



Government of Pakistan  
Pakistan Meteorological Department  
**Pakistan's Monthly Climate Summary**  
October 2023

### In brief

- National rainfall with 16.1mm for the month of October 2023 was excessively above average (+102%) and stands 9<sup>th</sup> highest October rainfall during past 63 years (the record is 52.7mm in 1997).
- With 27.1mm, it was the 3<sup>rd</sup> highest October rainfall in Punjab (the record is 83.1mm in 1997).
- The wettest day of the month in the country was October 15 when Lahore Airport (Punjab) recorded 83.0 mm of rainfall, making it the wettest place as well with a monthly total of 143.0 mm.
- The national mean monthly temperature of October 2023 for Pakistan as a whole was 24.59 °C, being **1.00 °C warmer** than the average (23.59 °C).
- The daytime (maximum) temperature at the country-level was 31.72 °C, which is **0.19 °C slightly warmer** than the country-wide average of 31.53 °C.
- The nighttime (minimum) temperature at country level was 17.38 °C, which is **2.15 °C warmer** than the countrywide average of 15.24 °C and ranks as the 3<sup>rd</sup> warmest average minimum temperature for the month in the past 63 years, with the record being 18.17 °C in 2013.
- The hottest day of the month was observed in Turbat (Balochistan) when it recorded a temperature of 45.0 °C on October 04, 2023, while Shaheed Benazirabad (Sindh) was the **warmest** place with a mean monthly maximum temperature of 38.5 °C.
- The **coldest** temperature of the month, -1.5°C, was recorded in Kalam (KP) on October 18, 2023. Coincidentally, the same station was the **coolest** place with a mean monthly minimum temperature of 2.1 °C.
- A positive phased Indian Ocean Dipole (IOD) is underway.
- Central and eastern Pacific Sea surface temperatures (SSTs) consistently exceed El Niño thresholds, turning into a full-blown El Niño.

**Table-1: National Weather Extremes during October 2023**

Hottest day	45.0 °C	at Turbat (Balochistan) on the 4 <sup>th</sup>
Coldest day	7.0 °C	at Malam Jabba (KP) on the 17 <sup>th</sup>
Coldest night	-1.5 °C	at Kalam (KP) on the 18 <sup>th</sup>
Warmest night	28.0 °C	at Karachi A/P (Sindh) on the 7 <sup>th</sup> , 8 <sup>th</sup> & 10 <sup>th</sup>
Wettest day	83.0 mm	at Lahore Airport (Punjab) on the 15 <sup>th</sup>
Wettest month	143.0 mm	at Lahore Airport (Punjab)

### Synoptic Summary

October is usually a transitional month in Pakistan after monsoon retreats from the country during the preceding month of September. With the start of October, a westerly trough prevailed over Gilgit-Baltistan (GB) and Upper Khyber Pakhtunkhwa (KP) during 1-7 Oct, Northern areas Punjab and Kashmir from 8-10 & 13-17 Oct. Two low-pressure areas formed over central Balochistan and eastern Sindh from 15-21 Oct followed by a fresh westerly trough over northern parts of the country from 21-25 Oct that resulted some rain/thundershowers with isolated hailstorm in GB, Kashmir, KP, Punjab, Balochistan and at isolated places in Sindh during that period. Towards the end of the last week, a westerly trough again entered into the south Balochistan and adjoining Sindh with dry continental air continued to prevail over most parts of the country.

**Table-2: Significant wind speeds recorded during the October-2023.**

Date	Station	Max Wind Knots
30/2023	Turbat	40
09/2023	Islamabad AP	36
16/2023	Islamabad AP	31
09/2023	Toba Tek Singh	32
14/2023	Lahore Airport	50
09/2023	Gujranwala	40
14/2023	Kasur	45

**Table-3: New Weather (rain & temperature) Records Set in July 2023**

S No	Stations	Weather Parameters	New Record		Old Record		No of years examined.
			Value	Date	Value	Date	
1	Cherat	Wettest month rainfall(mm)	112.0	2023	111.8	1931	93
2	Risalpur	Wettest month rainfall(mm)	123.0	2023	117.0	2004	71
3	Barkhan	Hottest day temperature (°C)	37.0	06/2023	37.0	01/2009	57
4	Zhob	Hottest day temperature (°C)	36.0	06/2023	36.0	01/2016	63

