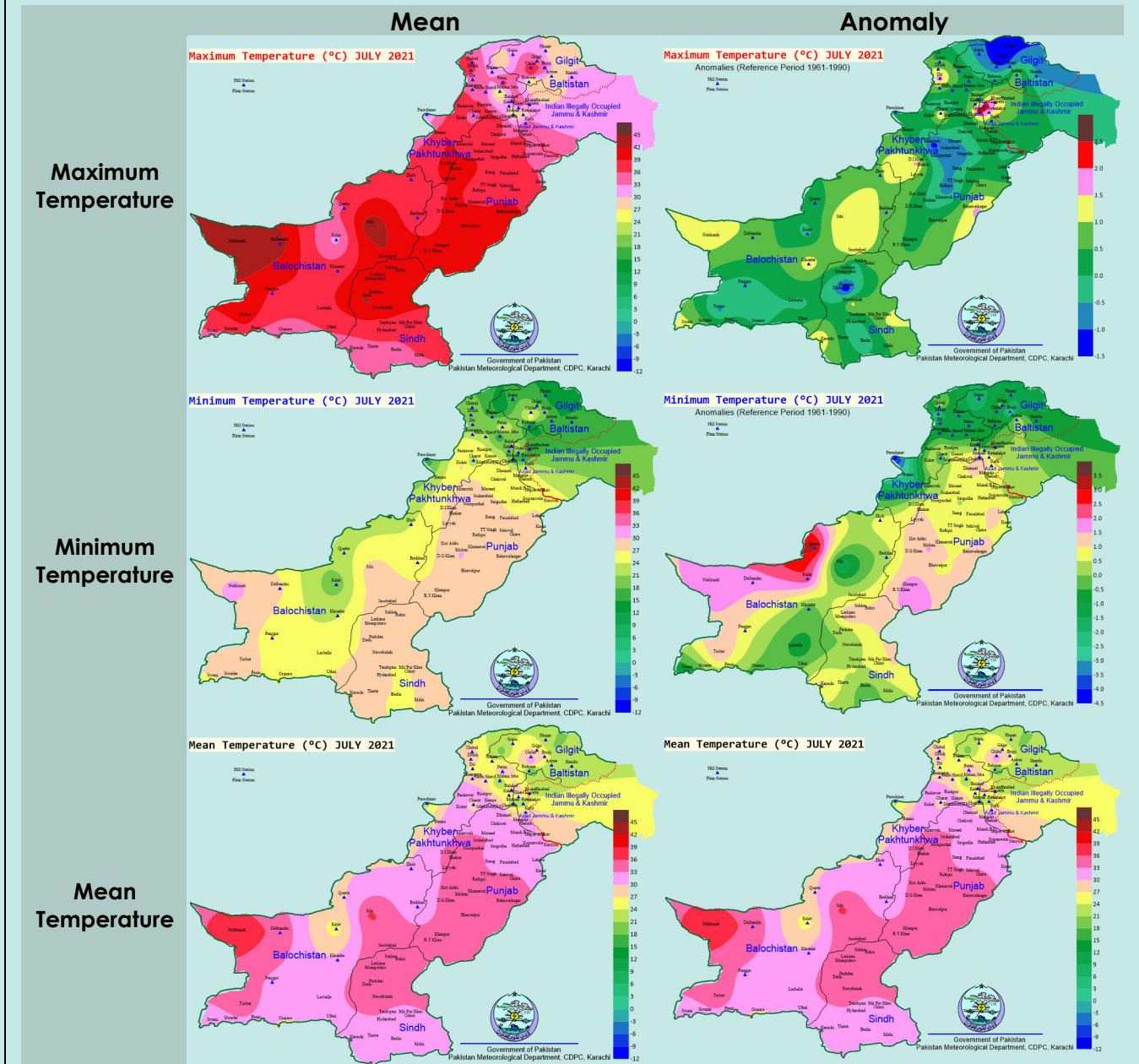
Temperatures – Warmer than average temperature over Country

The national mean monthly temperature of July 2021 for Pakistan as a whole was 31.49 °C, being 0.22 °C warmer than monthly-average. The mean maximum (day) temperature at country-level was 37.58 °C, being 0.47 °C warmer than average of 37.22 °C. The night (minimum) temperature was 25.73 °C, being 0.43 °C warmer than country-average of 25.30 °C. On regional basis, GB (-0.85 °C) and Sindh (-0.70 °C) provinces recorded lower than normal monthly mean temperatures. Balochistan (+0.37 °C), KP (+0.51 °C) and Punjab (+0.56 °C) recorded warmer than normal monthly temperature. The mean temperature anomalies of July were ± 1 °C over most parts of the country except western parts of Balochistan where it was around +1.5 °C.



