

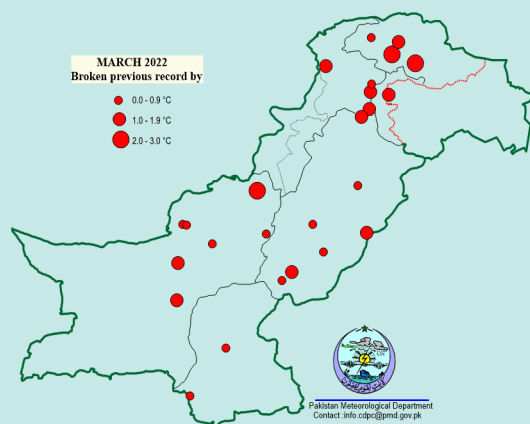


Pakistan's Monthly Climate Summary March, 2022

In brief

- National rainfall for the month of March 2022 was 62% below normal and ranked 9th driest month since 1961.
- March 2022 rainfall was largely below normal over all parts of the country with Balochistan (-66%), Sindh (-65%), Punjab (-65%), KP (-66%) & AJK (-48%) all experienced extreme deficient rainfall.
- The wettest day of the month in the country was 29th March, when Muzaffarabad City (AJK) recorded 72.0 mm of rainfall, whereas the wettest place was Kakul (KP) with highest monthly total rain of 125.3 mm. Many stations in Sindh and Balochistan have reported nil or only traces of rainfall.
- The national mean monthly temperature of March 2022 for Pakistan as a whole was 22.92 °C, being 4.26 °C warmer than monthly-average, it has now the ever warmest month since 1961. The last record was 31.09°C in 2004.
- The mean maximum (day) temperature at country-level was 30.89 °C, being 5.01 °C warmer than average of 25.88 °C, and as such was the 2nd warmest month during past 62 years.
- The night (minimum) temperature was 14.95 °C, being 3.52 °C warmer than country-average of 11.43 °C, is now the ever warmest night temperature since 1961. The last warmest night temperature was 14.57°C in 2010.
- Highest Maximum temperatures records have got broken in some cities in the country.
- The hottest days of the month were at Shaheed Benazirabad (Sindh) when it recorded 45.5 °C temperature on 27th & 28th March 2022.
- The coldest temperature of -5.7 °C of the month was recorded at Kalam (KP) on 1st March.
- The neutral Indian Ocean Dipole (IOD) event persisted during the month.
- La Niña remained active in the tropical Pacific during March 2022.

New weather Record Set in March 2022 of Highest Maximum Temperature



SN	Station	New Record		Old Record	
		Max	date	Max	Date
1	Astore	22.5	19/2022	20.3	31/2007
2	BahawalNagar	41.5	30/2022	40.5	21/2010
3	Bahawalpur	41.0	(02)/2022	41.0	25/1959
4	Balakot	34.0	18/2022	34.0	31/2018
5	Barkhan	35.7	18/2022	35.0	20/2010
6	Chilas	33.5	18/2022	31.0	22/1974
7	Dir	32.0	18/2022	31.0	31/2018
8	Faisalabad	38.5	18/2022	38.0	31/2018
9	Gilgit	31.0	18/2022	30.0	31/2017
10	Gupis	24.5	18/2022	24.0	20/2010
11	Islamabad Zero Point	35.6	18/2022	34.5	31/2018
12	Kakul	31.5	18/2022	30.0	31/2018
13	Kalat	30.0	(02)/2022	29.0	28/2021
14	Karachi Airport	42.5	31/2022	42.2	20/2010
15	Khanpur	43.0	29/2022	42.0	31/2018
16	Khuzdar	36.5	17/2022	35.5	31/2018
17	Multan	40.2	29/2022	39.5	23/2010
18	Murree	27.2	18/2022	26.0	26/2000
19	Muzaffarabad	38.5	18/2022	37.0	25/1977
20	Quetta Samanguli	31.5	18/2022	31.1	19/2010
21	Quetta Sh. Manda	32.5	18/2022	32.0	09/2004
22	Rahim Yar Khan	43.5	30/2022	43.0	31/2018
23	Shaheed Benazirabad	45.5	(02)/2022	45.5	(02)/2021
24	Sibbi	43.0	(02)/2022	42.6	22/2010
25	Zhob	36.0	18/2022	33.5	(03)/2021