**Rainfall: Excessively above average in the country as a whole**

Climatologically, the October rainfall contribution to the national annual total and Post-monsoon (OND) is 2.7% & 30.2%, respectively. During the month, Pakistan experienced 3/4 light to moderate rainfall spells. The area-averaged daily rainfall is shown in Fig-1. October 2023 rainfall was excessively above average, with 16.1mm (+102%), for Pakistan as a whole and stands 9<sup>th</sup> highest rainfall in October (record is 52.7mm in 1997). On regional scale: Punjab with 27.1mm (+234%) observed the 3<sup>rd</sup> highest October rainfall (record is 83.1mm in 1997); Balochistan

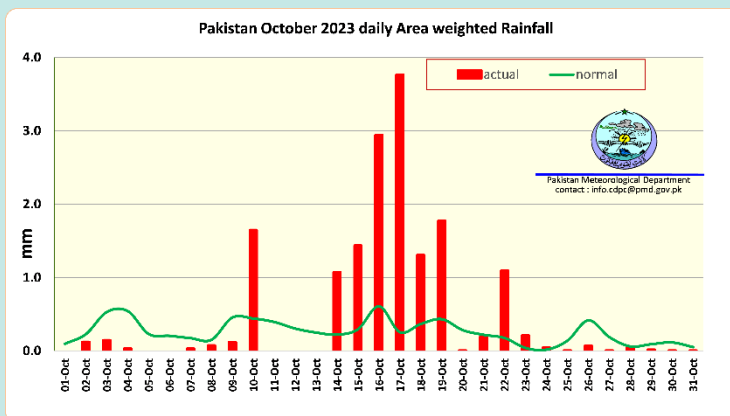


Fig1: Daily Area Weighted Rainfall

with 9.8mm (+230%) observed the 7<sup>th</sup> highest October rainfall (record is 51.8mm in 1997); GB with 15.3mm (+96%) observed the 8<sup>th</sup> highest October Rainfall (record is 97.8mm 1987) and AJK with 49.4mm (+59%) all experienced excessively above average rainfall during the month. In contrast, the Sindh with only 1.4mm (-67%) was the only region having excessively below average rainfall (Table-4).

The wettest day of the month in the country was 15<sup>th</sup> October when Lahore Airport (Punjab) recorded 83.0 mm of rainfall. Coincidentally, the same station was the wettest place with a monthly total rainfall of 143.0 mm (Table-1).

**Table-4: October 2023 Area-Weighted Rainfall**

Region	Rank (of 63y)	Normal (mm)	Average (mm)	Departure (percent)	Comment
Pakistan	55	8.0	16.1	102	09th highest (record 52.7mm in 1997)
Azad Jammu & Kashmir	51	31.1	49.4	59	----
Balochistan	57	3.0	9.8	230	07th highest (record 51.8mm in 1997)
Gilgit Baltistan	56	7.8	15.3	96	08th highest (record 97.8mm in 1987)
Khyber Pakhtunkhwa	43	25.0	29.6	18	----
Punjab	61	8.1	27.1	234	03rd highest (record 83.1mm in 1997)
Sindh	48	4.3	1.4	-67	----

[RANK RANGES FROM 1 (LOWEST) TO 63 (HIGHEST) IN TERMS OF YEARS FROM 1961]