Mean Maximum temperatures' anomalies were 0-1 °C over most parts of the country, The mean minimum temperature anomalies for the month were ± 2 °C over most parts of country with anomalies over Western Balochistan regions being much higher than remaining parts of country. The hottest day of the month was at Dadu (Sindh) when it recorded 49.5 °C temperature on 1st July. The coldest temperature of 7.5 °C of the month was recorded at Nokkundi (Balochistan) on 18th July 2021.

JULY 2021 Temperature maps



July 2021 Monthly Averages & Normals

Station	Pressure (mb)		Temperature (°C)			Vapour (mb)	Precipitation	
	Station Level	Sea Level	Mean	Maximum	Minimum	Pressure	Total (mm)	Days
Drosh	844.5	1406.1	29.3	37.8	20.6	14.9	5.6	3
	844.3	1404.2	29.7	36.9	23.3	14.9	22.1	5.4
Peshawar	961.8	997.3	32.6	38.4	26.6	31.9	79.8	7
	956.5	995.3	31.8	37.7	26.5	27.9	46.1	6.9
Parachinar	823.1	1447.0	20.7	30.1	15.2	15.2	118.0	7
	821.2	1424.4	24.1	29.8	18.2	17.6	99.4	11.9
Rawalpindi	943.7	998.6	30.3	35.2	25.4	26.1	251.5	13
	941.9	996.9	29.3	34.8	24.2	27.3	305.3	15.6
Sargodha	974.6	994.5	32.6	37.6	27.7	31.5	162.0	7
	976.7	996.7	32.2	37.9	27.2	30.3	113.6	9.5
Jhelum	971.9	997.5	31.5	36.3	26.6	31.9	292.1	15
	971.1	996.8	30.6	35.6	25.9	30.1	263.2	15.3
Sialkot	970.2	998.2	30.1	34.8	25.6	30.6	544.9	14
	969.4	997.4	29.7	34.4	25.2	30.6	304.1	15.1
Zhob	850.1	1405.5	----	36.8	----	18.0	73.0	8
	848.3	1395.1	29.2	35.9	23.1	17.5	61.1	5.1
D.I.Khan	977.5	996.3	33.8	39.9	27.7	33.0	60.0	5
	976.7	995.5	32.1	38.4	26.6	30.6	60.5	5.9
Lahore	974.4	997.9	32.1	36.1	28.2	31.1	120.2	7
	973.2	996.6	31.1	35.7	26.8	30.7	212.1	13.1
Quetta	834.7	1427.4	29.5	36.0	23.2	11.0	4.0	2
	832.6	1408.0	28.5	36.1	20.3	14.3	16.3	1.9
Multan	983.2	996.6	34.5	39.0	30.2	31.3	3.8	2
	982.3	995.7	33.5	39.0	28.7	30.4	60.3	4.4
Barkhan	880.6	1411.2	29.8	36.3	24.0	20.8	58.0	4
	880.7	1410.9	29.1	35.5	23.8	22.2	109.3	7.7
Nokkundi	920.6	991.1	37.7	44.1	30.5	6.7	0.0	0
	921.5	992.2	35.8	43.1	28.6	13.4	2.0	0.2
Dalbandin	905.0	1412.6	36.3	43.4	27.5	15.2	55.2	4
	904.7	1397.2	35.3	42.1	24.9	10.4	7.2	0.2
Jacobabad	990.0	996.1	36.1	41.8	29.9	31.4	1.0	1
	989.2	995.2	34.6	40.2	29.1	31.4	42.8	2.1
Khanpur	986.5	996.2	34.4	40.2	29.2	34.3	0.7	0
	985.9	995.7	33.6	39.6	27.0	29.9	25.8	2.6
Panjgur	893.3	1423.0	32.2	38.6	25.6	16.9	32.0	5
	893.6	1419.9	31.9	38.9	24.8	10.7	21.2	1.7
Khuzdar	868.7	1424.6	30.6	37.8	23.9	20.0	34.9	7
	863.3	1394.2	30.0	36.5	24.1	8.9	60.5	5
Nawabshah	993.3	996.5	34.2	41.6	27.8	31.2	30.3	2
	992.6	996.3	33.4	40.5	27.4	33.0	50.9	1.3
Jiwani	992.4	998.7	30.1	33.9	26.0	33.0	15.0	1
	991.9	998.2	29.6	32.4	26.8	31.1	8.6	0.2
Pasni	998.6	999.1	30.6	34.1	27.1	34.8	24.0	1
	997.1	997.7	29.9	33.3	27.2	31.0	5.0	0.5
Hyderabad	993.0	997.8	32.0	37.0	28.3	31.5	33.6	3
	993.3	996.8	31.6	37.3	27.7	30.2	45.5	2
Chhor	997.4	998.1	32.0	37.2	27.8	36.2	41.0	5
	996.8	997.4	31.2	36.4	26.4	31.1	79.3	3.3
Karachi	996.6	999.3	31.0	34.4	28.5	33.8	45.4	4
	996.2	998.9	29.9	33.1	27.5	31.8	66.3	3.4

