



Pakistan's Monthly Climate Summary July, 2022

In brief

- National rainfall for the month of July 2022 was largely (+180%) above average and stands as record wettest July since 1961.
- July 2022 monthly rainfall alone exceeded the total normal monsoon seasonal rainfall by 26%.
- July 2022 rainfall was excessively above average over Balochistan (+450%) & Sindh (+307%), both rank as the wettest ever during past 62 years.
- Monthly rainfall was largely above average over Punjab (+116%) which stood second as wettest month, above average over GB (+32%) & KP (+30%) and nearly average over AJK (-7%).
- The torrential rain caused massive flash floods in Balochistan, Sindh and southwest Punjab, inflicting huge loss of human lives and properties.
- The wettest day of the month in the country was 25th July, when Badin (Sindh) recorded 219.0mm rainfall, whereas the wettest place with highest monthly total of 584.8mm at PAF Masroor, Karachi.
- The national mean monthly temperature of July 2022 for Pakistan as a whole was 29.93 °C, being 1.34°C cooler than monthly-average of 31.27 °C.
- Daytime (maximum) temperature at country-level was 35.07 °C, being 2.15 °C cooler than average of 37.23 °C.
- The nighttime (minimum) temperature was 24.83 °C, being 0.47 °C cooler than country-average of 25.30 °C.
- The hottest day of the month was at Nokkundi (Balochistan) when it recorded 48.0 °C temperature on 2nd July 2022.
- Coldest temperature of 10.0 °C of the month was recorded at Kalam (KP) on 16th & 17th July 2022.
- The Indian Ocean Dipole (IOD) remained mostly negative during the month.
- The La Niña conditions have been persisting through almost 3rd year, one of the rare phenomena being described as Triple-dip La Niña and is likely to prevail through this summer.

National weather extremes during July 2022

Hottest day	48.0 °C	at Nokkundi (Balochistan) on the 2 nd
Coldest day	18.5 °C	at Gupis (GB) on the 15 th & at Malamjabba (KP) on the 24 th
Coldest night	10.0 °C	at Kalam (KP) on the 16 th & 17 th
Warmest night	33.5 °C	at Nokkundi (Balochistan) on the 2 nd
Wettest day	219.0 mm	at Badin (Sindh) on the 25 th
Wettest month	584.8 mm	at PAF Masroor (Sindh)

July, 2022 Area-Weighted Rainfall [Rank ranges from 1 (lowest) to 62 (highest)]

	Rank (of 62)	Normal Average (mm)	Departure (percent)	Comment
Pakistan	62	63.1	177.5	180.4 1 st highest (record 153.3 mm in 1978)
Azad Jammu & Kashmir	37	173.9	161.9	-6.9 26 th highest (record 379 mm in 1988)
Balochistan	62	29.7	163.3	450.3 1 st highest (record 95.4 mm in 1978)
Gilgit Baltistan	46	13.3	17.6	31.9 17 th highest (record 44.2 mm in 1993)
Khyber Pakhtunkhwa	50	106.7	138.8	30.1 13 th highest (record 289.8 mm in 2010)
Punjab	61	104.1	224.3	115.5 2 nd highest (record 244.9 mm in 1978)
Sindh	62	60.1	244.9	307.0 1 st highest (record 233.9 mm in 2003)