## October 2023 Rainfall maps

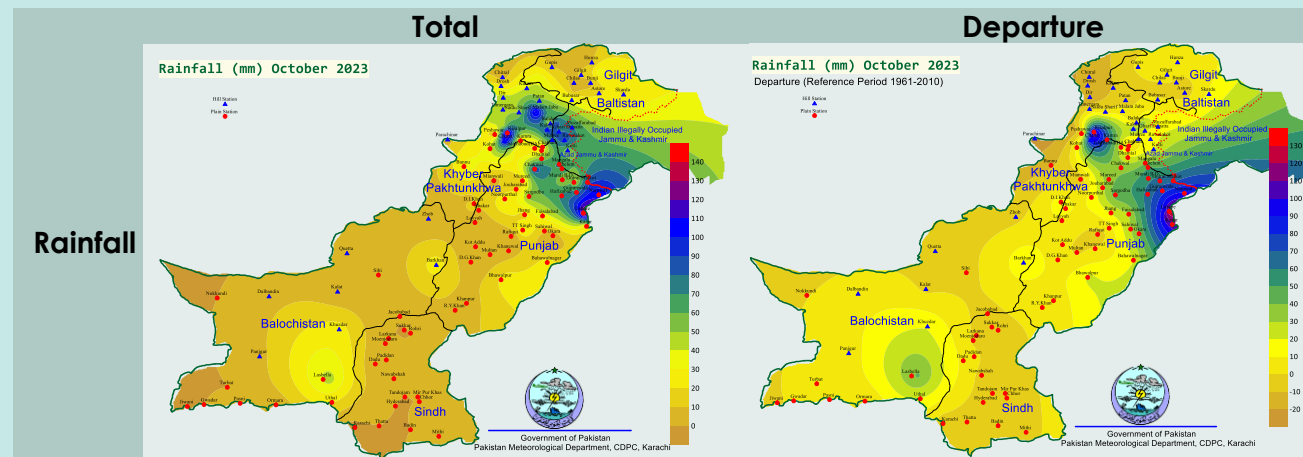


Fig. 2. October spatial rainfall distribution and departure from normal

The other significant rainfalls were recorded at Risalpur 123.0mm, Malamjabba 120.0mm, Lahore-City 112.6mm, Cherat 112.0mm, Narowal 107.4mm, Muzaffarabad Airport 92.6mm, Kakul 91.0mm, Rawalakot 90.9mm, Muzaffarabad City 89.0mm, Chakwal 88.6 mm and Sialkot Cantt 86.0 mm. The stations; Badin, Karachi A/P, Rohri, Sukkur, Moen-Jo-Daro, Thatta, Dadu, Mirpurkhas, Khairpur, Jiwani, Faisal and Masroor Bases, Karachi remained absolutely dry with no rain during the month. The stations; Hyderabad, Jacobabad, Tandojam, Gwadar, Nokkundi, Sibbi, Turbat and Ormara recorded only traces of rainfall during the month.

**Table 5: Temperatures: Mostly **Warmer** than average in most the country.**

Area Average Temperatures (°C) statistics in October 2023						
Regions	Maximum Temperature		Minimum Temperature		Mean Temperature	
	Actual	Anomaly	Actual	Anomaly	Actual	Anomaly
Pakistan	31.72	0.19	17.38	2.15	24.59	1.00
Azad Jammu & Kashmir	24.45	-0.10	10.38	0.11	17.43	0.01
Balochistan	32.67	1.12	17.16	2.58	24.99	1.65
Gilgit-Baltistan	21.68	-0.81	7.20	-0.09	14.45	-0.47
Khyber Pakhtunkhwa	28.26	0.02	13.55	0.39	20.92	0.23
Punjab	32.59	-0.83	19.37	2.26	25.99	0.40
Sindh	36.00	-0.23	23.24	3.42	29.64	1.61

October 2023 was **1.00 °C, warmer** than average with national mean monthly temperature being 24.59°C against the average of 23.59 °C. So was the situation in the regions; Balochistan with 24.99 (**+1.65**), Sindh with 29.64°C (**+1.61°C**) observed the 5<sup>th</sup> highest monthly mean (the record being 29.87°C in 2017), Punjab with 25.99 °C (**+0.40°C**), KP with 20.92 °C (**+0.23°C**) exhibited warmer than average temperatures. The AJK with 17.43 °C (**+0.01°C**) observed near average temperature. The GB with 14.45 °C (**-0.47 °C**) was the only region that observed **cooler** than average temperature (Table-5).