National weather extremes during March 2022

Hottest day	45.5 °C	at Sh. Benazirabad (Sindh) on the 27 th & 28 th
Coldest day	2.0 °C	at Babusar (GB) on the 3 rd
Coldest night	-5.7 °C	at Kalam (KP) on the 1 st
Warmest night	25.5 °C	at Karachi Airport (Sindh) on the 29 th
Wettest day	72.0 mm	at Muzafarabad City (AJK) on the 7 th
Wettest month	125.3 mm	at Kakul (KP)

Synoptic Summary

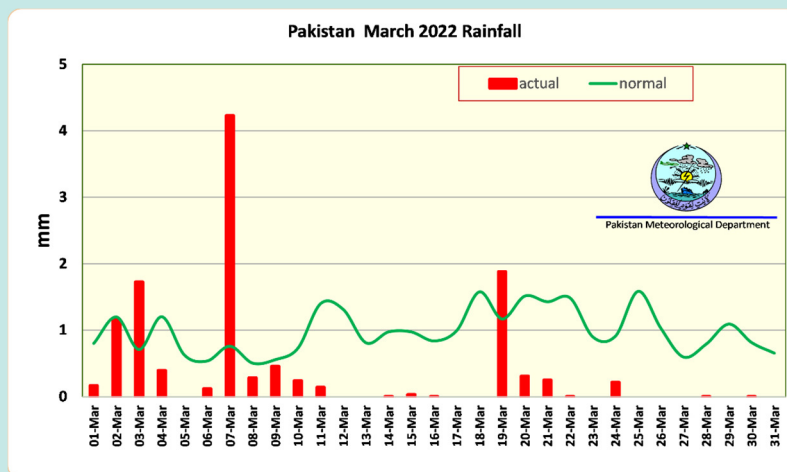
A trough of low pressure persisted over Gilgit-Baltistan (GB) through the 1st day of month to 15th March. While, another low-pressure area prevailed over North-Northwest Balochistan during the entire month. A Heating low-pressure area formed over Southern Punjab and adjoining areas on 14th continued to persist till 19th and converted to a trough the next day. A fresh low-pressure area formed over Khyber Pakhtunkhwa (KP) on 15th March, persisted for next two days and then reduced to a trough, while a fresh trough prevailed over upper KP on 22- 25 March and moved away east wards on 26th. On the other hand, a low-pressure area developed over GB and adjoining areas on 26 March which ultimately reduced into a trough and persisted over there till the end of the month.

March, 2022 area-weighted rainfall

	Rank (of 62)	Normal (mm)	Average (mm)	Departure (percent)	Comment
Pakistan	09	30.5	11.6	-62.0	9th driest on record.
Azad Jammu & Kashmir	12	93.2	48.3	-48.1	---
Balochistan	15	20.5	7.0	-66.0	---
Gilgit Baltistan	26	29.7	17.6	-40.7	---
Khyber Pakhtunkhwa	07	96.1	32.7	-65.9	7th driest on record.
Punjab	09	28.0	9.8	-65.0	9th driest on record.
Sindh	32	4.7	1.6	-64.7	----

