

Government of Pakistan Pakistan Meteorological Department Pakistan Monthly Climate Summary May 2024

In brief

- National area-weighted rainfall, 5.0 mm of May 2024 was **excessively below average (-66%)** and stands as the second driest May since 1961 (the driest ever is 3.6 mm recorded in 1988). The regions in all too recorded **excessively below average rainfall**.
- The heaviest one-day rainfall of 56.0 mm occurred at Kakul (KP) on 13th and coincidently, the same station also has been the wettest place with monthly total rainfall of 63.0mm.
- The national mean monthly temperature of 30.44 °C for Pakistan (with +1.50 °C anomaly) was warmer than country-average of 28.94 °C.
- The daytime (maximum) temperature at the country-level was 38.33 °C (with +2.07°C anomaly) was also significantly warmer than the country average of 36.26 °C.
- The nighttime (minimum) temperature at country level was 22.49 °C (with +1.37°C anomaly) was also warmer than the countrywide average of 21.12 °C.
- The hottest day of the month was observed at Mohenjo-Daro (Sindh) when it recorded a maximum temperature of 52.5 °C on 26th May. Whereas Jacobabad (Sindh) found to be the warmest place with a mean monthly maximum temperature of 46.7 °C.
- The coldest night temperature (-1.5°C) of the month was recorded at Kalam (Khyber Pakhtunkhwa, KP) on 1st May 2024, which too happened to be the coolest place with mean monthly minimum temperature of 6.8 °C.
- The El Niño–Southern Oscillation (ENSO) has turned into a neutral phase (neither La Niña nor El Niño) with sea surface temperatures (SSTs) being around -0.1°C over the central equatorial Pacific. International models forecast further cooling of the central and eastern equatorial Pacific in the months ahead.
- the Indian Ocean Dipole (IOD) has turned into positive phase.

Table-1: National Weather Extremes during May 2024

Hottest day	52.5	Mohenjo Daro (Sindh) on 26 th
Coldest day	14	Astore (GB) on 1 st
Coldest night	-1.5	Kalam (KP) on 1 st
Warmest night	36	Sibi (Balochistan) on 28 th & 29 th
Wettest day	56.0 mm	at Kakul (KP) on the 13 th
Wettest month	63.0 mm	at Kakul (KP)

Synoptic Summary

In May, four shallow westerly waves approached the country during 2-6,10-12,16-21, and 24-25 May which gripped upper Khyber Pakhtunkhwa (KP), Gilgit-Baltistan (GB), Kashmir, parts of north Punjab and Balochistan. Resultantly, few moderate to rather heavy falls with dust-thunderstorm occurred at scattered places in KP, GB, Kashmir and few places over Punjab & North Balochistan during the period. Rest of the country remained under the influence of dry continental air during most of the month. In the mid of the month Seasonal (Heat) low developed over North-Northwest Balochistan which prevailed till month's end with another low formed over eastern Sindh during 23-29 May. A severe heatwave struck the plain areas of Punjab, Sindh and northeast & south Balochistan from 23rd May with daytime maximum temperatures shot up to 50-52C in upper Sindh and south Punjab on 26 May. The heatwave condition persisted until the end of the month.

Table-2: New Weather Records Set in May 2024											
C No	S No Stations	Weather Devenators	N	lew Record	Ol	d Record	No of years				
5 10		weather Parameters	Value	Date	Value	Date	examined.				
1	BANNU	Coldest night Temperature (°C)	12.5	01/May/2024	13.0	13/May/2014	26				
2	RISALPUR	Coldest night Temperature (°C)	11.0	01/May/2024	11.0	07/May/1960	71				
3	Kalam	Coldest night Temperature (°C)	-1.5	01/May/2024	1.0	05/May/2005	22				
4	MIRPUR KHAS	Hottest night Temperature (°C)	28.5	28/May/2024	28.5	21/May/2010	21				
5	PANJGUR	Hottest night Temperature (°C)	29.0	30&31/May/2024	28.3	23/May/1970	64				
6	SUKKUR	Hottest night Temperature (°C)	34.0	25/May/2024	32.4	23/May/2004	28				
7	JACOBABAD	Hottest day Temperature (°C)	52.0	26/May/2024	52.0	27/May/1914	96				
8	KHANPUR	Hottest day Temperature (°C)	50.2	26/May/2024	49.2	28/May/2010	73				
9	TANDOJAM	Hottest day Temperature (°C)	47.5	27/May/2024	47.5	20/May/2010	17				