The mean monthly maximum (daytime) temperature (31.72 °C) recorded at country-level was also **+0.19 °C slightly warmer** than average of 31.53 °C (Table-5, Fig. 3, upper panel). Similarly, the country-level night (minimum) temperature of 17.38 °C was **+2.15 °C warmer**

than average of 15.24 °C and stands as the 3<sup>rd</sup> warmest night-time (minimum) temperature in the month (record being 18.17 °C in 2013). The Sindh province with 23.24 °C (+3.42 °C) recorded significantly warmer mean minimum temperature of the month and stands the 3<sup>rd</sup> warmest night-time (minimum) temperature (record being 23.54 °C in 2013) during past 63 years (Table-4, Fig. 3, middle panel). The mean temperature anomalies ranged from -1.7 to +3.9 °C while the mean maximum temperature anomalies remained  $\pm 2.4^{\circ}\text{C}$  in the country, being considerably higher in western Balochistan. The hottest day of the month was recorded at Turbat (Balochistan) when it recorded a temperature of 45.0 °C on 4<sup>th</sup> October (Table-1). Shaheed Benazirabad (Sindh) was the warmest place with a mean monthly maximum temperature of 38.5 °C. Kalam (KP) recorded the month's coldest night temperature of -1.5 °C on 18<sup>th</sup> October (Table-1), which also has been the coolest place with 2.1 °C average minimum temperature.