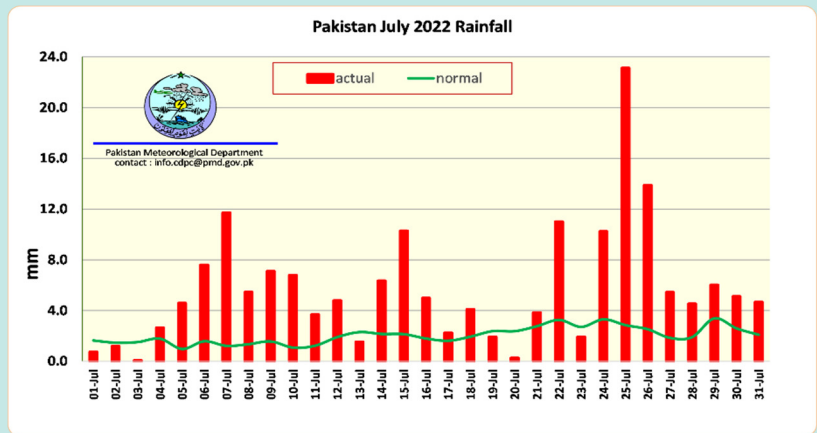
Synoptic Summary

The Monsoon 2022 set on in the country from 30th June, one day earlier than its normal onset date of 1st July when strong moist currents from the Arabian Sea started penetrating into southern Sindh from 1st July which spread over upper and central parts of the country from 6th July, in addition the moist currents from the Bay of Bengal also kept entering in the country and these features lasted almost through the entire month. Meanwhile, the seasonal/heat low continued to prevail over North/Northwest Balochistan with its trough stretched southeastwards. The heat low behaved bit differently with being more deepened, owing to prolonged high temperatures in planes of the country, and oriented over west Balochistan most of the time which resultantly pulled more moist currents towards Balochistan. On the other hand, a monsoon low-pressure area developed over southern areas Punjab on 7th July and prevailed till 15th July.

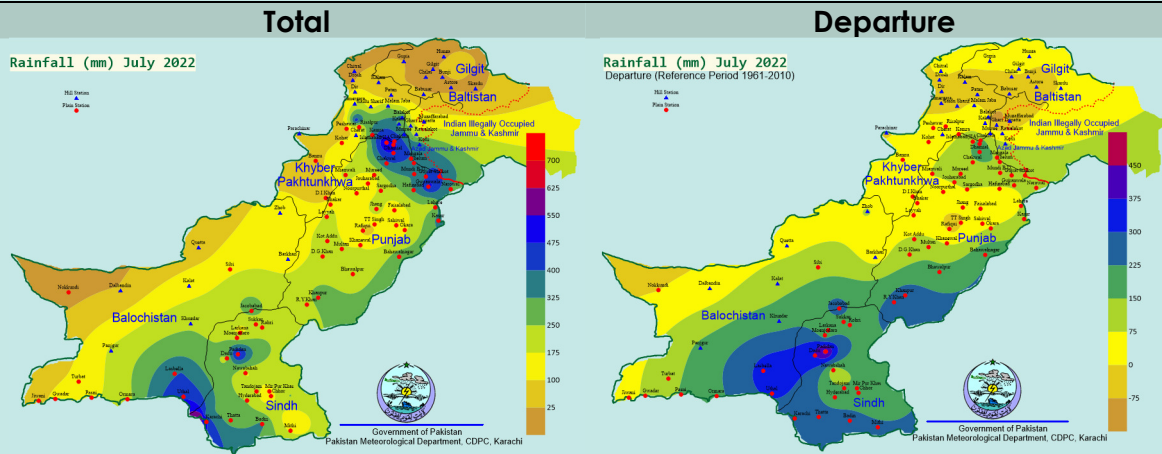
Another monsoon low developed over Gulf of Kutch (India) on 16th July which converted into a depression on 17th and lay over Northeast Arabian Sea-Gulf of Kutch, India. Having moved northwestward, the depression first reduced to a well-marked low over North Arabian Sea the next day and then into a low-pressure area which ultimately moved westwards towards the Oman coast on 19th July. A fresh low-pressure area formed over southeast Sindh and adjoining areas on 22nd and persisted till 27th July which produced heavy rains in central and southern Sindh including Karachi leading to urban flooding in Karachi, Thatta & Badin districts. Overall, the monsoon axis (a line stretching from the seasonal low's centre to the Bay of Bengal in the east) remained to the south of its normal position.

Rainfall, largely above average over the country.

Monsoon 2022 season set on in northern parts of the country on 30th June, a day earlier than its normal date. During July 2022, three widespread rainy spells were experienced. Climatologically the July considered to be most wet month of the year. With 181% above average rainfall, July 2022 happened to be an excessive-rain month with 177.5mm (area-weighted) rain against its normal of 63.1mm and stood as record wettest July since 1961. On average, the July rainfall contribution is of the order of 45% and 21% to the Monsoon (JAS) and annual rainfall respectively. It is pertinent to mention that on regional scale, Balochistan (163.3mm/+450%) & Sindh (244.9mm/+307%) witnessed excessively above average rain during the month, both ranking as the wettest month ever during past 62 years. It was largely above average over Punjab (+116%) and stood as the second wettest month, above average over GB (17.6mm/+32%) & KP (138.8mm/+30%). The AJK with (161.9mm/-7%) was the only region having near to normal rain. The wettest day of the month in the country was 25th July, when Badin (Sindh) recorded 219.0mm, whereas, the PAF Masroor, Karachi remained the wettest place with monthly total of 584.8mm.