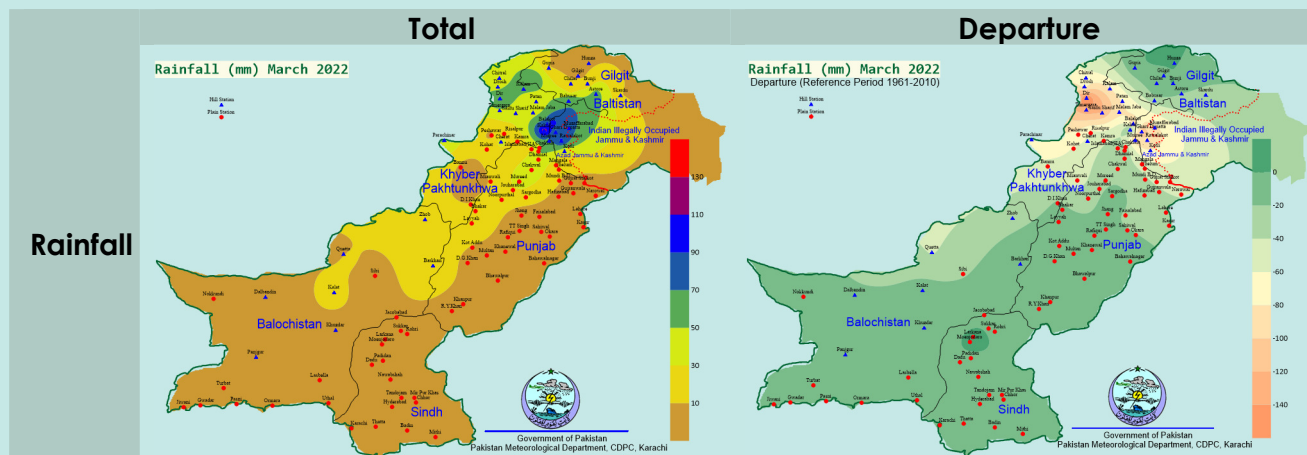
Rank ranges from 1 (lowest) to 62 (highest)

Rainfall – largely below average over the country.



During March 2022, only a couple of light rainfall events were experienced. March 2022 rainfall was 62% below average for Pakistan as a whole and ranked ninth driest March on record for the country during 1961-2022. Climatologically, the month of March happens to be the 3rd wettest month across Pakistan. However the march 2022 was found to be the largely deficient-rain month with only 11.6 mm (area-weighted) rain against its normal of 30.5 mm. On average, the March rainfall contribution is of the order of 15.6% and only 3.9% to the Winter (JFM) and annual rainfall respectively.

March 2022 rainfall maps



On regional scale, all the regions/provinces witnessed dry conditions during the month. The least rainfall occurred in the province of Sindh (1.6mm/-64.7%). Situation in the other regions were not very different as Balochistan (7.0mm/-66%), Punjab (9.8mm/-65%) KP (32.7mm/-65.9%), AJK (48.3mm/-48.1%) and GB (17.6mm/-40.7%) all experienced extremely dry conditions. The wettest day of the month in the country was 7th March, when Muzaffarabad City (AJK) recorded 72.0mm of rainfall, whereas the wettest place was Kakul (KP) with highest monthly total 125.3mm. The other significant monthly total rain recorded were Muzaffarabad City (114.0mm), Muzaffarabad Airport (107.8mm), Rawalakot (95.1mm), Dir (73.0mm) and Balakot (72.2mm). The stations; Badin, Chhor, Hyderabad, Karachi Airport, Mithi, Shaheed Benazirabad, Thatta, MirpurKhas, Tandojam, Sakrand, Gawadar, Jiwani, Pasni, Sibbi and Masroor remained absolutely dry with no rain during the month. Whereas the stations; Multan city, Nokkundi and Ormara reported only traces of rainfall.

Temperatures– Warmer night, day, mean temperatures observed over the country.