### October 2023 Temperature maps

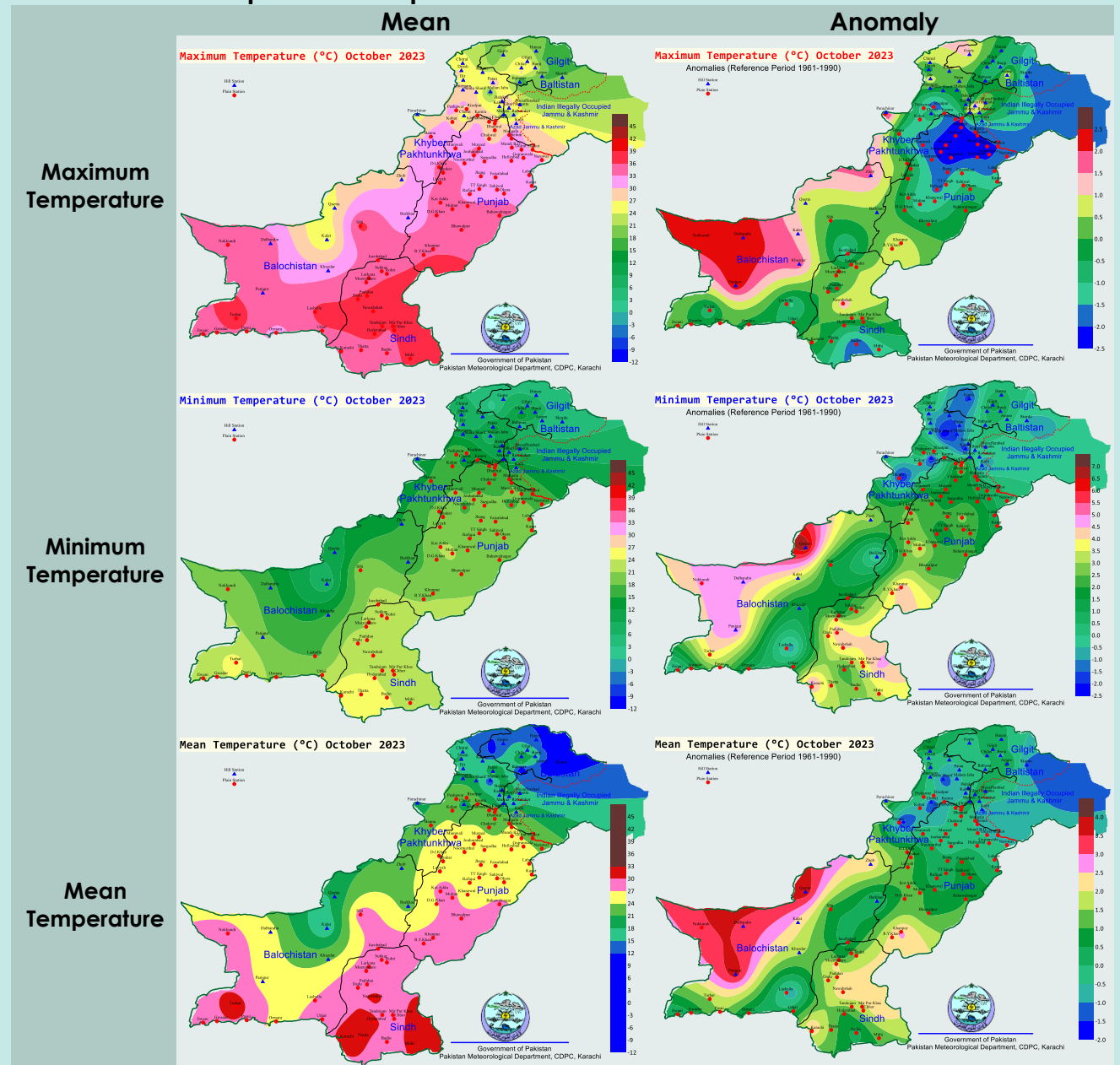


Fig. 3. October-23 Temperatures (Mean, Maximum and Minimum) and their anomalies

**Table 6: October 2023 Monthly Averages & Normals**

Station	Pressure (mb)		Temperature (°C)			Vapour (mb)	Precipitation	
	Station Level	Sea Level	Mean	Maximum	Minimum	Pressure	Total (mm)	Days
Drosh	855.2	1515.9	18.5	26.1	10.8	8.7	18.8	5
	855.3	1515.5	19.2	26.7	11.6	7.0	31.1	5.1
Peshawar	975.8	1013.2	23.7	31.1	16.2	19.0	16.0	5
	970.1	1010.5	23.7	31.6	15.9	16.0	19.0	3.2
Parachinar	828.3	1503.9	18.1	25.0	11.1	10.6	----	--
	829.4	1516.1	16.1	23.3	8.8	7.3	31.8	5.8
Rawalpindi	956.0	1013.2	22.8	28.8	16.8	15.1	28.5	4
	952.9	1010.9	22.3	30.9	14.0	15.0	29.8	3.8
Sargodha	990.3	1011.3	25.7	32.4	18.9	21.1	48.8	2
	989.4	1010.6	25.1	33.5	17.4	18.1	9.7	1.9
Jhelum	984.9	1011.6	24.3	31.0	17.6	21.3	67.9	8
	983.5	1010.3	24.7	32.7	16.6	17.8	18.5	3.3
Sialkot	983.0	1012.0	23.4	29.7	17.1	20.9	86.0	5
	981.8	1010.6	23.7	31.2	16.2	18.8	18.2	2.2
Zhob	858.8	1494.4	22.3	29.5	15.0	9.9	1.0	1
	859.0	1494.9	20.0	28.0	12.1	7.8	6.0	0.9
D.I.Khan	991.3	1010.8	26.6	33.4	19.8	22.0	22.0	2
	990.3	1009.9	25.2	33.2	17.1	17.8	5.8	1.6
Lahore	987.7	1012.1	25.4	31.0	19.6	21.0	112.6	3
	985.9	1010.2	25.7	32.8	18.5	18.1	14.8	2
Quetta	845.5	1543.5	18.5	26.2	10.8	5.4	2.0	1
	843.0	1518.6	15.1	25.5	4.7	6.2	6.5	1.1
Multan	996.8	1010.7	27.5	33.2	21.7	21.0	2.4	1
	996.1	1010.2	26.3	34.4	18.2	18.3	5.2	0.9
Barkhan	891.0	1504.7	22.9	30.4	15.4	10.2	26.0	2
	891.3	1505.1	23.0	29.8	16.0	9.4	8.9	0.5
Nokkundi	934.6	1008.7	28.0	35.6	20.5	6.6	0.0	0
	935.6	1010.5	24.3	33.1	16.0	8.2	0.3	0.1
Dalbandin	919.4	1529.8	25.2	34.3	16.1	10.8	6.5	3
	918.4	1533.8	22.0	31.4	10.5	5.8	0.1	0.2
Jacobabad	1004.3	1010.6	28.1	34.0	22.2	25.8	0.0	0
	1003.4	1009.7	27.6	35.1	20.2	18.8	2.2	0.1
Khanpur	1000.3	1010.4	28.2	35.7	20.7	23.9	5.0	1
	999.4	1009.6	25.6	34.7	16.5	18.6	2.6	0.5
Panjgur	904.3	1519.9	25.9	33.1	18.6	12.3	7.0	1
	904.8	1513.1	22.2	30.3	14.0	5.8	2.8	0.3
Khuzdar	879.4	1527.0	23.6	31.7	15.3	8.3	24.8	4
	876.5	1494.7	21.8	29.9	13.8	3.7	7.4	0.5
Sh. Benazirabad	1007.1	1010.4	30.4	38.5	22.3	24.6	0.5	0
	1006.3	1010.2	27.6	37.1	18.2	20.6	4.9	0.1
Jiwani	1005.4	1011.9	26.9	32.7	21.0	28.2	0.0	0
	1004.7	1011.1	27.1	32.7	21.5	24.2	1.5	0.2
Pasni	1011.2	1011.7	28.7	34.4	23.0	28.7	7.0	1
	1009.3	1010.2	26.4	33.7	20.2	20.6	3.4	0.1
Hyderabad	1005.7	1010.5	30.5	36.7	24.3	23.6	0.0	0
	1005.8	1009.7	29.6	36.8	22.4	18.7	2.9	0.2
Chhor	1010.2	1010.9	30.2	37.2	23.1	25.5	4.0	1
	1008.7	1009.5	27.9	37.3	18.5	19.4	6.2	0.4
Karachi	1008.8	1011.5	30.4	35.0	25.7	27.5	0.0	0
	1008.0	1010.3	28.3	35.1	21.4	21.0	2.3	0.3

