



Ministry of ecology and natural
resources of The Republic Of
Kazakhstan Republican State
Enterprise «Kazhydromet»

MONTHLY BULLETIN
ANOMALIES OF MEAN MONTHLY AIR
TEMPERATURE AND MONTHLY PRECIPITATION
ON THE TERRITORY OF KAZAKHSTAN
IN OCTOBER 2025

INTRODUCTION

The study of regional climate and continuous monitoring of its change is one of the priority tasks of the national hydrometeorological service of Kazakhstan RSE «Kazhydromet».

For the preparation of the bulletin used observation data on the network of meteorological monitoring RSE «Kazhydromet»: series of average monthly air temperatures and monthly precipitation totals in the period since 1941.

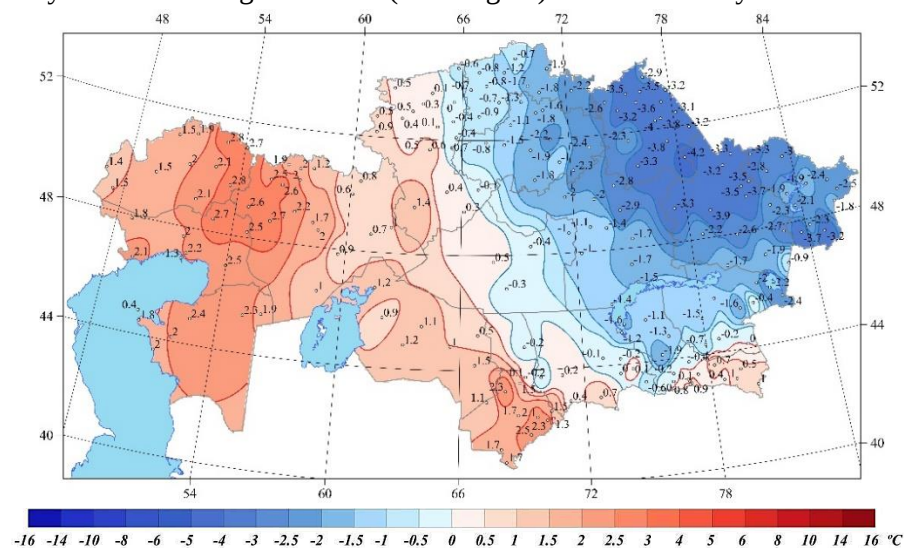
Anomalies of mean monthly surface air temperatures and monthly precipitation totals are determined relative to the norms - mean multiyear values calculated for the period 1991-2020, recommended by the World Meteorological Organization as a baseline for monitoring the degree of anomaly of the current climate. Air temperature anomalies are calculated as deviations of the observed value from the norm. Precipitation anomalies are presented in percent of the norm, that is as a percentage ratio of the amount of precipitation to the corresponding value of the norm.

To characterize climatic extremes, maps are given, where for each station the range of empirical probability of non-exceedance of the current value in the time series of the variable under consideration for the period from 1941 to the current year is given (empirical probability of non-exceedance is the fraction of time series values less than or equal to the current value). If the probability of non-exceedance of the current value of the variable falls into the extreme ranges (0-5 % or 95-100 %), it means that this value occurred in no more than 5 % of cases in the period from 1941. If we look at the amount of precipitation, the former indicates extremely low precipitation, the latter extremely high precipitation.

Responsible for the release:
Zh. Dyussenova – leading Researcher of DCR RC
N. Abdolla – leading Engineer of DCR RC

ANOMALIES OF MEAN MONTHLY AIR TEMPERATURE

In October, the average monthly air temperature across most of the country was both above and below normal (Fig. 1). Positive anomalies ranging from 1.0 to 2.8 °C were observed mainly in the western and southern parts of Kazakhstan and in the mountainous regions in the southeast of the country. 19 weather stations located in West Kazakhstan, Aktope, Atyrau, Mangistau, and Turkestan regions were classified as having a 5% extreme with an “extremely warm” classification (Fig. 2). The highest anomalies were observed in the West Kazakhstan region at the Aksai and Karatobe meteorological stations. The highest average monthly temperature in October (+16 °C) was recorded at the Shardara meteorological station in the Turkestan region. Negative anomalies were observed in the northern, central, eastern, and southeastern regions of Kazakhstan. In the above-mentioned areas, the probability of the air temperature not exceeding the norm was 5–25%. The largest negative anomaly was observed at the Semiyarka meteorological station (Abai region) with an anomaly of 4.2 °C.



