Republic Hydrometeorological Service of Serbia
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Republic of Serbia

MONTHLY BULLETIN FOR SERBIA

MAY 2025

Belgrade, the 5th of June 2025

Division for Climate Monitoring and Climate Forecast
Department of National Center for Climate Change, Climate Model Development and Disaster Risk Assessment
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AIR TEMPERATURE

Mean monthly air temperature

Cold May in most of the country. It ranks as the 17th coldest May with the anomaly of -1,4 ºC compared to the normal for the 1990-2020 base period (*Figure 1).* May 2025 was the 6th coldest for the period from 1986 to 2025 (*Figure 2*).

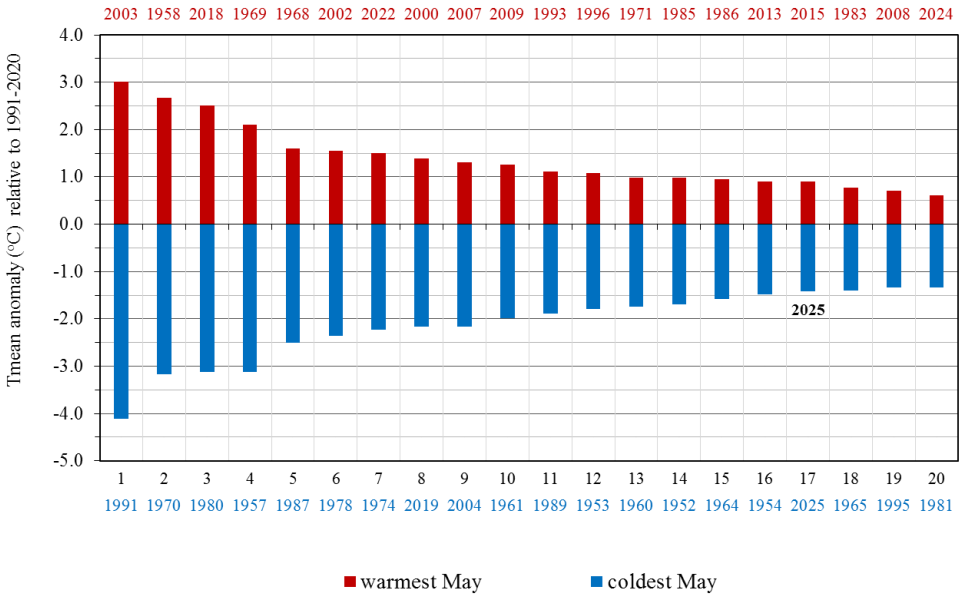


Figure 1. Rank of the warmest and coldest May in Serbia for the period from 1951 to 2025

May 2025 ranks as **the 6th warmest** for Loznica (*Figure 2*), **the 7th warmest** for Sombor *(Figure 3)* and **the 8th warmest** for Palic (*Figure 4*).

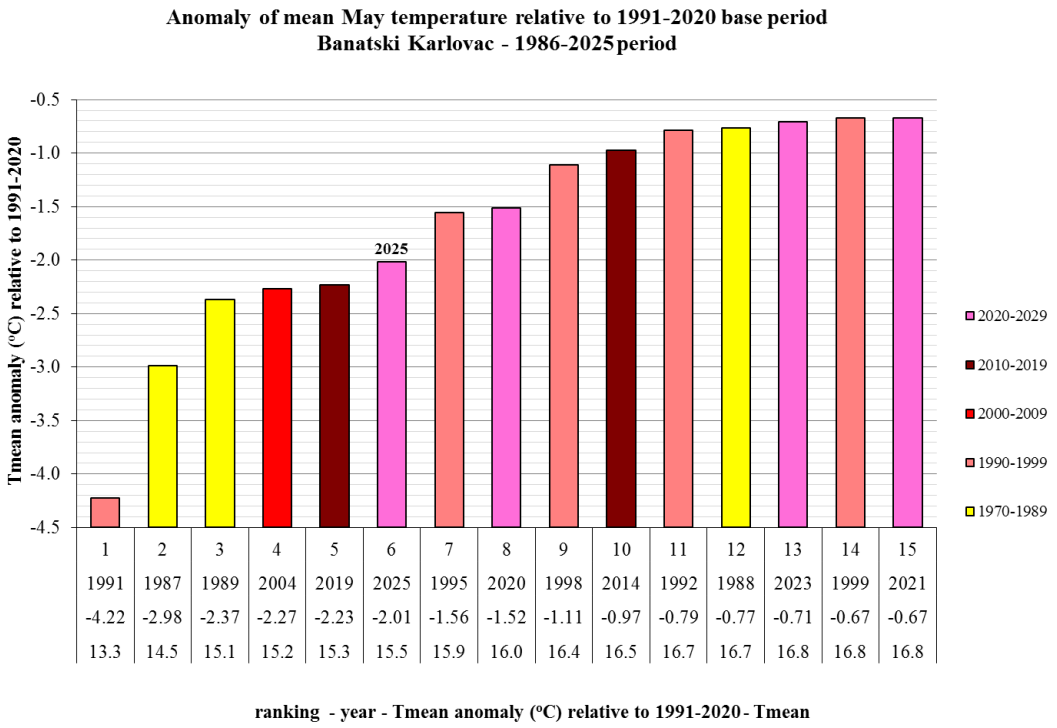


Figure 2. Rank of the coldest May in Banatski Karlovac

Mean air temperature in Serbia ranged from 14,0 ºC in Dimitrovgrad to 16,9 ºC in Negotin, and on the mountains from 6,0 ºC at Kopaonik to 11,2 ºC at Zlatibor (*Figure 3).* Belgrade observed air temperature of 16,8 ºC.

Departure of the mean air temperature from the normal [1] for the 1991–2020 base period ranged from -0,7 ºC in Kursumlija to -2,2 ºC on Palic (*Figure 4*).

Mean air temperature, based on the percentile method[2], was in the categories of cold and very cold in most of the country, and in the normal category in Kragujevac, Pozega, Kraljevo, Kursumlija and Krusevac (*Figure 5).*

[1] Term ***normal*** refers to ***climatological standard normal***, that is, the average value of a particular climate element, calculated for the period from January 1, 1991 to December 31, 2020

[2] **n**th percentile of a variable refers to the value of the observed variable below which there is n percent of data previously arranged in an ascending order

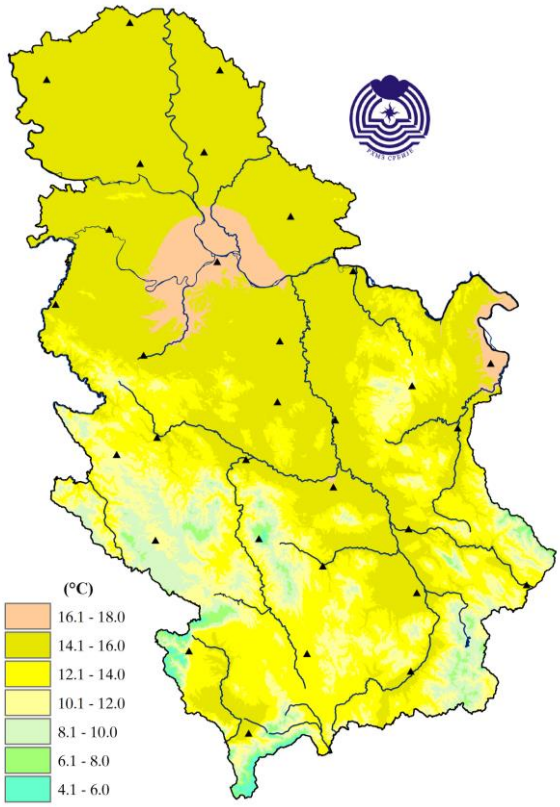


Figure 3. Spatial distribution of mean monthly air temperature (ºC)

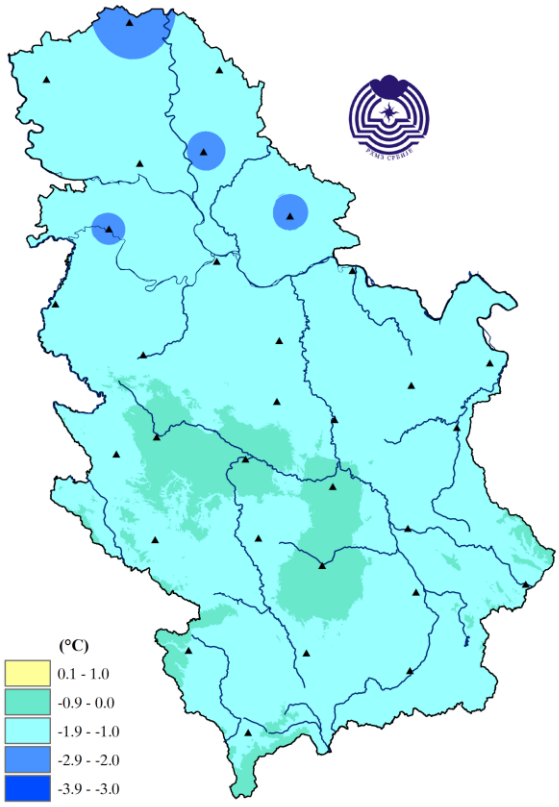


Figure 4. Spatial distribution of mean monthly air temperature anomaly (ºC)

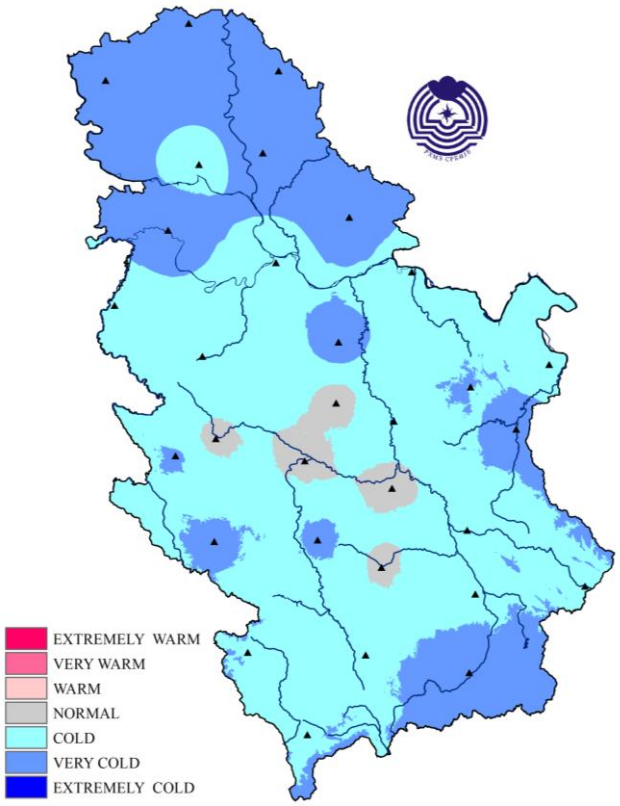


Figure 5. Spatial distribution of the mean monthly air temperature using percentile method

Mean daily air temperature in Belgrade, based on the percentile method, was in the categories of warm and very warm at the beginning of the month, then in the categories of cold and very cold most of May (*Figure 6*). Daily course of the mean daily air temperature and the accompanying percentiles for the stations Sombor, Novi Sad, Loznica, Negotin, Kragujevac, Zlatibor, Nis and Vranje are given in the Appendix.