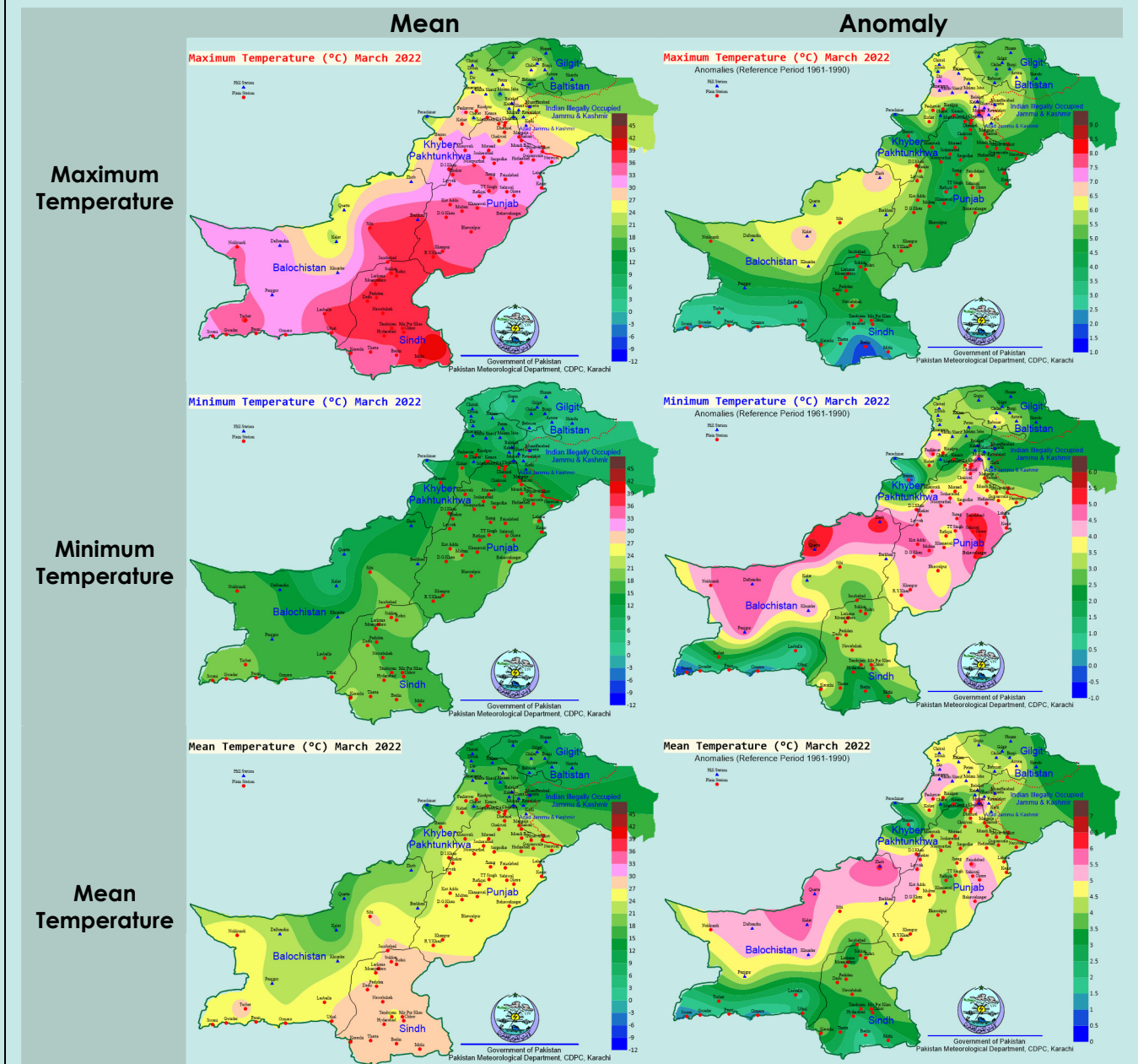
The national mean monthly temperature of March 2022 for Pakistan as a whole was 22.92 °C, being 4.26 °C warmer than average of 18.66 °C and as such set as the most warmest month on record since 1961, keeping in view of the last warmest mean temperature of 22.61 °C recorded in 2010. Similarly on regional scale, March 2022 has become warmest month in AJK with 15.71°C (last record was 15.54 °C in 2004), Balochistan with 23.18°C (last record was 22.76 °C in 2010) and Punjab with 24.75 °C (last record was 24.14 °C in 2010). The other regions also observed second warmest March on record i.e. GB with 12.55 °C (the record is 13.16 °C /2013), KP with 20.08 °C (the record is 20.15 °C /2010) and Sindh with 27.73 °C (the record is 28.05 °C in 2010). The mean temperature anomalies

in Balochistan (+4.34 °C), GB (+3.78 °C), Sindh (+3.33 °C), AJK (+4.26 °C), KP (+4.47 °C) and Punjab (+4.54 °C) showed warmer than average temperatures for the month.