MONTHLY PRECIPITATION

In October, most of Kazakhstan's area experienced a precipitation deficit (Fig. 3). Precipitation levels below 80% of normal were observed in the Aktobe, Kostanay, North Kazakhstan, Pavlodar, Akmola, Karaganda regions, the Ulytau, Abai, and Zhetisu regions, as well as in the Kyzylorda region. In the above-mentioned areas, values with a probability of not exceeding the range of 0–5% were recorded everywhere, which corresponds to the classification “extremely dry” (Fig. 4). Values above normal were observed only in the west and in some parts of the north and east of the country. Precipitation exceeding 180% of normal fell in the West Kazakhstan and Atyrau regions. Three weather stations located in these regions were classified as “extremely wet” with a probability of not exceeding 95–100% (Fig. 4). The most significant amount of precipitation fell on the Uralsk meteorological station (West Kazakhstan region) with 78,6 mm, which was 262% of the norm.

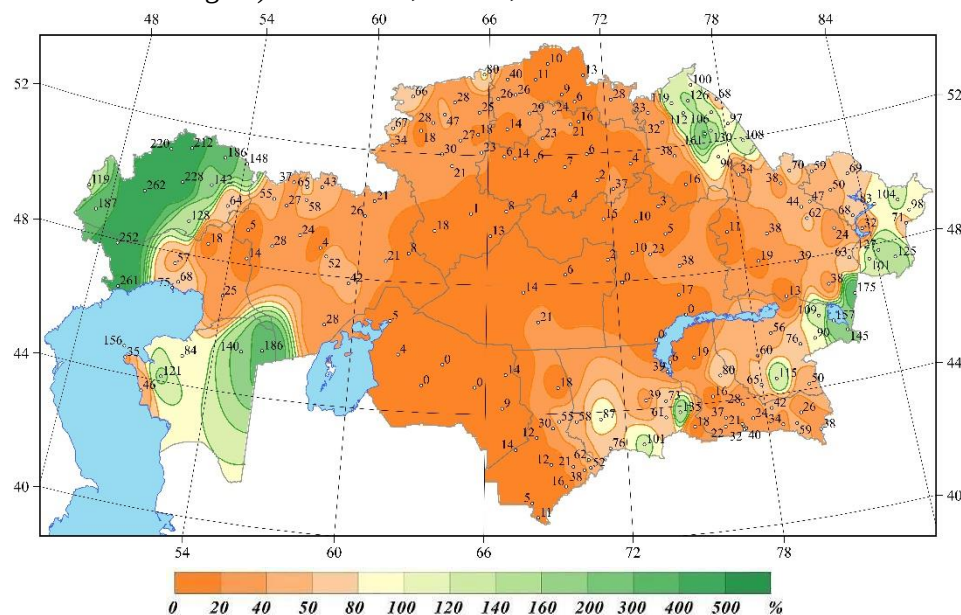


Figure 3 – Spatial distribution of precipitation in October 2025 (in % of the norm calculated relative to the base period 1991–2020)

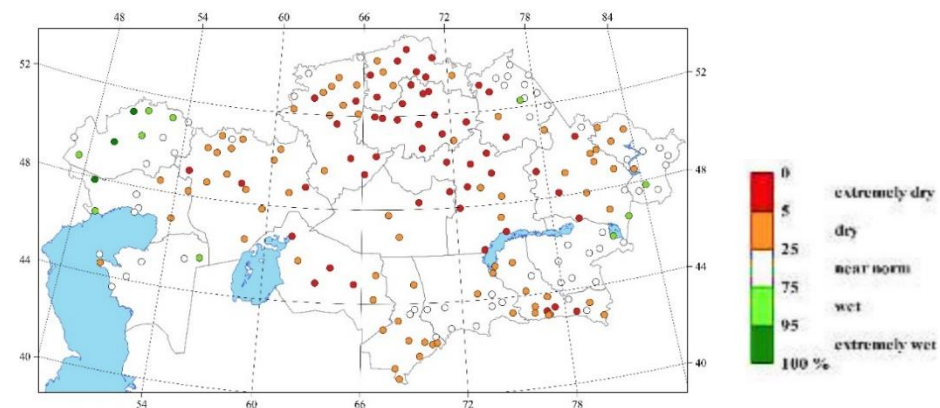


Figure 4 – Spatial distribution of probability of non-exceedance of precipitation in October 2025. Probabilities are calculated from data of the period 1941–2025