Table-3: Significant Winds

Date	Station	Max Wind Knots	Date	Station	Max Wind Knots	Date	Station	Max Wind Knots	Date	Station	Max Wind Knots
17/2024	Peshawar City	42	24/2024	Jhelum	32	10/2024	Lahore AP	30	10/2024	Kasur	55
09/2024	Peshawar AP	30	24/2024	Sialkot AP	38	11/2024	Lahore AP	60	28/2024	Panjgur	30
20/2024	Peshawar AP	36	24/2024	Faisalabad	30	24/2024	Lahore AP	55	14/2024	Chhor	36
24/2024	Peshawar AP	40	10/2024	Jaharabad	50	24/2024	Gujranwala	32	24/2024	Kotli	30
31/2024	Rawalpindi	30	10/2024	T.T. SINGH	32	24/2024	Narowal	34	17/2024	Peshwar BKIA	40
12/2024	Islamabad AP	41	24/2024	T.T. SINGH	34	17/2024	Quetta AP	32	20/2024	Peshwar BKIA	30
17/2024	Islamabad AP	31	11/2024	Lahore City	35	27/2024	Quetta AP	34			
24/2024	Islamabad AP	44	24/2024	Lahore City	35	10/2024	Multan AP	33			

Rainfall: Excessively Below average in the country.

Climatologically, the May rainfall contribution to the annual national total and to the Pre-Monsoon (AMJ) is 5.0% and 26.6%, respectively. During the month, Pakistan experienced 3 to 4 light to moderate rain spells. The daily area-averaged rainfall is shown in Fig-1. May 2024 rainfall was excessively below average with only 5.0mm (-66%) for Pakistan as a whole and ranked as the 2nd driest May (the driest ever is 3.6mm in 1988). Situation was similar on regional scale too, i.e. AJK with 14.20mm (-76%) ranked as the 2nd driest May (the driest ever is 10.8mm in 1988). Sindh with 0.0mm (has been so for 13 times in the past 64 years), KP with 17.6 (-59%) being 4th driest, Punjab with



4.8mm (-69%) being 7th driest, GB with 5.5mm (-80%) being the 9th driest, and Balochistan with 6.0mm (-52%) all recorded excessively below-average rainfall (Table -4).

The wettest day of the month in the country was 13th May when 56.0mm rainfall was recorded at Kakul (KP). Coincidentally, the same place was the wettest place with a monthly total rainfall of 63.0mm (Table-1).

Table-4: May	2024 Area	-Weighted	Rainfall
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Region	Rank (of 64y)	Normal (mm)	Average (mm)	Departure (percent)	Comment
Pakistan	02	14.9	5.0	-66	2 nd driest (the driest ever is 3.6 mm/1988)
Azad Jammu & Kashmir	02	60.4	14.2	-76	2 nd driest (the driest ever is 10.8mm/1988)
Balochistan	25	6.0	2.9	-52	25 th driest (0.0 mm rainfall in 1984 &1978)
Gilgit Baltistan	09	27.5	5.5	-80	9 th driest (the driest ever is 1.4mm/2006)
Khyber Pakhtunkhwa	04	43.4	17.6	-59	4 th driest (the driest ever is 15.7 mm/2002)
Punjab	07	15.6	4.8	-69	7 th driest (the driest ever is 1.1 mm/1984)
Sindh		2.9	0.0	-100	0.0mm rainfall in May has been recorded
					in 13 different years