Rainfall



The other significant monthly-total rains recorded at Islamabad Airport 573.3mm, Padidan 535.4mm, Gujranwala 494mm, Islamabad (old Airport) 481.9mm, Takht bai 456.2mm, Islamabad Zero Point 449mm, Gujrat 424mm, Sialkot Cantt 423.1mm, Lasbela 404.7mm, Mangla 391.2mm, Jhelum 383.7mm, Chakwal 383.6mm, Kotli 360mm, Murree 356mm, Sialkot airport 352.4mm and Balakot 352.4mm. The Chilas and Nokkundi were the only two stations which remained dry with no rain at all during the month.

New weather Record Set in July 2022

S No	STATION	Weather Paramter	New Record Set		Past Record	
			Value	Month/date	Value	Month/Date
1	Badin	Wettest Month rain (mm)	335.7	Jul-2022	302.9	Jul-2003
2	Gawadar	Coldest Day temperature (°C)	29.0	08-Jul-2022	29.5	(02)-Jul-2002
		Wettest Month rain (mm)	153.2	Jul-2022	39.0	Jul-2021
		Heaviest Rainfall in 24 hours (mm)	58.0	06/2022	35.0	15/2021
3	Jacobabad	Coldest Day temperature (°C)	31.0	25-Jul-2022	31.0	27-Jul-2015
4	Lasbella	Wettest Month rain (mm)	404.7	Jul-2022	353.7	Jul-2003
5	Ormara	Wettest Month rain (mm)	221.0	Jul-2022	185.2	Jul-1978
		Heaviest Rainfall in 24 hours (mm)	62.0	27-Jul-2022	57.4	06-Jul-1960
6	Padidan	Wettest Month rain (mm)	535.4	Jul-2022	207.0	Jul-1956
7	Panjgur	Coldest Day temperature (°C)	26.5	26-Jul-2022	27.0	16-Jul-1978
		Wettest Month rain (mm)	186.0	Jul-2022	144.0	Jul-1945
8	Pasni	Wettest Month rain (mm)	167.3	Jul-2022	159.5	Jul-1956
9	Quetta (Sheikh Manda)	Hottest Day temperature (°C)	41.5	(2)-Jul-/2022	41.5	16-Jul-1968
		Coldest Day temperature (°C)	27.5	25-Jul-2022	27.0	17-Jul-1994
		Wettest Month rain (mm)	67.0	Jul-2022	43.0	Jul-2003
		Heaviest Rainfall in 24 hours (mm)	30.0	05/2022	26.0	23-Jul-1997
10	Sibi	Wettest Month rain (mm)	159.0	Jul-2022	139.2	Jul-1959
11	Sukkur Airport	Coldest Day temperature (°C)	30.5	26-Jul-2022	30.5	26-Jul-2015
		Wettest Month rain (mm)	175.0	Jul-2022	117.6	Jul-2003
12	Turbat	Wettest Month rain (mm)	119.0	Jul-2022	65.4	Jul-2003
		Heaviest Rainfall in 24 hours (mm)	41.3	27-Jul-2022	36.6	28-Jul-2003
13	Bahawalnagar	Wettest Month rain (mm)	297.0	Jul-2022	263.1	Jul-1995
14	Rahim Yar Khan	Wettest Month rain (mm)	191.8	Jul-2022	121.0	Jul-2015
		Heaviest Rainfall in 24 hours (mm)	58.0	22-Jul-2022	55.0	02-Jul-2015
15	PAF Masroor	Wettest Month Rain (mm)	584.8	Jul-2022	509.3	Jul-1967