Note: The first row against each station contains the actual values while second row for normal values

July 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	32.8	26	24.4	22	42.0	10	16.0	22	2.6	20	14	1*
Peshawar	37.3	1	27.3	20	46.0	1	22.0	5	36.0	20	10	4
Parachinar	22.9	1	18.9	8	33.1	1	13.5	30	45.0	20	5	4*
Rawalpindi	34.6	1	25.9	28	41.7	1	21.6	5	44.0	19	20	4*
Sargodha	37.5	6	26.9	12	45.3	7	22.8	14	57.0	14	25	1
Jhelum	36.0	6	25.6	62	44.5	1	22.8	12*	98.1	12	12	4
Sialkot	34.3	6	24.9	28	43.6	1	22.7	29	107.0	12	8	2*
Zhob	----	--	----	--	41.0	1*	----	--	17.0	6	20	20
D.I.Khan	37.3	7*	27.4	20	45.0	7*	23.0	31	22.0	31	12	13
Lahore	36.6	7	25.5	20	42.3	7	22.0	21	48.2	21	10	1*
Quetta	33.0	26	26.6	15	39.5	26*	19.5	1	3.0	18	30	15
Multan	37.8	11	30.9	21	43.2	17	26.5	13*	2.4	21	20	1*
Barkhan	34.0	1	26.0	22	40.5	1	20.0	4*	35.0	15	8	12
Nokkundi	40.4	12	35.5	21	48.5	8	27.5	4	0.0	0	26	20*
Dalbandin	40.4	9	31.8	15	48.0	9	19.0	15	33.0	15	16	13
Jacobabad	38.0	11*	33.0	13	46.0	1	26.0	13	1.0	13	8	4
Khanpur	37.3	25	31.8	27	43.5	25	26.5	5	0.4	17	12	3*
Panjour	35.4	29	28.6	16	42.0	26	22.0	11	10.0	10*	28	12
Khuzdar	33.8	29	24.3	5	41.5	8	19.0	6	13.4	25	10	12
Nawabshah	36.4	1	31.0	14	46.0	1	26.5	9	16.0	17	18	2
Jiwani	33.4	2	28.6	31	42.0	22	23.5	15	15.0	15	12	7
Pasni	33.8	14	29.1	31	39.5	22	26.5	19*	24.0	15	14	1
Hyderabad	33.9	11	29.4	28	40.2	11	27.2	16	28.0	13	30	1
Chhor	34.9	17	29.1	28	42.3	15	25.0	13	17.5	16	18	1
Karachi	33.8	13	28.9	31	40.1	15	25.6	13	27.0	16	17	1

* 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).

Contact

Director, Climate Data Processing Centre, Pakistan Meteorological Department
 Meteorological Complex, Gulistan E Jouhar, Block #5, Karachi-75290
 Webpage: <http://www.pmd.gov.pk/cdpc/home.htm>; Email: info.cdpc@pmd.gov.pk

Published on 2nd August, 2021