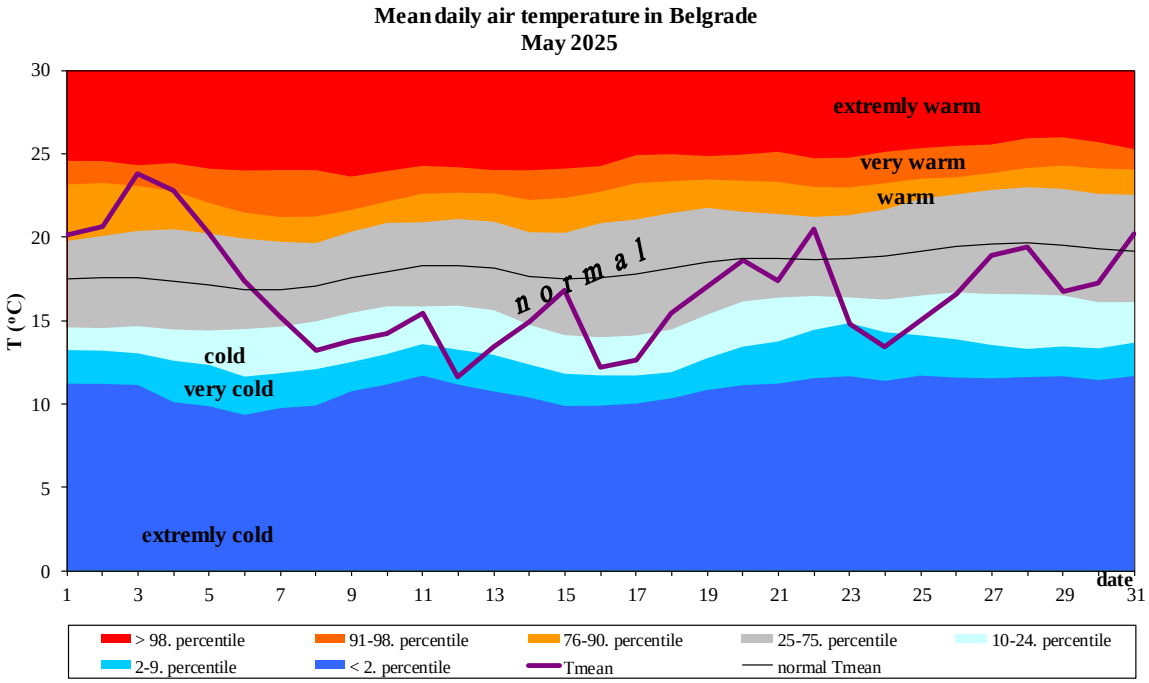


Figure 6. Daily course of the mean daily air temperature and accompanying percentiles for Belgrade

Maximum air temperature

Mean maximum air temperature in May ranged from 20,9 ºC on Palic to 24,0 ºC in Ćuprija, while Belgrade observed 22,0 ºC. On the mountains, mean maximum air temperature ranged from 10,5 ºC at Kopaonik to 16,6 ºC in Sjenica.

Based on the percentile method, mean maximum monthly air temperature was in the categories of normal and cold.

The highest maximum daily air temperature of 30,7 ºC was measured in Loznica on May 3. On the same day, Belgrade observed the highest air temperature of 30,1 ºC.

Summer days[3] were recorded in all of Serbia apart from the mountains. The least number, total of 5 days, was registered on Palic, Valjevo, Dimitrovgrad and Vranje, and the highest number, total of 14 days, was recorded in Cuprija. The recorded number of summer days in most of Serbia was 1 to 7 days below May average.

[3] Summer day refers to a day with maximum daily air temperature 25 °C and above

One tropical day[4] was recorded in Loznica, Belgrade, Sombor, Veliko Gradiste and Cuprija, which is up to 2 days below May average.

Figure 7 shows daily course of the maximum daily air temperature and the accompanying percentiles for Belgrade in May 2025 and for the stations Sombor, Novi Sad, Loznica, Negotin, Kragujevac, Zlatibor, Nis and Vranje are given in the Appendix.

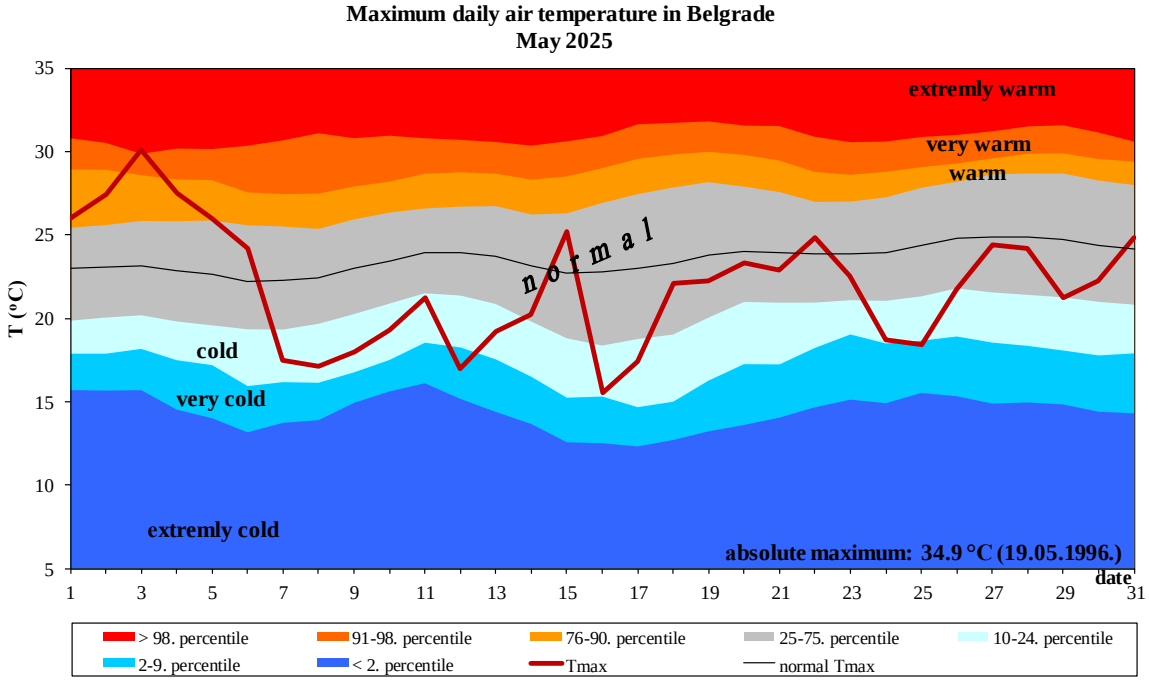


Figure 7. Daily course of the maximum daily air temperature and accompanying percentiles for Belgrade

Minimum air temperature

Mean minimum air temperature in May ranged from 7,4 ºC in Kursumlija to 11,2 ºC in Belgrade. Mean minimum air temperature ranged from 2,6 ºC at Kopaonik to 6,7 ºC at Zlatibor.

Based on the percentile method, mean minimum monthly air temperature ranged from cold and very cold in most of the country, and extremely cold in Zrenjanin and Sremska Mitrovica.

The lowest minimum daily air temperature of -2,5 ºC was recorded in Sjenica on May 14. In the lowland, the lowest daily air temperature of 0,5 ºC was recorded on the same day in Pozega, while Belgrade recorded the lowest monthly air temperature of 5,8 ºC on May 13.

Number of frost days[5] was the following: Kopaonik – 7 days, Sjenica – 5 days.

[4] Tropical day refers to a day with maximum daily air temperature 30 °C and above
[5] Frost day is defined as the day with minimum air temperature lower than 0°C

In most of Serbia, cold wave[6] was recorded in the middle of May (*Table 1*). The longest lasting cold wave, total of 7 days, was recorded in Sremska Mitrovica, from 9 to 15 May, and in Vranje from 14 to 20 May.

Table 1. Cold waves in Serbia

COLD WAVES IN SERBIA - MAY 2025.

(relative to the 1991-2020 base period)

station/day	MAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
PALIC																															
SOMBOR																															
KIKINDA																															
ZRENJANIN										VC	VC	EC	EC	EC																	
NOVI SAD									VC	VC	VC	VC	EC	EC																	
SR.MITROVICA									VC	VC	VC	VC	EC	EC	VC																
BEOGRAD																															
LOZNICA																															
VALJEVO											VC	VC	EC	VC	VC																
V.GRADISTE										EC	EC	VC	EC	EC	EC																
SM.PALANKA																															
KRAGUJEVAC											VC	VC	EC	EC	EC																
KRALJEVO																															
POZEGA											VC	VC	VC	EC	EC																
ZLATIBOR																															
CUPRIJA																															
KRUSEVAC																															
NEGOTIN											EC	VC	VC	EC	EC																
ZAJECAR											EC	EC	EC	EC	EC																
CRNI VRH																															
KOPAONIK																															
SJENICA																															
NIS														EC	EC	VC	VC	VC	VC												
VRANJE														EC	EC	VC	VC	VC	VC	VC											
DIMITROVGRAD																															
LESKOVAC														EC	EC	VC	VC	VC	EC												
KURSUMLIJA																															
B.KARLOVAC										VC	VC	VC	EC	EC																	

EC	EXTREMELY COLD
VC	VERY COLD

Figure 8 shows assessment of the minimum and maximum air temperature in Serbia for May based on the tercile distribution relative to the 1991-2020 base period. It can be noted that the mean maximum air temperature was slightly below, and mean minimum air temperature significantly below the lower tercile.

[6] Cold wave is, according to the percentile method, is a period during which minimum daily air temperature is in the very cold and extremely cold categories for 5 consecutive days or longer

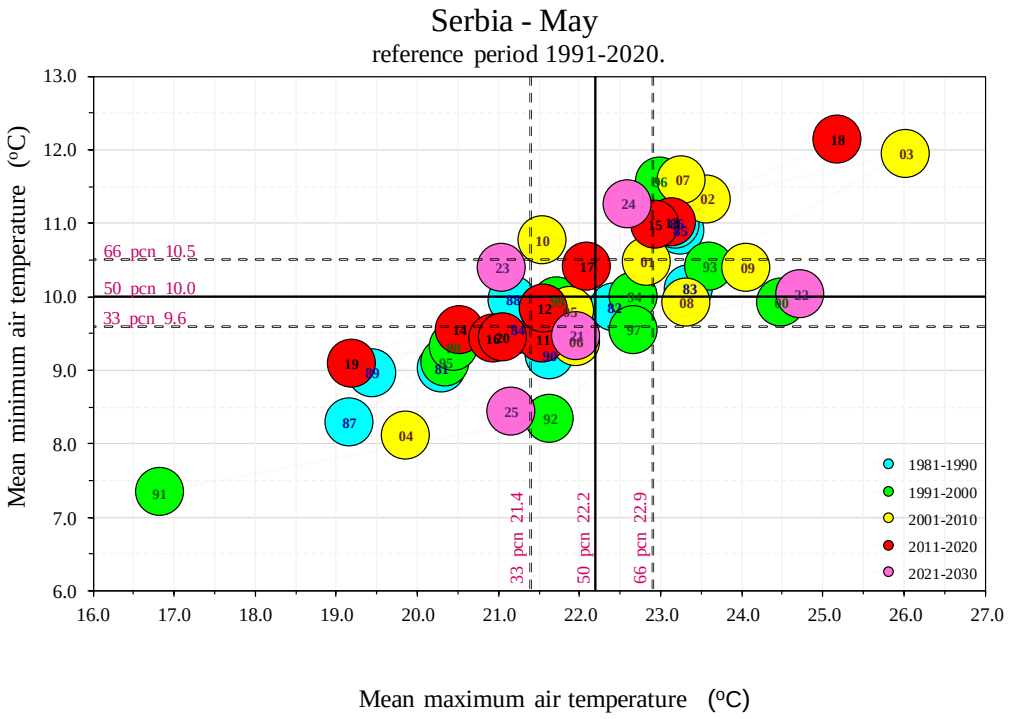


Figure 8. Assessment of minimum and maximum air temperature for Serbia with the accompanying terciles in relation to the 1991-2020 base period

Figure 9 shows daily course of the minimum daily air temperature and the accompanying percentiles for Belgrade in May 2025, and for the stations Sombor, Novi Sad, Loznica, Negotin, Kragujevac, Zlatibor, Nis and Vranje are given in the Appendix.