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The other notable rainfalls recorded in May 2024 were Kalam 61.0 mm, Malam Jabba 61.0 mm, Dir 53.4 mm, Mirkhani 43.0 mm, Chakwal 41.7 mm, Rawalakot 41.4 mm, Kotli 39.0 mm, Bannu 38.0 mm and Drosh 37.2 mm. The stations Bahawalnagar, Bahawalpur, Khanpur, Multan City, Mangla, Rahim Yar Khan, Khanewal, Badin, Chhor, Hyderabad Airport, Jacobabad, Karachi A/P, Larkana, Mithi, Sh.B.Abad, Padidan, Rohri, Sukkur, Mohenjo Daro, Thatta, Dadu, Mirpur Khas, Tando Jam, Sakrand, Khairpur, Gawadar, Jiwani, Lasbela, Pasni, Sibbi, Turbat, Ormara, Faisal Base and Masroor, remained absolutely dry with no rain during the month. The stations: Kot Addu, Kamra Airbase, Mandi Bahauddin, Multan Airport, Peshawar City, Bacha Khan A/P and Takht Bai recorded only traces of rainfall during the month.

May 2024 Rainfall maps



Fig. 2. May-2024 spatial rainfall distribution and departure from normal

Area Averaged Temperatures (°C) in May 2024 and anomalies from normal 1961-1990											
D i	Maximun	n Temperature	Minimum	Temperature	Mean Temperature						
Regions	Actual	Anomaly	Actual	Anomaly	Actual	Anomaly					
Pakistan	38.33	+2.07	22.49	+1.37	30.44	+1.50					
Azad Jammu & Kashmir	31.13	+3.20	15.59	+1.21	23.37	+2.19					
Balochistan	37.88	+1.55	22.49	+1.17	30.22	+1.07					
Gilgit-Baltistan	28.77	+3.42	13.06	+1.14	20.93	+2.27					
Khyber Pakhtunkhwa	34.48	+2.21	18.79	+0.84	26.66	+1.60					
Punjab	41.56	+2.46	25.01	+1.89	33.32	+1.85					
Sindh	42.79	+1.71	26.60	+1.37	34.71	+1.51					

Table 5: Significantly above average Temperatures observed in the country.

The May 2024 national mean temperature of 30.44 °C for Pakistan was +1.50 °C warmer than the country-average of 28.94 °C. A similar situation prevailed at regional scale: Sindh with 34.71°C (+1.51°C) recorded the 5th warmest May (record is 35.21°C in 2010), AJ&K with 23.37°C (+2.19°C) and GB with 20.93°C (+2.27°C) both recorded the 10th warmest May since 1961 (record is 24.86°C in 2000 & 23.04°C in 2001 respectively). Punjab with 33.32°C (+1.85°C) and Balochistan with 30.22°C (+1.07°C), too exhibited significantly warmer than average temperatures. (Table-5, Fig. 3 lower panel). The mean temperature anomalies of May 2024 were in range -1.5 to 5.1°C in the country.

May 2024 mean-maximum (daytime) temperature of 38.33°C recorded at country-level with a positive anomaly of +2.07 °C than the country average of 36.26°C. These were so (mostly in first-tenth highest temperature range) in all the regions as well (Table-5, Fig. 3 upper panel). The Mean maximum temperature anomalies were -0.2 to +4.4 °C in the country with those being considerably higher over AJ&K and GB.

The night (minimum) temperature of 22.49 °C (with -1.37 °C anomaly) was also above than average of 21.12 °C during the month. Similarly, above-average temperatures were observed in the regions too (Table-5, Fig-3, middle panel). The hottest day of the month was at Mohenjo-Daro (Sindh) when it recorded 52.5 °C temperature on 26th May and the Jacobabad (Sindh) happened to be the warmest place with 46.7 °C average maximum temperature during the month. Kalam (KP) recorded the month's coldest night temperature of -1.5 °C on 1st May and incidentally been the coolest place with 6.8 °C average minimum temperature.