The mean maximum (day) temperature in March 2022 at country-level was 30.89 °C, the 2nd warmest maximum temperature on record (the record is 31.09 °C in 2004), being 5.01 °C warmer than average of 25.88 °C. The night (minimum) temperature in March 2022 was 14.95 °C, which now is the warmest minimum since 1961 (last being 14.57 °C in 2010) , being 3.52 °C warmer than country-average of 11.43 °C.

The mean temperature anomalies of March 2022 lie between 0.6 to 7 °C in the country. The Mean Minimum temperature anomalies were -1 to 6.5°C in the country. The minimum temperature anomalies over Punjab and Northern and western Balochistan were considerably higher. The hottest day of the month was at Shaheed Benazirabad (Sindh) when it recorded 45.5 °C temperature on 27th & 28th March. The coldest temperature of -5.7 °C of the month was recorded at Kalam (KP) on 1st March 2022.

March 2022 Temperature maps



March 2022 Monthly Averages & Normals

Station	Pressure (mb)		Temperature (°C)			Vapour (mb)	Precipitation	
	Station Level	Sea Level	Mean	Maximum	Minimum	Pressure	Total (mm)	Days
Drosh	855.0	1512.8	14.0	21.8	8.0	7.4	41.8	7
	855.5	1509.1	10.4	15.9	4.7	6.1	115.6	12.5
Peshawar	974.2	1011.5	22.9	31.0	14.3	15.3	5.2	3
	971.3	1012.7	17.5	23.7	11.0	11.6	83.3	10.4
Parachinar	829.0	1515.6	12.0	20.0	5.3	6.0	42.0	6
	827.3	1501.3	9.5	14.9	2.8	6.1	136.6	12.4
Rawalpindi	954.0	1011.2	21.9	28.5	15.1	12.4	59.5	4
	954.2	1012.3	17.0	23.7	10.1	10.8	97.1	10.6
Sargodha	988.5	1009.4	25.4	32.8	17.7	20.6	19.0	2
	990.5	1012.1	20.0	27.2	12.5	13.2	32.4	8.4
Jhelum	982.8	1009.5	23.6	31.8	15.7	16.6	12.4	3
	984.5	1011.6	19.4	26.3	12.5	12.5	68.8	9.2
Sialkot	980.8	1009.9	22.8	30.3	15.3	17.6	2.4	1
	982.5	1011.9	18.8	25.4	11.9	13.3	53.4	7.3
Zhob	857.5	1480.8	19.8	27.2	12.8	7.3	15.0	2
	857.6	1478.9	14.3	20.2	7.0	6.8	47.6	4.9
D.I.Khan	989.9	1009.5	25.0	33.0	17.1	17.6	16.0	1
	991.7	1011.2	19.9	26.5	12.7	13.1	37.4	7.4
Lahore	985.3	1009.6	25.6	31.5	18.5	16.9	5.4	1
	986.7	1011.4	20.8	26.9	14.2	13.2	38.4	7.4
Quetta	843.3	1521.0	17.4	24.2	9.1	4.7	6.0	4
	841.0	1500.7	11.6	18.1	3.6	7.2	61.7	7.3
Multan	995.3	1009.3	26.3	33.5	18.3	16.4	3.5	1
	997.3	1011.7	21.2	28.2	13.4	13.3	16.6	3.3
Barkhan	890.3	1497.6	22.5	29.4	15.0	8.1	30.0	2
	891.4	1490.9	17.5	23.3	11.1	7.7	31.4	3.3
Nokkundi	932.9	1007.5	25.6	33.1	17.1	5.8	0.0	0
	934.8	1011.2	20.1	26.9	11.9	8.6	7.3	1
Dalbandin	917.3	1505.2	24.2	32.0	14.7	9.6	1.0	1
	917.8	1499.9	18.8	25.7	9.1	7.4	12.4	1.5
Jacobabad	1002.9	1009.2	27.6	35.6	18.8	18.8	7.0	2
	1004.6	1010.9	24.2	30.9	16.2	12.6	10.6	1
Khanpur	998.8	1008.9	26.4	35.5	17.1	17.5	0.2	0
	1000.7	1011.0	21.6	29.7	12.6	13.1	3.6	1.8
Panjgur	902.5	1497.5	23.7	30.1	15.8	11.0	8.0	2
	904.1	1503.3	18.7	25.0	10.9	5.3	17.7	1.4
Khuzdar	877.9	1510.4	22.8	29.8	15.4	6.3	6.4	2
	875.6	1482.0	17.8	23.5	10.4	3.6	26.0	1.7
Nawabshah	1005.9	1009.2	28.4	38.6	17.6	16.0	0.0	0
	1007.6	1011.4	23.9	33.0	13.9	15.3	2.4	0.1
Jiwani	1005.0	1011.5	24.9	30.7	17.8	21.4	0.0	0
	1005.9	1012.4	23.6	28.2	18.3	18.6	15.4	0.9
Pasni	1011.0	1011.6	25.2	32.4	18.0	21.1	0.0	0
	1011.1	1012.6	22.6	29.8	16.6	16.5	21.0	0.8
Hyderabad	1004.5	1009.4	28.5	36.8	20.5	15.6	0.0	0
	1007.0	1011.0	26.2	33.4	18.5	13.4	2.5	0.3
Chhor	1008.7	1009.4	28.6	38.7	17.8	15.7	0.0	0
	1009.7	1010.3	25.1	34.6	14.2	13.5	0.8	0.2
Karachi	1007.8	1010.5	28.1	35.5	21.6	19.3	0.0	0
	1009.2	1011.9	24.9	31.7	17.7	17.0	6.6	0.8