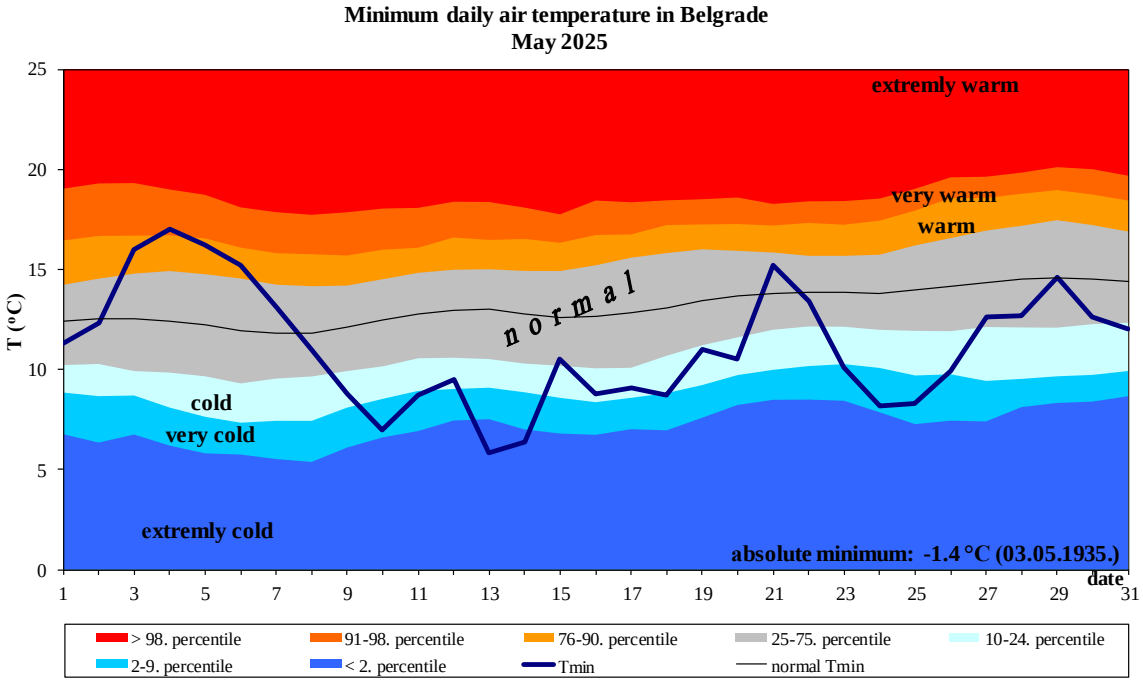


Figure 9. Daily course of the minimum daily air temperature and accompanying percentiles for Belgrade

PRECIPITATION

Averagely rainy May in most of Serbia. May 2025 ranks as the 6th driest in the period from 1925 to 2025 (*Figure 10*). Figures 11, 12 and 13 show rank of the driest years for Kragujevac, Kraljevo and Zlatibor.

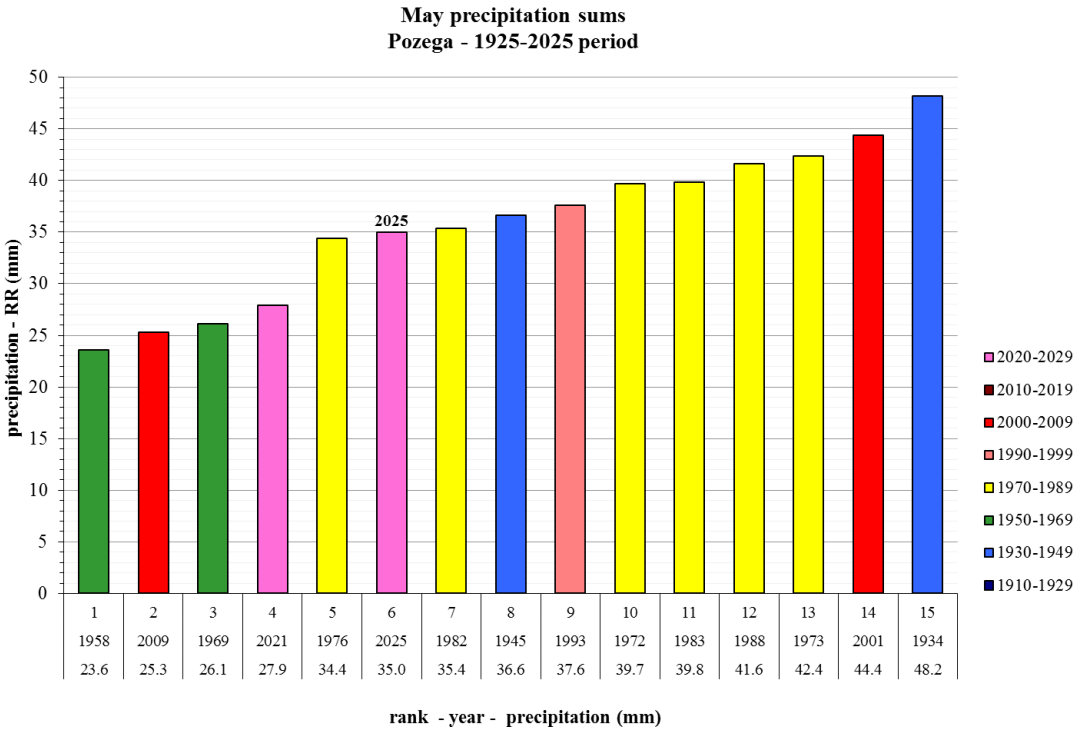


Figure 10. Rank of the lowest precipitation in Požega

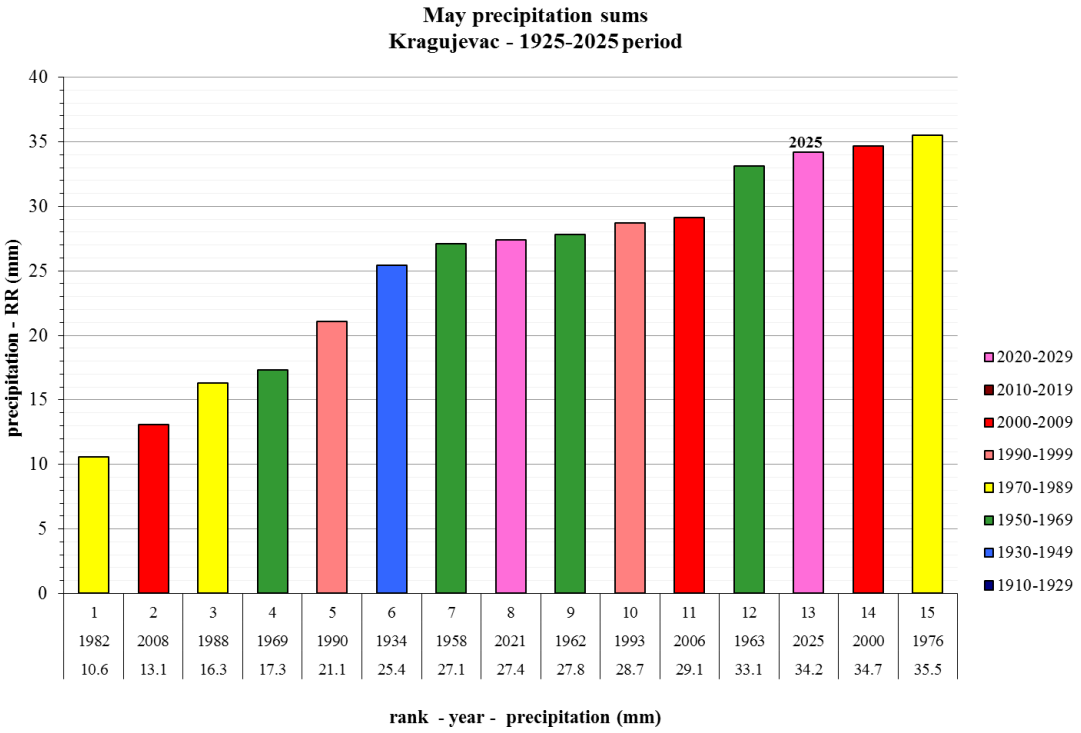


Figure 11. Rank of the lowest precipitation in Kragujevac

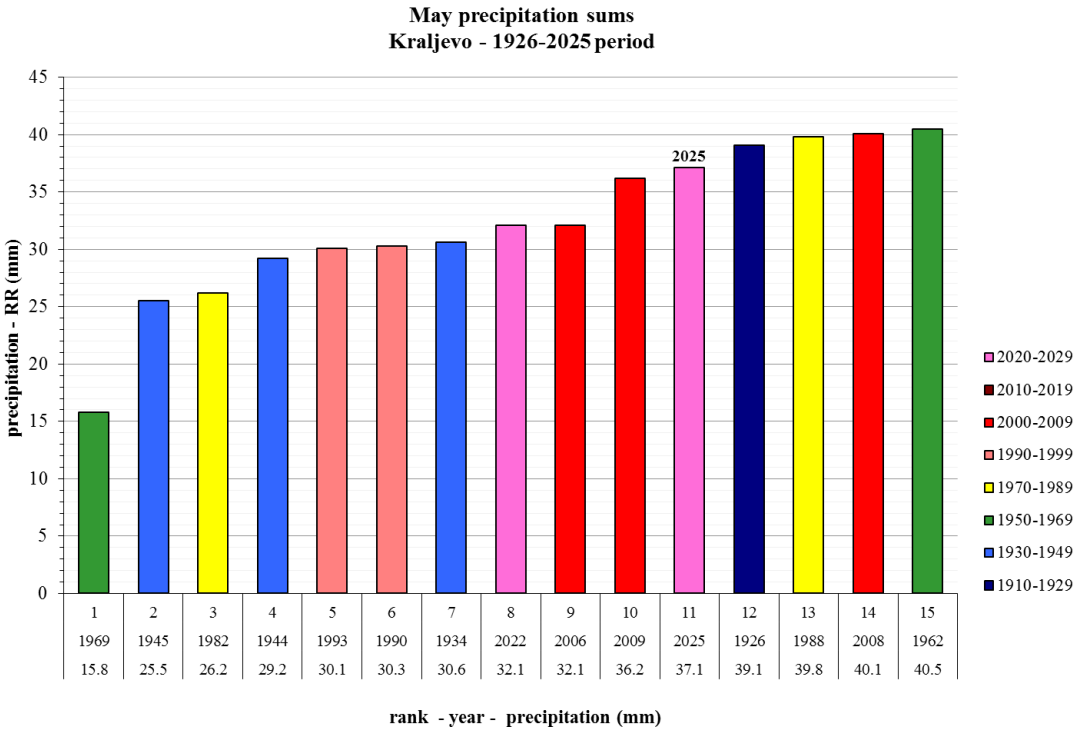


Figure 12. Rank of the lowest precipitation in Kraljevo

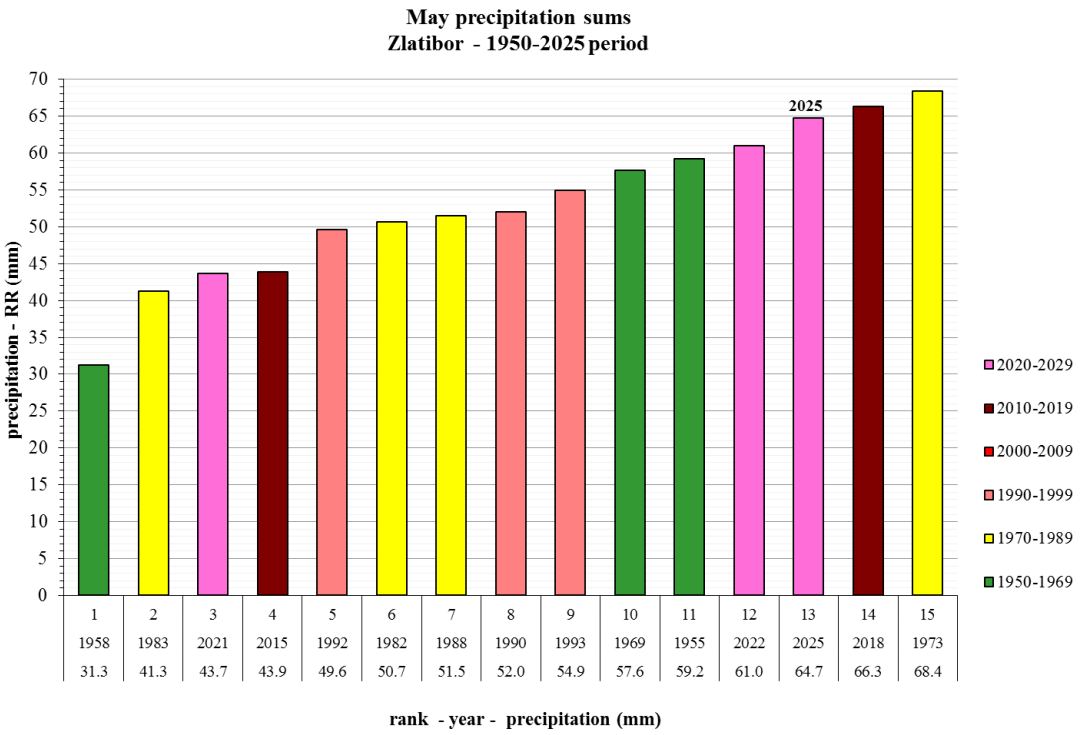


Figure 13. Rank of the lowest precipitation on Zlatibor

May precipitation sums ranged from 34,2 mm in Kragujevac to 103,5 mm in Belgrade (*Figure 14*).