May 2024 Temperature maps

Table 6: May 2024 Monthly Averages & Normals

_	Prossure	(mb)		Tomporaturo	(°C)	Vapour	Brocipitation	
Station	Station	(IIID) Soci	Mogn	Maximum	Minimum	Prossure	Total	Dava
	Sidiion	Sea	Mean	Maximum		riessure	10101	Days
Drosh	851.1	1474.6	21.9	29.8	13.9	9.3	37.2	8.0
	852	1472.7	22.5	29.4	15.4	9.1	67.0	10.2
Peshawar	967.8	1003.9	30.0	38.2	21.8	17.9	0.0	0.0
	962.7	1002.0	29.1	36.6	21.5	16.1	23.8	1.2
Parachinar	827.2	1489.7	21.3	28.8	13.7	10.8	26.0	4.0
	827	1466.1	19.7	26.6	12.9	9.6	/3.5	11.9
Rawalpindi	948	1003.2	30.0	36.8	23.1	13.7	18.0	3.0
	946.6	1002.2	27.5	35.6	20.1	14.5	34.1	8.3
Saraodha	981.4	1001.4	33.6	41.9	25.4	18.2	22.2	2.0
	981.3	1001.8	31.5	39.7	23.5	17.3	19.1	6.1
lhelum	975.9	1001.7	31.4	40.0	22.8	19.3	1.2	1.0
511010111	975.4	1001.5	30.5	38.4	22.6	16.0	27.3	7.0
Sialkot	974	1002.0	31.6	39.5	23.7	21.3	3.0	1.0
JUNCI	973.8	1001.8	30.0	37.9	22.1	15.8	25.7	5.8
7hoh	854.2	1448.3	27.1	34.0	20.2	10.1	5.0	1.0
21100	853.8	1433.8	25.5	32.8	18.2	9.4	16.9	1.7
DIKhan	982.6	1001.4	33.6	41.6	25.5	19.0	2.0	1.0
D.I.KIGH	982.4	1001.0	31.2	39.0	23.4	17.7	17.0	3.4
Labore	978.4	1001.8	33.3	40.7	25.8	17.4	6.0	2.0
LUHUIE	977.6	1001.2	31.7	38.9	24.5	16.7	20.8	5.7
Quetta	840.5	1491.2	23.6	30.9	16.4	6.8	5.0	2.0
Quena	837.8	1466.3	21.6	30.8	12.4	9.9	5.5	2.8
Multan	987.8	1001.3	34.9	42.7	27.1	16.9	0.0	0.0
Monan	987.4	1000.9	32.8	40.8	24.8	17.9	11.5	2.5
Barkhan	885.9	1464.0	29.7	36.7	22.6	8.9	3.0	2.0
DUINIUII	885.4	1459.3	28.7	35.1	22.1	11.4	20.3	2.4
Nokkundi	928.4	1000.5	33.7	40.6	26.7	7.6	2.0	1.0
NORKONUI	928.6	1001.4	31.2	39.4	24.0	11.5	0.3	0.2
Dalbandin	912.9	1482.6	31.2	39.5	22.8	10.1	2.0	1.0
Daibanain	912.1	1473.0	29.6	37.7	19.2	8.5	1.6	0.8
lacobabad	995	1001.1	36.8	46.7	26.8	16.9	0.0	0.0
JUCODUDUU	994.4	1000.7	35.2	43.4	26.9	18.2	3.1	0.8
Khappur	991.5	1001.2	35.4	44.6	26.1	21.3	0.0	0.0
Kildiipoi	991.1	1000.8	32.7	41.7	23.6	19.0	4.9	1.2
Paniaur	899.1	1477.6	30.7	37.4	24.0	12.4	2.0	1.0
i unjgor	899.4	1476.4	28.9	36.5	21.3	8.1	2.5	0.3
Khuzdar	874.6	1483.8	28.8	36.2	21.3	8.7	0.6	0.0
KIIOZOGI	871.5	1450.3	27.9	35.0	20.6	4.5	13.2	1.5
Sh.	999.1	1002.4	35.6	45.2	26.0	23.6	0.0	0.0
Benazirabad	998.3	1001.9	34.1	43.7	24.5	23.9	1.5	0.4
liwani	998.9	1005.2	29.5	35.5	23.4	30.4	0.0	0.0
Siwarii	998.1	1004.4	29.6	34.2	25.1	28.4	0.2	0.1
Pasni	1004.2	1004.7	30.8	36.3	25.2	31.7	0.0	0.0
	1002.9	1003.6	29.1	35.4	24.3	27.6	0.7	0.1
Hyderabad	998	1002.7	34.7	42.4	27.1	23.6	0.0	0.0
nyuerubuu	998.6	1002.5	33.4	41.4	26.1	24.5	4.6	0.5
Chhor	1002	1002.7	34.7	43.3	26.1	26.5	0.0	0.0
CHHOI	1001.7	1002.3	33.2	41.8	24.6	23.5	7.2	0.5
Karachi	1001.7	1004.4	32.7	37.2	28.1	29.6	0.0	0.0
Kuluchi	1001.8	1004.3	30.8	35.3	26.2	28.4	0.2	0.1