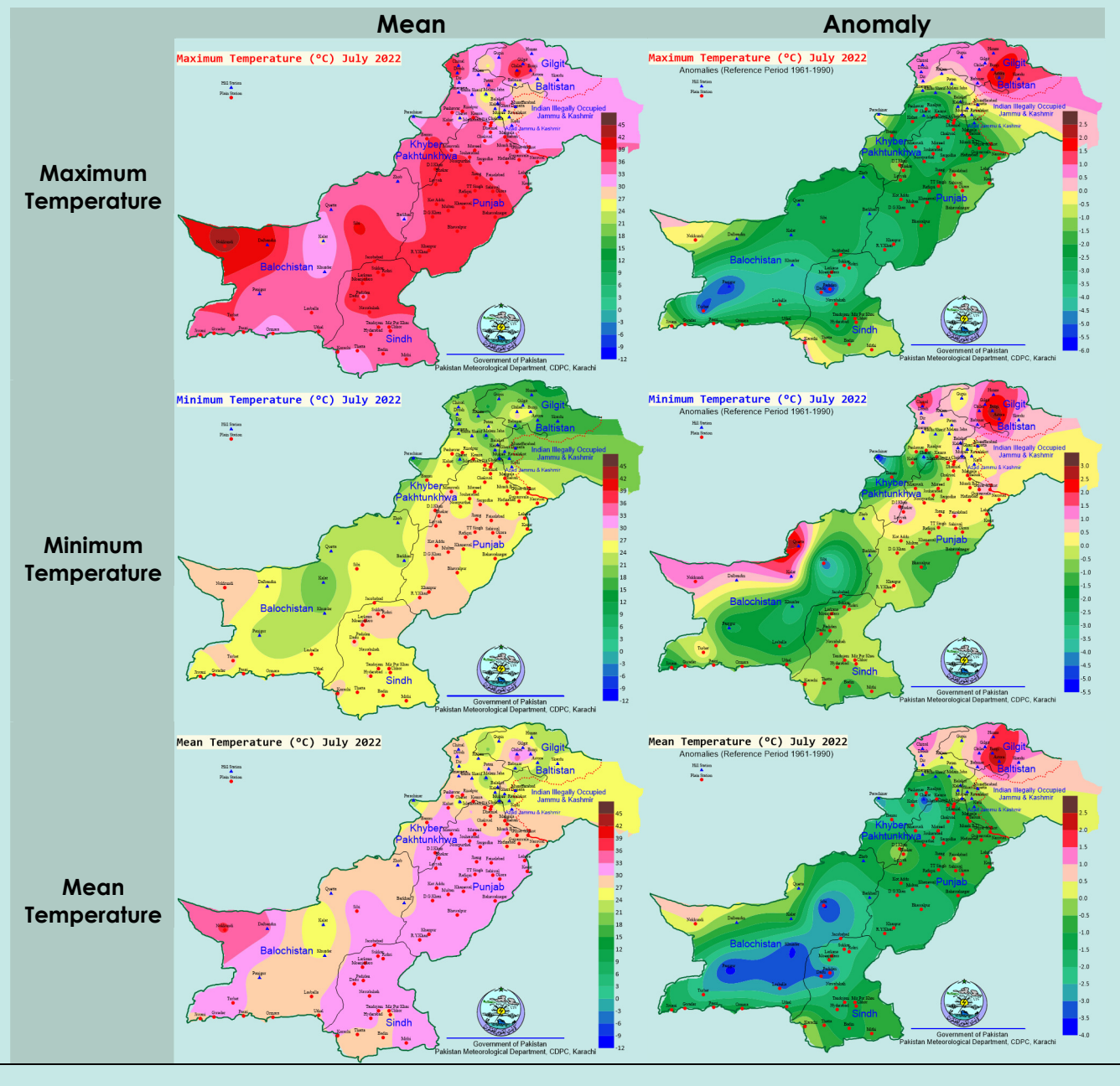
Temperatures: Cooler than Normal temperatures observed over the country.

The national mean monthly temperature of July 2022 for Pakistan as a whole was 29.93 °C, being 1.34 °C cooler than average of 31.27 °C. Similarly on regional scale AJK recorded 26.19 °C, Balochistan 29.82 °C, GB 27.76 °C, KP 28.49 °C, Punjab 31.10 °C and Sindh 31.06 °C.