Precipitation totals for the 1991-2020 base period ranged from 43% in Pozega to 143% in Belgrade (*Figure 15*).

Based on the percentile method, precipitation sums were in the following categories: normal in most of Serbia, rainy in Novi Sad, Belgrade, Smederevska Palanka, Dimitrovgrad and Vranje, and dry in Kragujevac, Sjenica, Crni Vrh and Kopaonik, and very dry in Pozega, Kraljevo, Kursumlija and Zlatibor (*Figure 16*).

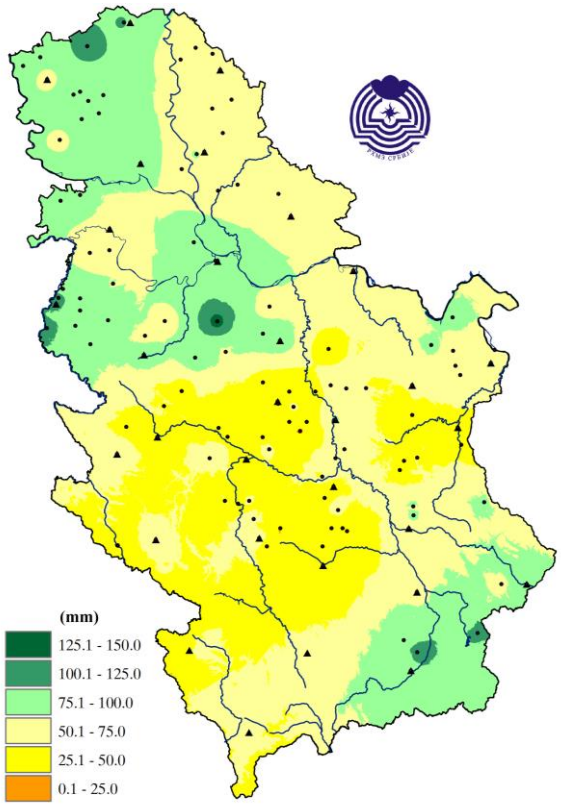


Figure 14. Spatial distribution of the monthly precipitation sums (mm) according to data from 28 major meteorological, 23 climatological and 76 rain gauge stations

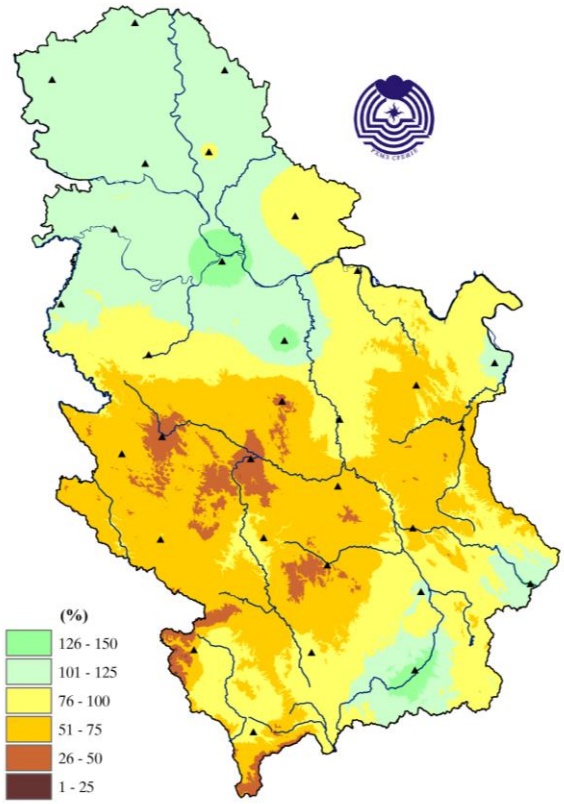


Figure 15. Spatial distribution of the monthly precipitation sums in the percentages of normal for the 1991–2020 base period

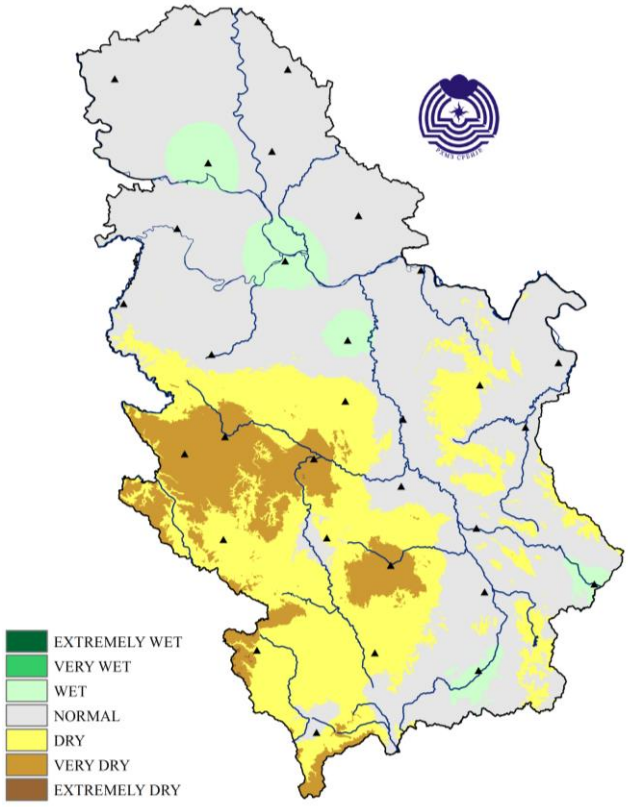


Figure 16. Monthly precipitation sums according to the percentile method

The highest daily precipitation sum of 37,3 mm was recorded in Dimitrovgrad on May 25. On May 24, Belgrade recorded daily precipitation sum of 25,0 mm.

Number of days with precipitation in May ranged from 11 in Veliko Gradiste to 18 in Loznica (*Figure 17*). The observed number of days with precipitation was around May average in most of Serbia (*Figure 18*).

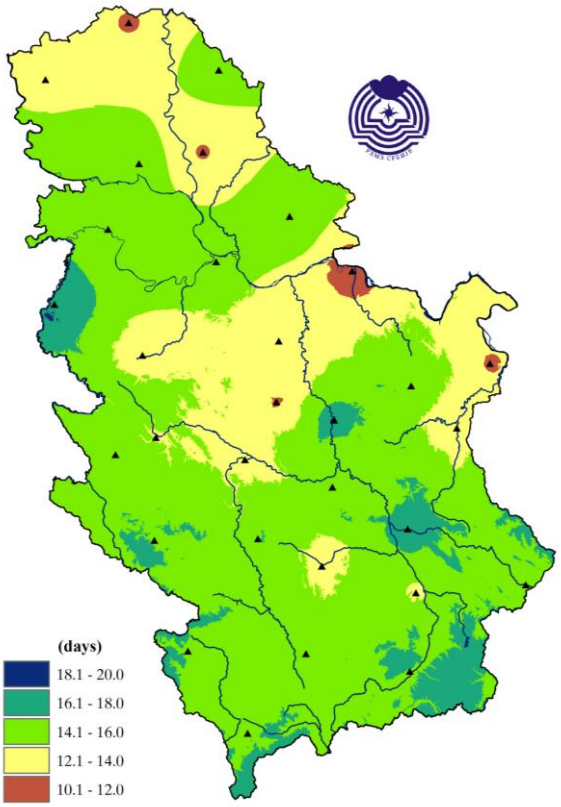


Figure 17. Spatial distribution of number of days with precipitation

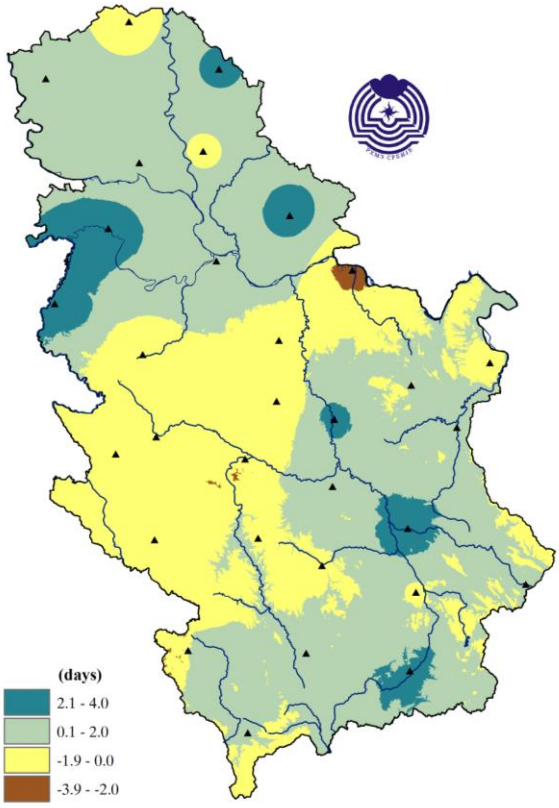


Figure 18. Spatial distribution of deviation of number of days with precipitation

On May 16 and 17, snow cover was recorded at Kopaonik with the maximum snow depth of 8 cm.

Figure 19 shows assessment of air temperature and precipitation sums for Serbia for May based on the tercile distribution relative to the 1991 – 2020 base period. It can be noted that May 2025 was marked by air temperature that was below the lower tercile threshold and precipitation sums within the average.

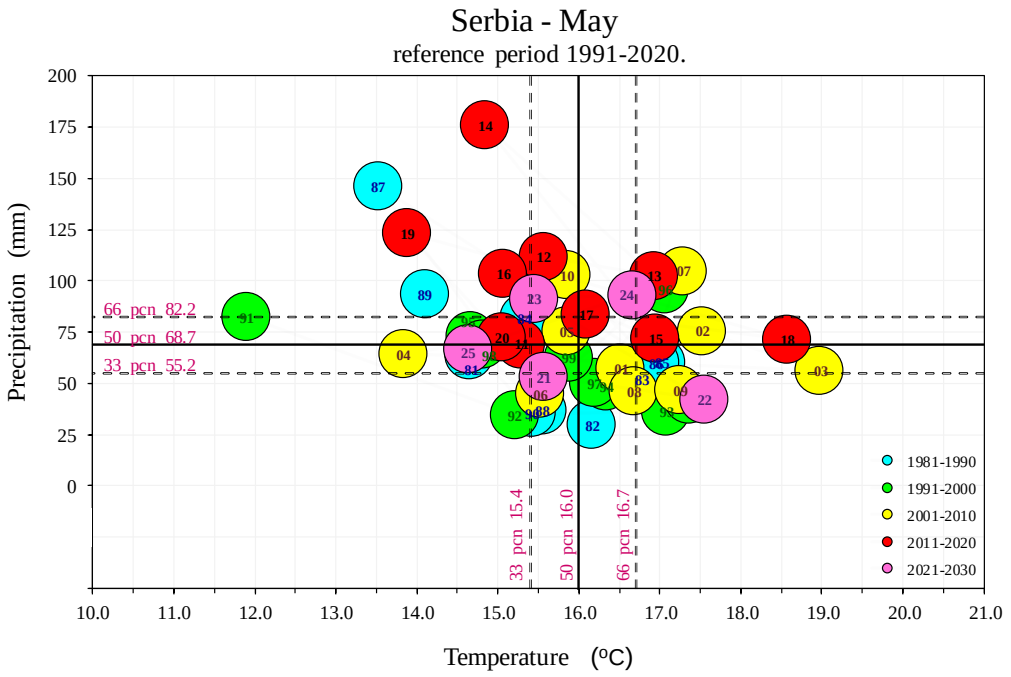


Figure 19. Assessment of air temperature and precipitation for Serbia with the accompanying terciles in relation to the 1991-2020 base period

Figure 20 show daily and cumulative precipitations sums with averaged normal 1991-2020 for May in Belgrade, and for the stations Sombor, Novi Sad, Loznica, Negotin, Kragujevac, Zlatibor, Nis and Vranje precipitation sums are given in Appendix.