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

March 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	20.7	17	6.1	6	28.5	17	1.7	1	23.6	7	14	12*
Peshawar	27.5	17	16.1	6	37.5	16*	9.0	1	2.2	19	4	3*
Parachinar	19.5	30	4.5	8*	28.0	30	-2.0	9	20.0	9	8	15*
Rawalpindi	25.9	18*	13.3	3	34.5	18	7.5	4	35.4	7	20	16*
Sargodha	29.8	17	18.2	3	39.5	17	10.3	1	14.0	7	8	6
Jhelum	28.5	17	14.6	3	38.0	17	8.9	1	6.2	7	8	6
Sialkot	27.2	19	14.1	3	35.8	27	8.7	1	2.4	4	8	3*
Zhob	26.8	17*	11.3	2	36.0	18	6.5	1	10.0	7	11	18
D.I.Khan	30.0	31	17.0	7	39.0	31	11.5	3*	15.8	7	8	19*
Lahore	29.5	31	16.7	3	37.0	17*	11.6	4	5.4	4	8	3*
Quetta	22.3	17	10.0	3	31.5	18	3.0	3	3.0	7	22	7*
Multan	31.3	28	16.5	2	40.2	29	12.2	3	3.5	3	12	6*
Barkhan	27.4	16*	12.0	2	35.7	18	6.5	3	27.0	3	4	1*
Nokkundi	30.0	14	20.0	2	39.0	15	10.5	31	0.0	0	20	29*
Dalbandin	28.0	15	18.5	2*	38.5	16	10.0	3	1.0	2	12	7*
Jacobabad	32.3	29	19.0	2	42.5	28*	12.5	3	5.0	2	6	30*
Khanpur	31.4	28	18.3	3	43.0	29	10.0	3	0.2	3	6	7*
Panjgur	27.2	15	17.8	2*	35.5	15	10.5	3	5.0	2	18	29
Khuzdar	27.5	29	16.0	2	36.5	17	10.0	2*	4.0	11	6	31
Nawabshah	32.3	16*	22.3	1*	45.5	28*	13.5	1	0.0	0	14	22
Jiwani	28.5	31	21.3	2	36.0	30*	15.0	2*	0.0	0	16	18*
Pasni	30.0	25	20.8	3	39.0	25	14.5	3*	0.0	0	22	29
Hyderabad	33.2	29	23.0	2*	43.3	29	16.7	4	0.0	0	18	18
Chhor	32.6	30	22.9	2	44.2	30	12.5	1*	0.0	0	12	18
Karachi	32.5	31	25.3	1*	42.5	31	18.0	1	0.0	0	12	2*

* means value occurred multiple times the actual values while second row for normal values

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

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