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

**Table-7: October 2023 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	22.5	5	11.1	17	32.0	5	6.8	18	9.1	18	12	8*
Peshawar	28.0	8	19.2	17	37.3	5	13.0	19	8.0	14	8	16
Parachinar	23.3	8*	6.5	22*	30.5	7	6.5	22*	3.0	15*	8	5
Rawalpindi	27.2	8	16.8	17	33.2	6	12.0	18	14.0	17	22	16
Sargodha	29.1	5	20.5	17	38.2	5	15.2	18	40.2	16	8	14
Jhelum	28.9	8	17.2	17	36.0	4*	13.8	18	25.1	14	10	16
Sialkot	27.4	8	16.2	17	34.2	8	12.6	18	37.0	17	4	16*
Zhob	27.3	6	18.3	17	36.0	6	11.0	18	1.0	22	11	6
D.I.Khan	30.5	8	20.8	17	38.5	6	16.0	17*	19.0	17	10	9
Lahore	29.8	8	20.4	17	35.5	6	15.6	18	59.0	15	8	9*
Quetta	23.0	6	14.8	16	32.5	6	8.0	16	2.0	16	24	15
Multan	31.7	7	22.9	18	38.0	7	17.5	18	2.2	22	12	13*
Barkhan	27.8	7	19.0	17*	37.0	6	12.5	24	16.0	22	4	16
Nokkundi	32.5	5	25.3	17	41.0	5	16.5	17	0.0	0	16	31
Dalbandin	29.3	12	22.3	28	41.0	6	12.5	19*	3.0	21	14	15
Jacobabad	31.8	8	24.8	18	38.0	8	20.0	31	0.0	0	6	10*
Khanpur	32.1	8	24.5	17*	39.8	5	17.8	18	5.0	22	8	10*
Panjgur	30.0	6	23.0	19	38.5	6	16.5	2*	7.0	19	12	7
Khuzdar	27.5	6*	19.8	19	37.0	6*	10.5	19	21.2	19	6	9*
Sh.Benazirabad	33.8	9	28.3	3*	42.5	9	17.0	3	0.5	29	16	12
Jiwani	28.5	2	25.3	25*	36.0	2	19.0	23*	0.0	0	12	4*
Pasni	32.0	1	26.8	22	41.0	1	20.5	29*	7.0	22	14	9
Hyderabad	32.8	10	28.0	29	40.5	2	21.0	29	0.0	0	22	4*
Chhor	32.3	11	28.6	19*	40.0	2	19.0	30	4.0	26	18	31
Karachi	32.0	1	28.7	16	39.5	1	21.6	29	0.0	0	12	6*

\* 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**

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