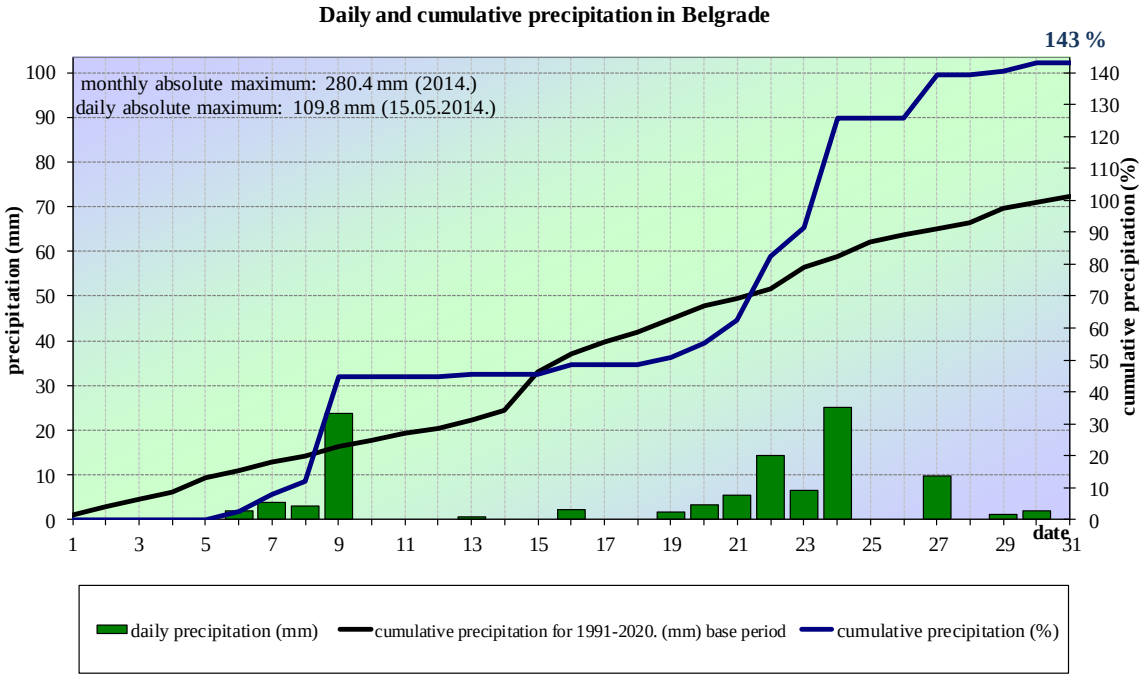


Figure 20. Daily and cumulative precipitation in Belgrade

CLOUD COVER, BRIGHT AND CLOUDY DAYS

Mean May cloud cover was around the average, ranging from 5/10 to 7/10. Figures 21, 22 and 23 show average daily cloud cover for May for Belgrade, Kopaonik and Nis.

Bright days [7] were not recorded in Dimitrovgrad and Kopaonik. The highest number of bright days, total of 6 days, was recorded in Sremska Mitrovica, Veliko Gradiste and Crni Vrh, whereas Belgrade observed 3 bright days. The observed number of bright days was 1 to 3 days below the May average.

Number of cloudy days[8] ranged from 4 in Banatski Karlovac and Nis to 11 at Crni Vrh, whereas Belgrade observed 7. Number of cloudy days was 1 to 3 days below May average.

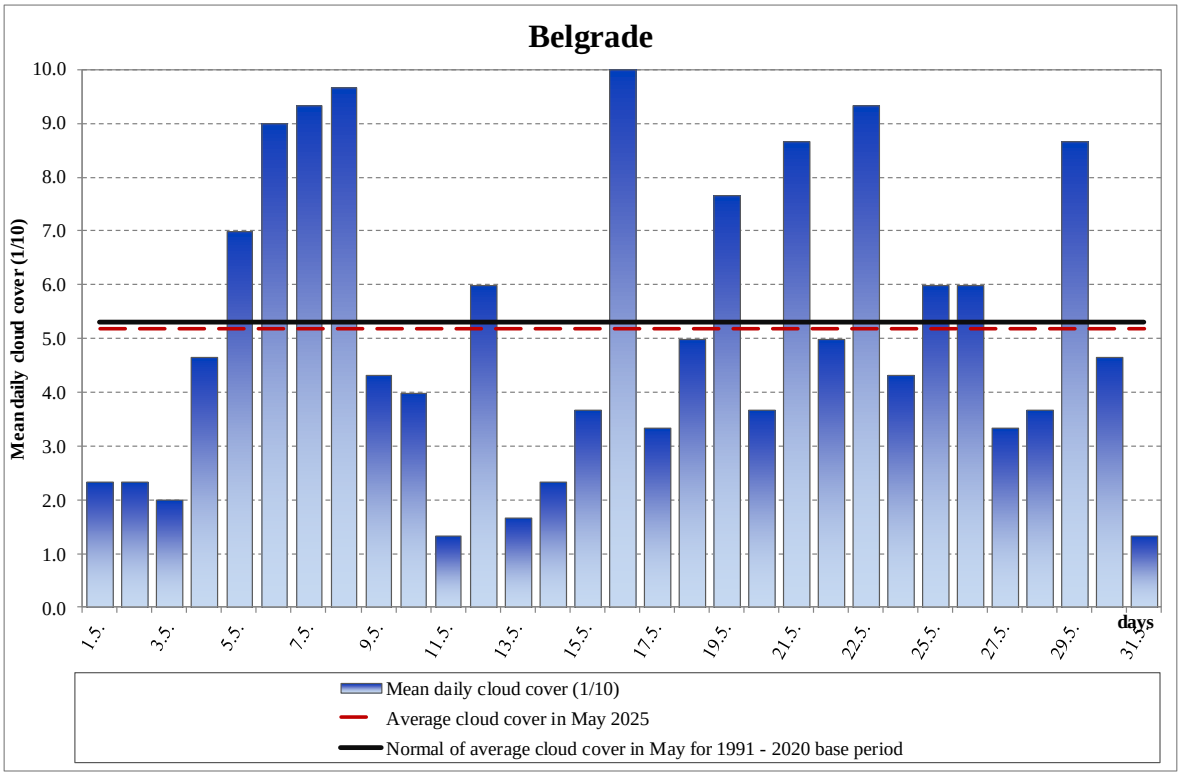


Figure 21. Mean daily cloud cover in Belgrade

[7] Bright day refers to a day with cloud cover less than 2/10
[8] Cloudy day refers to a day with cloud cover over 8/10

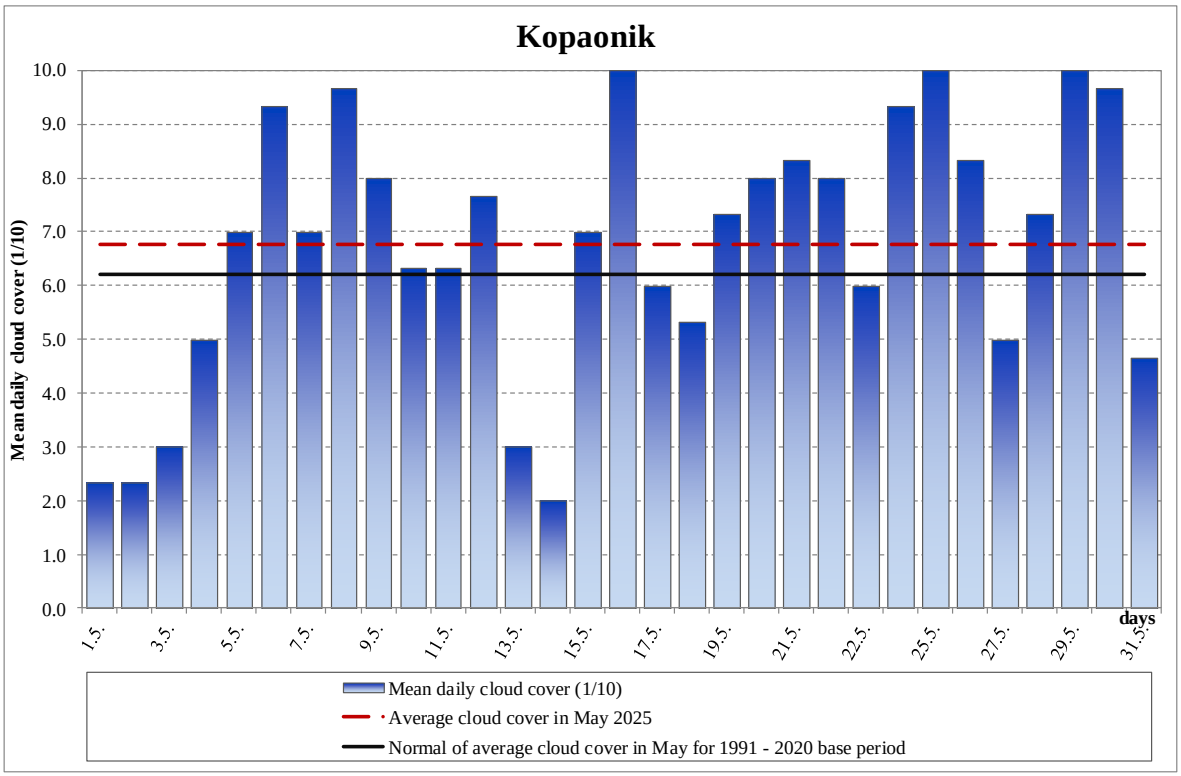


Figure 22. Mean daily cloud cover on Kopaonik

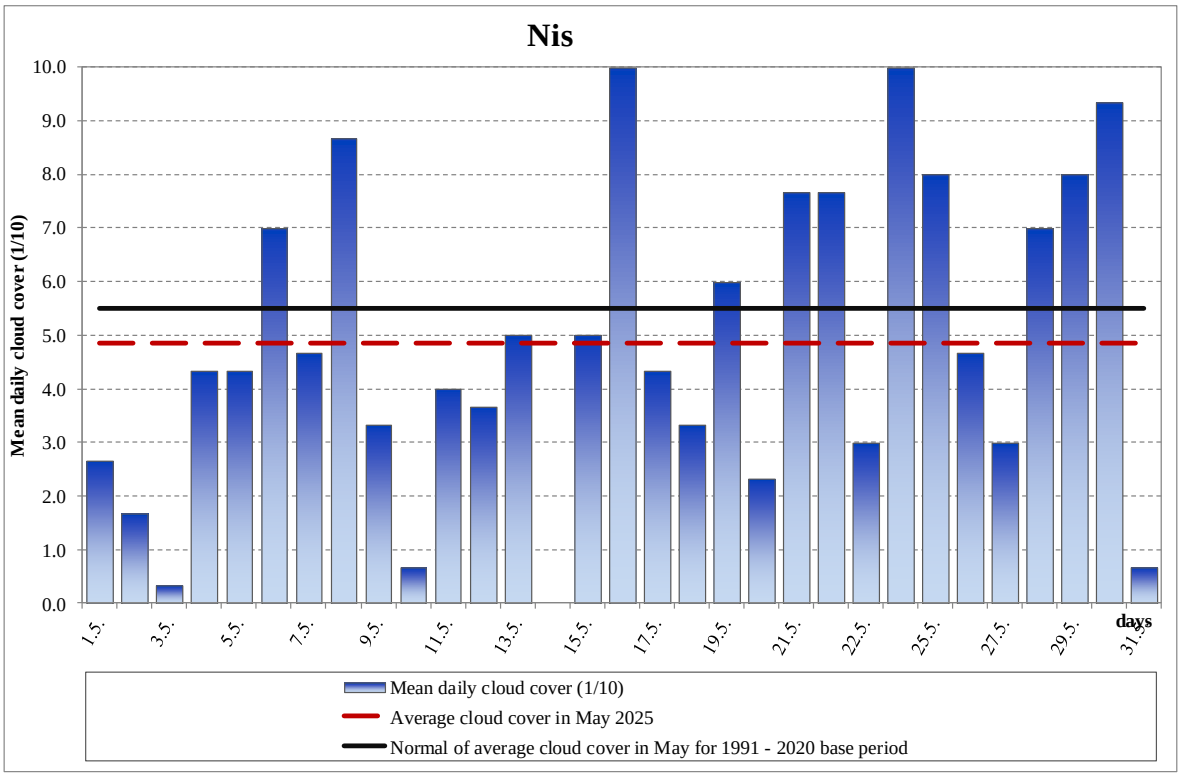


Figure 23. Mean daily cloud cover in Nis

SUNSHINE DURATION (INSOLATION)

Sunshine duration in May ranged from 180,8 hours at Kopaonik to 271,5 hours in Kikinda (*Figure 24*).