The mean temperature anomalies; Balochistan (-2.07 °C), Punjab (-1.45 °C), Sindh (-1.39 °C) and KP (-1.0°C) all recorded cooler than average temperatures, except GB (+1.17 °C) & AJK (+0.53 °C), being little warmer than average for the month.

The July 2022 mean maximum (daytime) temperature of 35.07 °C was recorded at country-level being 2.15 °C cooler than average of 37.23°C. The average night (minimum) temperature of 24.83 °C, being 0.47 °C cooler than country-average of 25.30 °C, during the month. The mean temperature anomalies of July 2022 lies between +2.5 to -3.5 °C in the country. The Mean Maximum temperature anomalies were +2 to -5 °C in the country. The maximum temperature anomalies over GB & AJK were considerably higher. The hottest day of the month was at Nokkundi (Balochistan) when it recorded 48.0 °C temperature on 2nd July. The coldest temperature of 10.0 °C of the month was recorded at Kalam (KP) on 16th & 17th July 2022.

July 2022 Temperature maps



July 2022 Monthly Averages & Normals

Station	Pressure (mb)		Temperature (°C)			Vapour (mb)	Precipitation	
	Station Level	Sea Level	Mean	Maximum	Minimum	Pressure	Total (mm)	Days
Drosh	845.1	1412.4	30.7	37.8	23.6	16.5	11.8	5
	844.3	1404.2	30.1	36.9	23.3	14.9	22.1	5.4
Peshawar	964.3	1000.3	30.6	35.1	25.9	32.9	68.0	5
	956.5	995.3	32.1	37.7	26.5	27.9	46.1	6.9
Parachinar	825.1	1467.7	21.8	29.6	14.0	13.0	102.0	7
	821.2	1424.4	24.0	29.8	18.2	17.6	99.4	11.9
Rawalpindi	945.8	1001.2	28.5	32.1	24.7	27.9	481.9	17
	941.9	996.9	28.8	34.8	24.2	27.3	305.3	15.6
Sargodha	979.2	999.4	31.4	35.5	27.2	35.0	133.5	10
	976.7	996.7	32.5	37.9	27.2	30.3	113.6	9.5
Jhelum	973.8	999.6	29.9	33.6	26.2	34.6	383.7	16
	971.1	996.8	30.7	35.6	25.9	30.1	263.2	15.3
Sialkot	972.2	1000.4	29.4	32.9	25.8	33.8	423.1	17
	969.4	997.4	29.8	34.4	25.2	30.6	304.1	15.1
Zhob	851.8	1423.8	28.2	33.3	23.1	20.7	139.0	9
	848.3	1395.1	29.5	35.9	23.1	17.5	61.1	5.1
D.I.Khan	979.8	998.7	32.7	37.4	28.0	34.7	66.9	6
	976.7	995.5	32.5	38.4	26.6	30.6	60.5	5.9
Lahore	976.5	1000.2	30.7	34.3	27.1	33.4	207.0	13
	973.2	996.6	31.3	35.7	26.8	30.7	212.1	13.1
Quetta	835.6	1438.3	27.8	33.2	22.5	18.2	63.0	12
	832.6	1408.0	28.0	36.1	20.3	14.3	16.3	1.9
Multan	985.1	998.7	32.4	36.4	28.2	34.0	183.1	9
	982.3	995.7	33.8	39.0	28.7	30.4	60.3	4.4
Barkhan	882.5	1427.0	27.8	32.4	23.1	24.6	141.0	13
	880.7	1410.9	29.7	35.5	23.8	22.2	109.3	7.7
Nokkundi	921.0	991.9	36.3	42.7	29.9	9.7	0.0	0
	921.5	992.2	35.1	43.1	28.6	13.4	2.0	0.2
Dalbandin	905.9	1416.9	33.8	41.0	26.5	16.6	32.2	7
	904.7	1397.2	34.3	42.1	24.9	10.4	7.2	0.2
Jacobabad	992.1	998.3	32.3	38.2	26.5	33.2	290.0	14
	989.2	995.2	34.6	40.2	29.1	31.4	42.8	2.1
Khanpur	988.4	998.2	32.0	36.6	27.4	36.3	300.4	14
	985.9	995.7	33.3	39.6	27.0	29.9	25.8	2.6
Panjgur	893.2	1416.1	28.0	33.5	22.5	24.4	186.0	12
	893.6	1419.9	31.8	38.9	24.8	10.7	21.2	1.7
Khuzdar	869.3	1427.5	26.7	32.4	21.1	9.3	237.1	17
	863.3	1394.2	30.3	36.5	24.1	8.9	60.5	5
Nawabshah	994.8	998.1	32.4	37.6	27.1	33.2	158.8	11
	992.6	996.3	34.0	40.5	27.4	33.0	50.9	1.3
Jiwani	993.0	999.3	28.7	32.4	24.9	32.2	63.0	7
	991.9	998.2	29.5	32.4	26.8	31.1	8.6	0.2
Pasni	999.0	999.5	29.2	32.6	25.8	34.4	167.3	9
	997.1	997.7	29.2	33.3	27.2	31.0	5.0	0.5
Hyderabad	994.1	998.9	30.8	34.5	27.1	33.2	247.0	15
	993.3	996.8	32.5	37.3	27.7	30.2	45.5	2
Chhor	998.3	999.0	30.9	35.2	26.6	34.9	254.0	10
	996.8	997.4	31.4	36.4	26.4	31.1	79.3	3.3
Karachi	997.0	999.7	30.3	33.2	27.4	34.5	348.3	16
	996.2	998.9	30.3	33.1	27.5	31.3	66.3	3.4