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

Table 7: I	May 202	24 extr	eme vo	lues								
STATION	Me	an Temp	erature (°C	:)		ture (°C)		Highest (mm & knots)				
STATION	Highest	Date	Lowest	Date	Highest	Date	Lowest	Date	Rain	Date	Wind Speed	Date
Drosh	29.2	29	12.9	4	36.6	29	5.4	1	15	12	12	31
Peshawar	36.5	28	21.9	1	43.5	27	13.0	1	0	0	12	28
Parachinar	27.3	31	14.5	1	36.0	31	6.5	1	14	12	12	26
Rawalpindi	34.3	28	22.5	1	40.8	27*	14.6	1	14	11	30	31
Sargodha	37.8	27	24.3	1	47.2	27*	14.2	1	20.2	11	6	10*
Jhelum	35.8	30	23.6	1	46.0	29*	15.9	1	1.2	13	12	25
Sialkot	35.3	29	23.9	1	44.8	29	16.5	1	3	25	15	10
Zhob	30.8	27	20.4	1	37.5	24*	13.0	1	5	12	9	17*
D.I.Khan	37.8	26	25.0	1	48.0	26	15.5	1	2	12	6	9*
Lahore	38.1	29	23.5	1	45.5	28	16.0	1	3.8	12	15	10
Quetta	28.6	27	15.6	1	36.0	25	8.0	1	3	19	34	27
Multan	39.1	26	25.6	1	48.8	27	16.5	1	0	0	16	10
Barkhan	35.8	28	21.5	1	41.5	27*	12.5	1	2	11	6	28
Nokkundi	38.6	23*	25.3	1	45.0	23	16.0	1	2	17	14	31
Dalbandin	37.3	24	24.6	1	44.0	25*	10.7	4	2	6	8	23*
Jacobabad	42.4	26	29.5	1	52.0	26	18.0	1	0	0	6	25*
Khanpur	40.0	28	27.3	1	50.2	26	17.8	1	0	0	8	4*
Panjgur	34.8	27	23.0	1	42.0	25	14.5	1	2	19	30	28
Khuzdar	34.6	25*	20.9	3	41.5	26	12.0	1*	0.4	16	6	1*
Sh.Benazira bad	40.5	27	28.1	1	51.5	27	17.5	2	0	0	14	3*
Jiwani	33.8	31	28.0	4	42.0	31	20.0	1	0	0	16	3
Pasni	36.1	31	28.1	2	45.5	31	21.5	1*	0	0	20	3*
Hyderabad	37.4	27	31.1	1	47.5	27	23.0	2	0	0	28	20
Chhor	37.3	22*	30.4	1	47.5	23*	18.0	1	0	0	12	26*
Karachi	33.9	18	30.3	4	41.5	29	25.3	2	0	0	14	17*

* means value occurred multiple times

<u>Note</u>

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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