May insolation ranged from 96% at Palic and Belgrade to 129% in Pozega relative to the normal for the 1991-2020 base period (*Figure 25*).

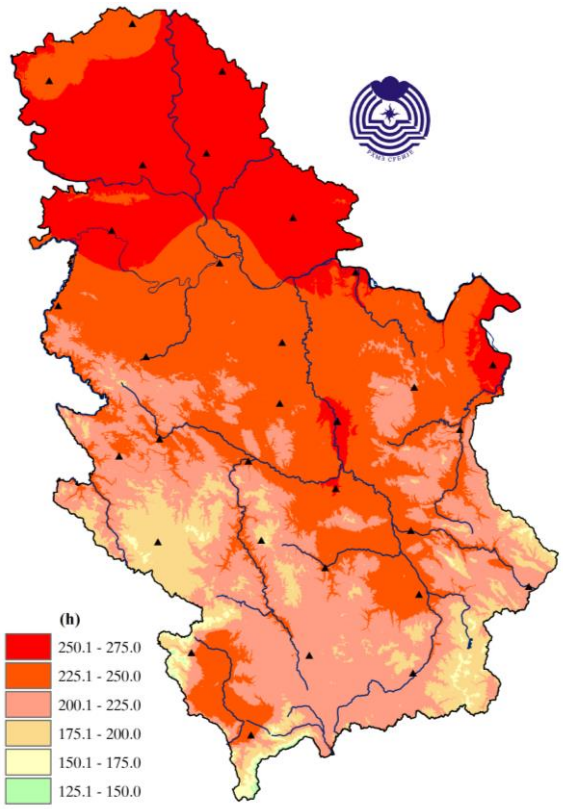


Figure 24. Insolation, expressed in hours

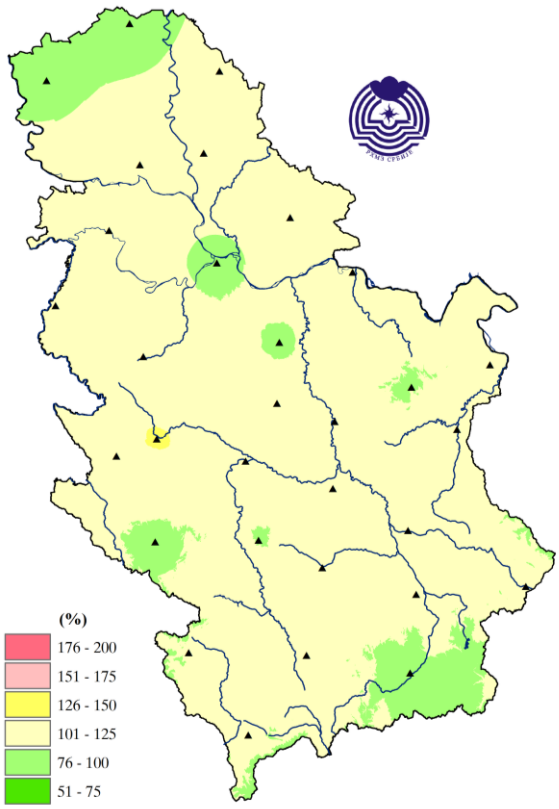


Figure 25. Insolation expressed in the percentages of normal

*** Note:** Climate analysis of meteorological elements was done based on the preliminary data obtained from 28 main meteorological stations

OVERVIEW OF THE SYNOPTIC SITUATION*

For most of the month, influence of cold air from the north and northeast prevailed, as well as cyclonic circulations and waves of moist air from the Mediterranean region, relatively cold and rainy conditions, locally with severe weather events. At the beginning of the month, prevalnce of ridge, warm air and very warm conditions; toward the end of the month, weakening of the influence of the cold depression from the north and east, and rise in temperatures.

At the beginning of the month, a ridge and a warm air mass prevailed, the weather was very warm and mostly sunny. In the middle of the first decade, a change in weather took place with the arrival and influence of a cold front from the northwest, as well as an accompanying upper-air trough resulting with cloudiness with rain, showers, and thunderstorms, along with a noticeable drop in temperature. Severe weather was locally observed, accompanied by heavy rain, strong winds, and hail, especially in the western and northern regions. In the following days, significantly colder, changeably cloudy, and unsettled weather continued, with scattered rain, showers, and thunderstorms due to the influence of a spatial cyclonic field over the Mediterranean, eastern and southeastern parts of the continent, as well as the Balkan Peninsula and the Pannonian Plain, and a continuous inflow of moist and unstable air over these areas on the front side of the trough from northern and northeastern Europe. At the beginning of the second decade, the weather became somewhat warmer and more stable with more sunshine, influenced by a weakly developed area of high pressure and a warmer air mass.

Then, in the middle of the month, after a few warm days, the influence and passage of another cold atmospheric front from the north took place. Specifically, within the developed low pressure over the north and northeast, a cold wave moved across the Pannonian Plain toward the central Balkans. At the same time, a low pressure developed over northern Africa, along with a wave of moist air in the central Mediterranean, which moved toward the northeast and the southern Balkans.

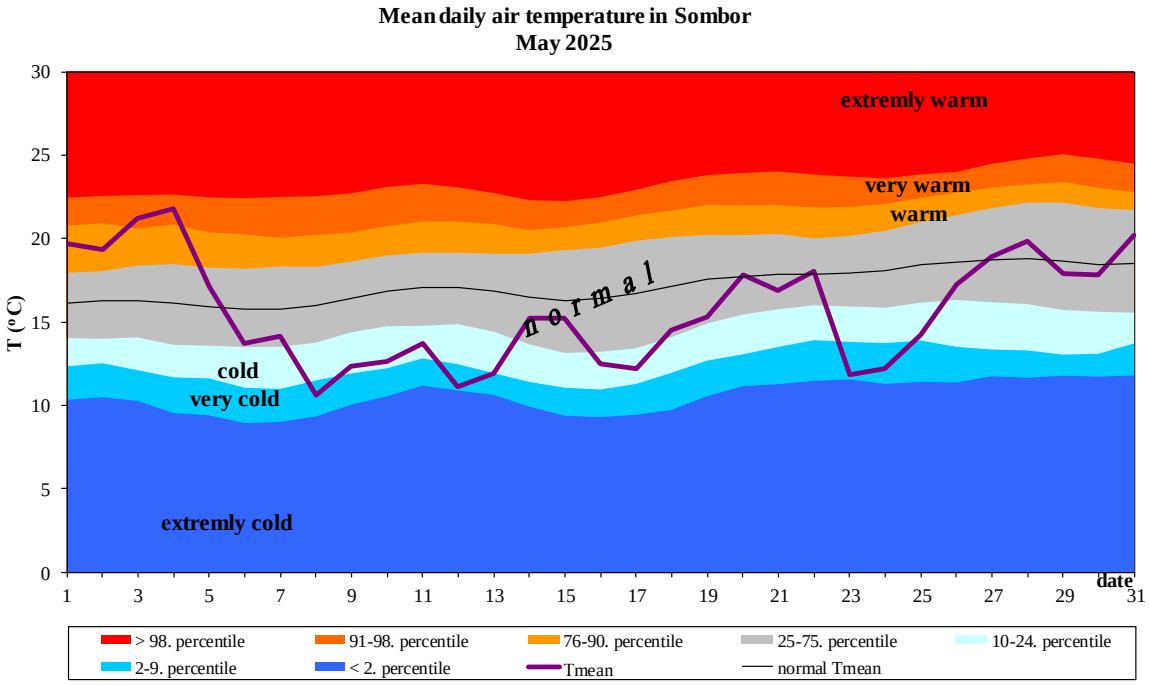
Until nearly the end of the month, the weather over our region was influenced by low pressure developing over northern and northwestern Europe as well as the western and central Mediterranean. Consequently, with a drop in temperatures, a short-lived snow cover formed on high mountains after the middle of the month. Increased precipitation was recorded in the west and central parts of the country at the end of the second and beginning of the third decade, and during the third decade period also in the east and southeast, occasionally accompanied by severe weather.

At the end of the month, the influence of the upper-air depression from the north and east weakened, while the influence of a ridge from the west strengthened, accompanied by an increase in geopotential height and advection of warm air mass over our region, resulting in mostly sunny and moderately warm weather.

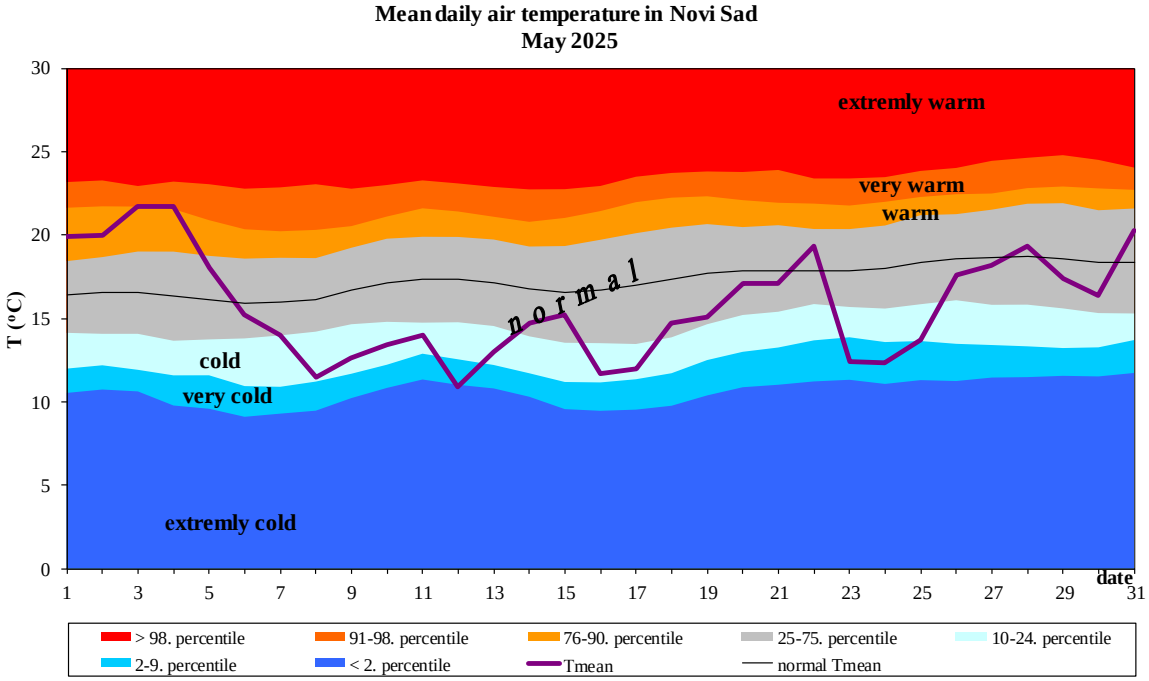
* National Center for Hydrometeorlogical Early Warning System