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

July 2022 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	35.4	1	24.5	16	43.8	1	16.3	15	5.0	24	14	1*
Peshawar	34.3	19	26.0	29	40.7	18	21.0	22	38.0	22	8	1
Parachinar	25.3	3	18.0	26	34.0	3	11.0	26*	35.0	16	6	1*
Rawalpindi	32.3	19	24.7	21	36.7	19	20.6	13	84.5	13	35	9
Sargodha	35.1	3*	27.8	14	40.2	3*	24.0	7*	30.6	22	6	1*
Jhelum	34.1	19	25.2	14	39.8	19	22.4	31	111.0	14	12	28
Sialkot	32.5	19	24.3	14	37.4	18	23.0	14	156.2	21	6	12
Zhob	33.5	1	23.5	22	39.0	1*	19.5	8	51.0	24	13	27*
D.I.Khan	36.3	5*	27.3	22	42.5	8	25.0	22	26.0	24	6	5*
Lahore	34.0	5*	25.8	21	39.0	7	23.0	21	62.0	21	12	14
Quetta	33.0	1*	24.5	7*	40.5	1*	19.5	7*	18.0	7	34	19
Multan	36.4	5	25.8	22	40.7	5	23.0	22	36.6	7	16	1*
Barkhan	31.5	1	24.3	24	37.0	1	21.0	7*	47.0	9	4	2*
Nokkundi	40.8	2	32.3	26	48.0	2	27.0	27*	0.0	0	20	13*
Dalbandin	40.3	2	29.0	7	47.5	2	20.0	9	11.0	25	14	10
Jacobabad	36.5	2	28.5	24	44.0	1*	24.5	7	45.0	25	22	14
Khanpur	36.4	2	26.6	24	41.8	5	23.5	15	61.0	7	8	6*
Panjgur	33.0	3	24.5	25*	40.5	3	20.0	27	40.0	7	14	1*
Khuzdar	32.3	1*	24.3	7*	39.0	3	18.0	30*	90.4	25	8	10
Nawabshah	35.8	1*	28.5	25	43.5	1	24.5	16	65.0	16	16	21
Jiwani	30.3	3*	26.3	26	35.0	18*	23.0	8*	34.0	6	12	15*
Pasni	31.8	17	27.0	25	37.5	17	25.0	9*	43.0	26	6	13*
Hyderabad	34.1	4	28.5	26	39.3	4	25.5	7	59.0	7	16	1*
Chhor	34.3	5	27.5	26	40.0	5	24.0	6	88.0	15	12	1*
Karachi	32.8	4*	27.8	25	37.5	14	25.0	12	81.7	25	16	16*

* 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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