APPENDIX

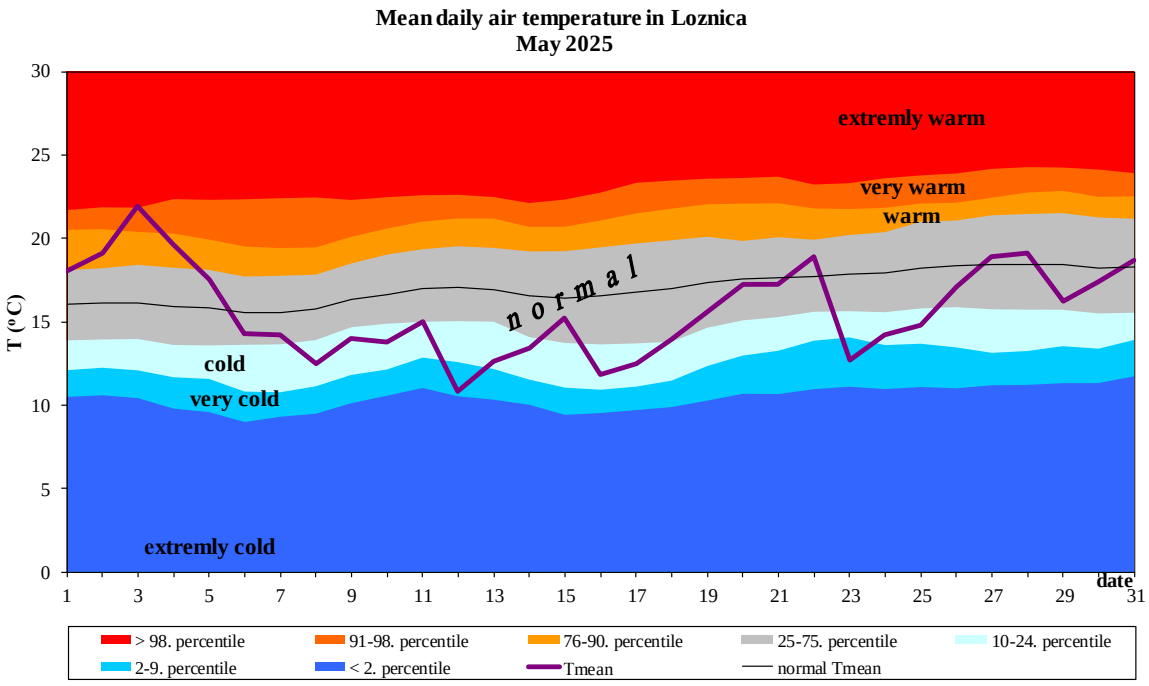
Mean air temperature



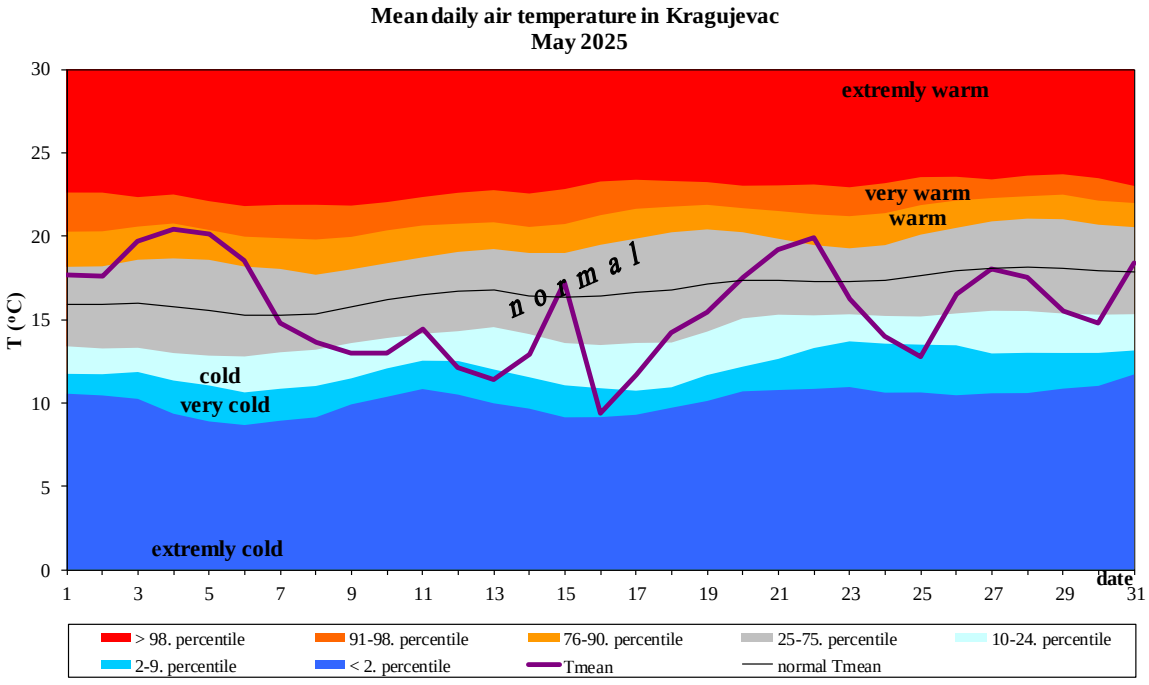
Appendix 1. Daily course of the mean daily air temperature and accompanying percentile for Sombor



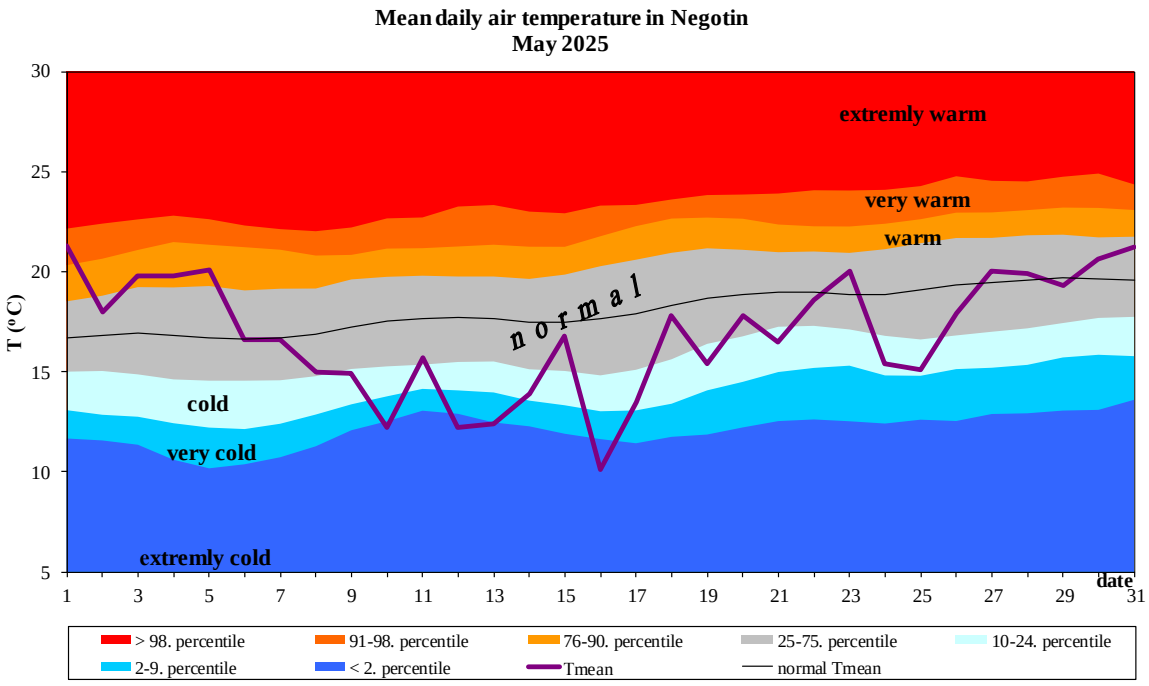
Appendix 2. Daily course of the mean daily air temperature and accompanying percentile for Novi Sad



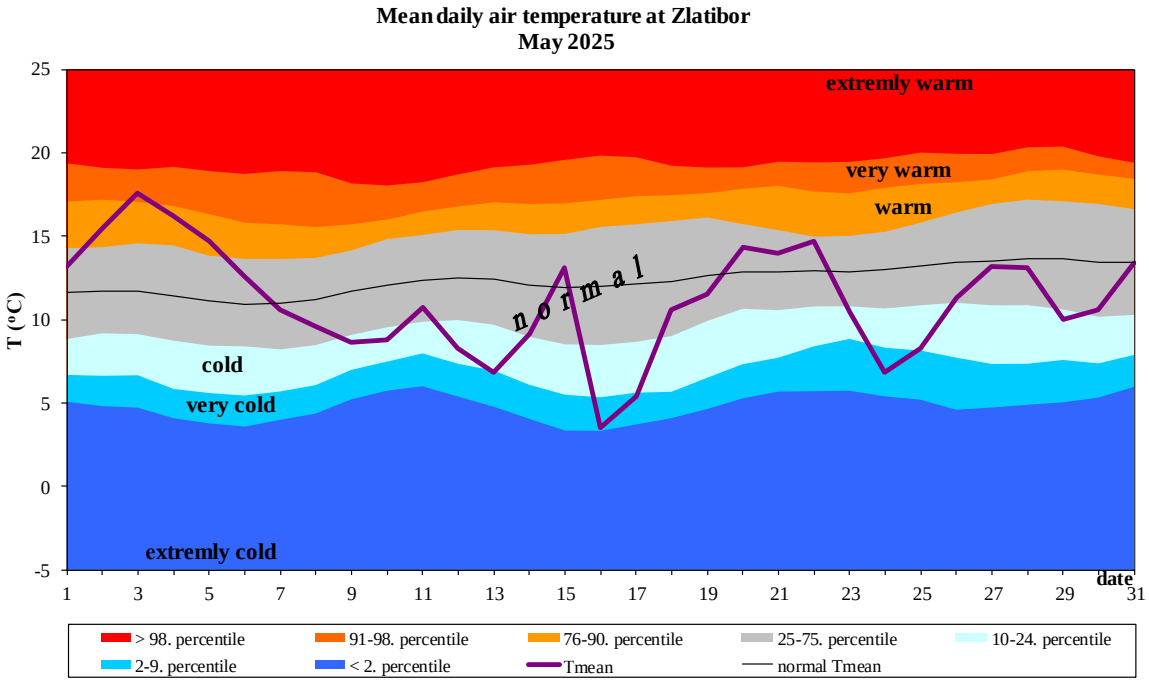
Appendix 3. Daily course of the mean daily air temperature and accompanying percentile for Loznica



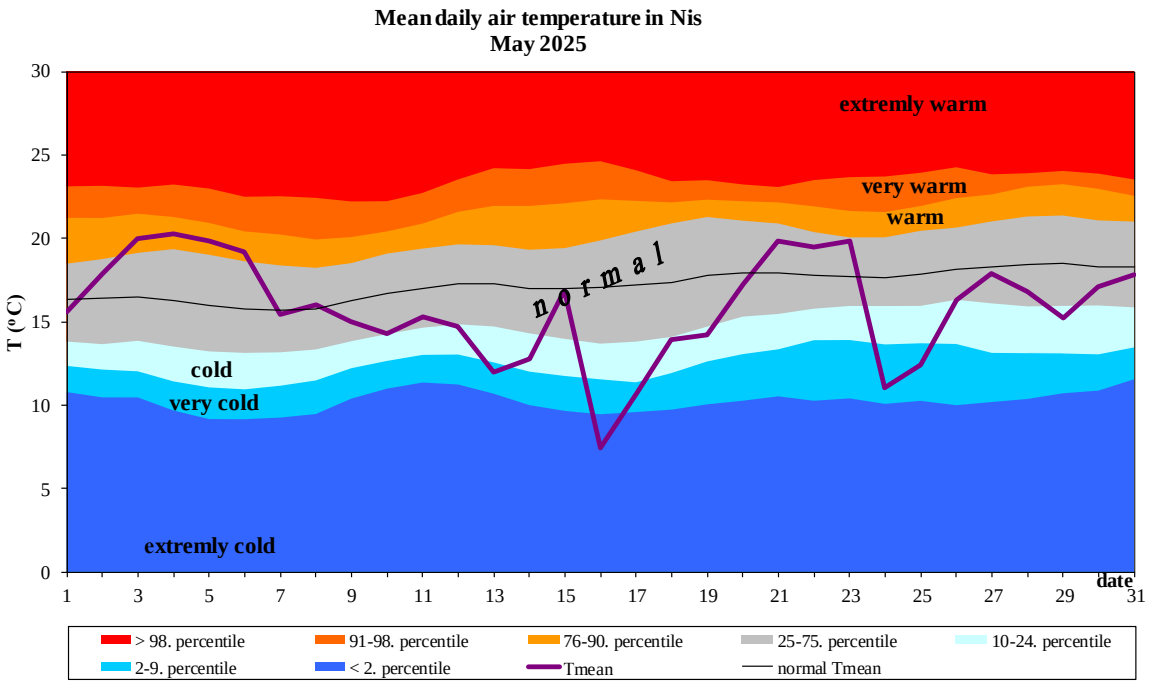
Appendix 4. Daily course of the mean daily air temperature and accompanying percentile for Kragujevac



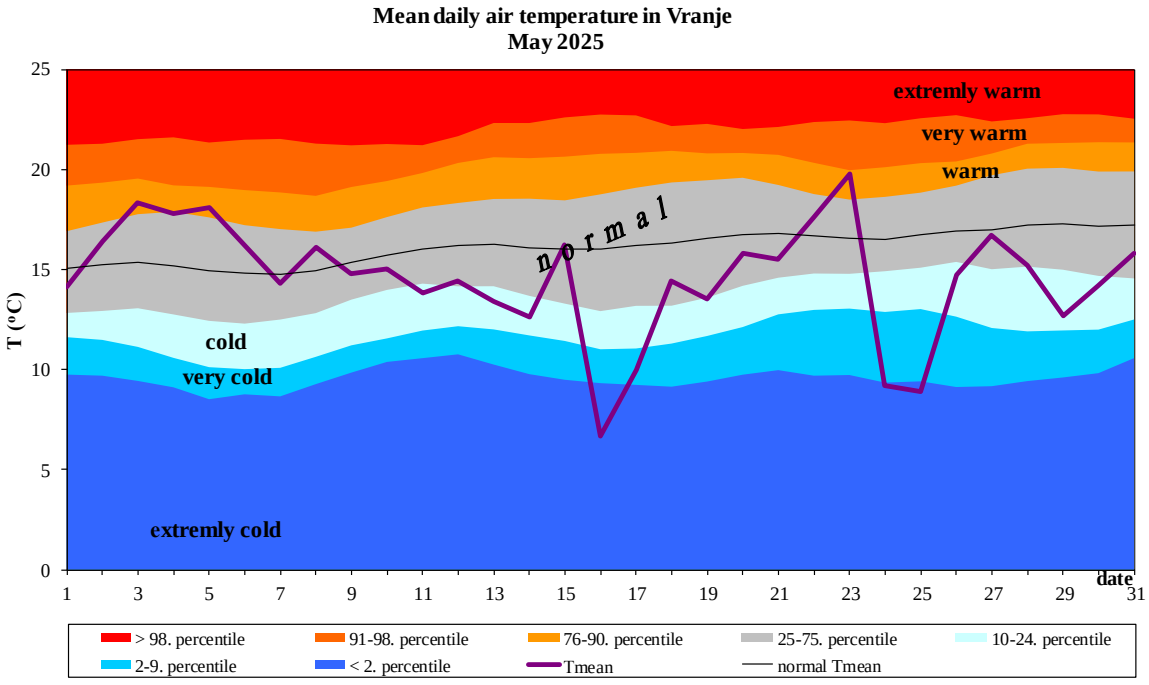
Appendix 5. Daily course of the mean daily air temperature and accompanying percentile for Negotin



Appendix 6. Daily course of the mean daily air temperature and accompanying percentile on Zlatiboru

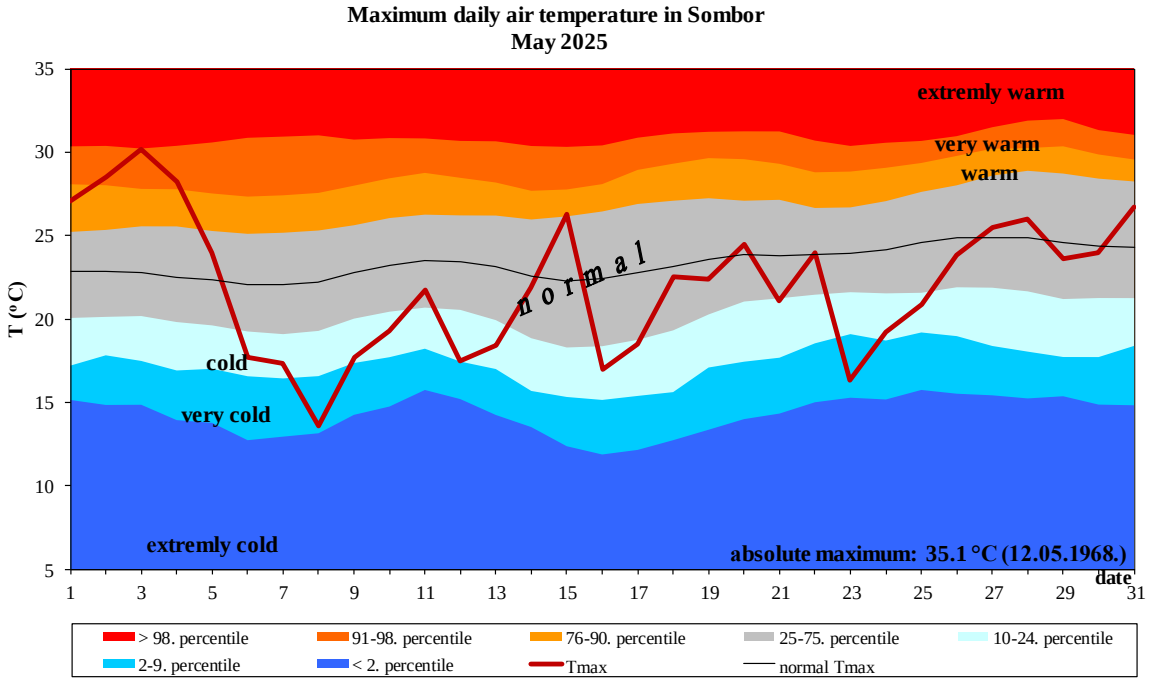


Appendix 7. Daily course of the mean daily air temperature and accompanying percentile for Nis

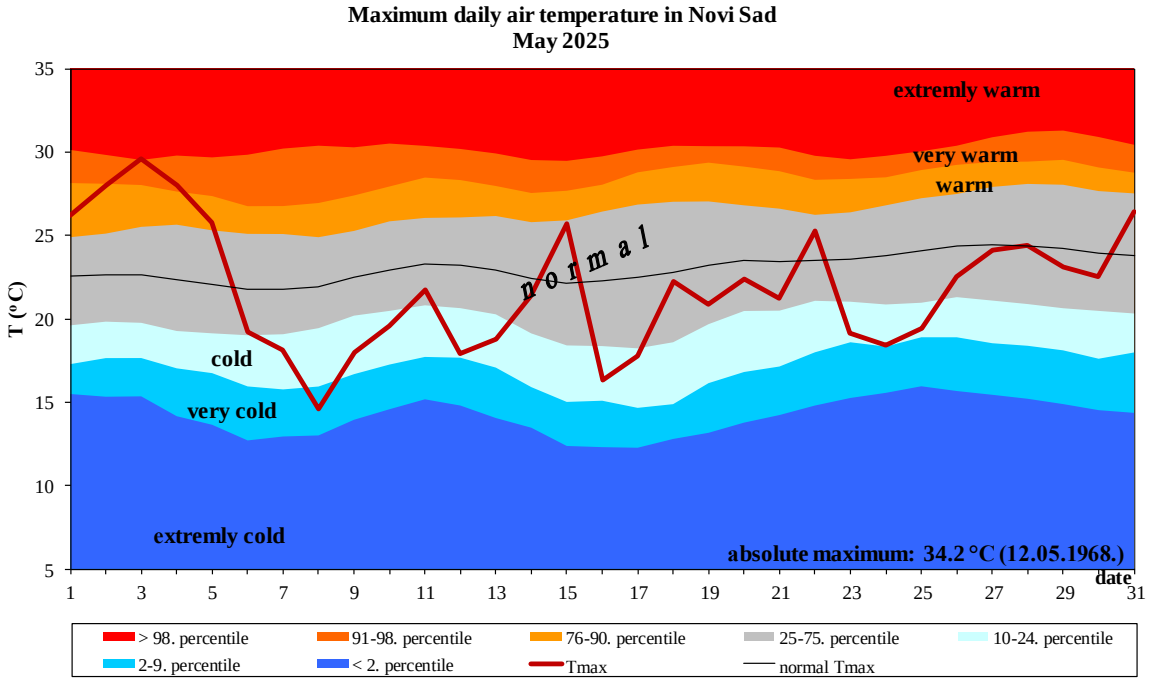


Appendix 8. Daily course of the mean daily air temperature and accompanying percentile for Vranje

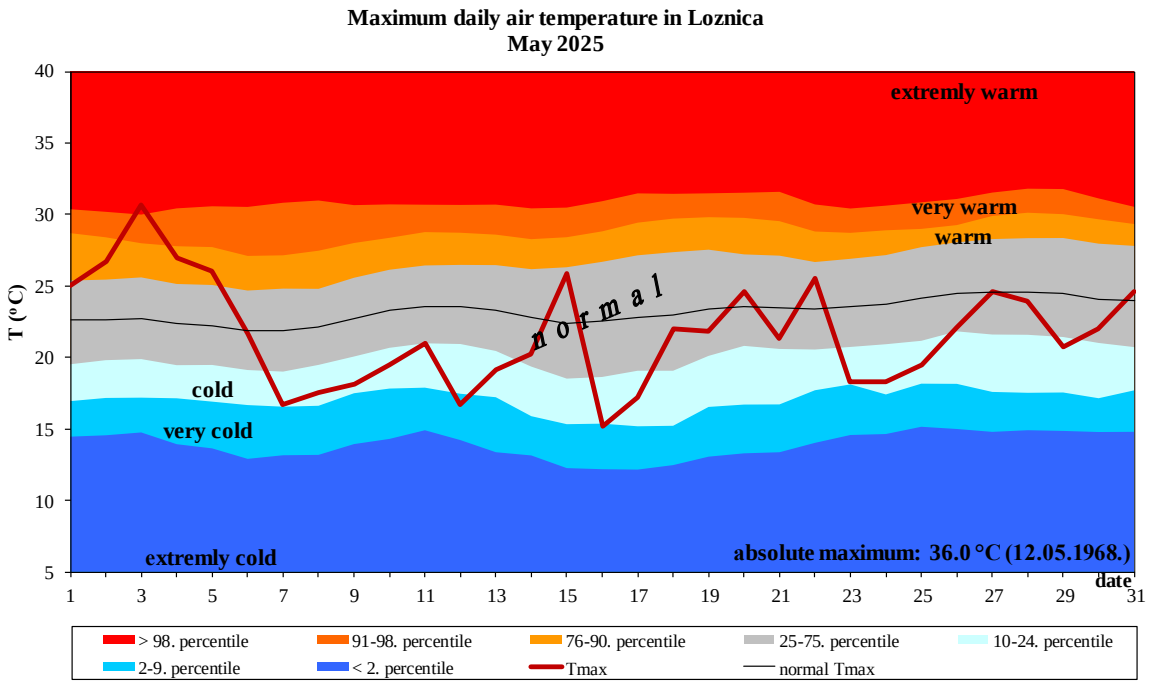
Maximum air temperature



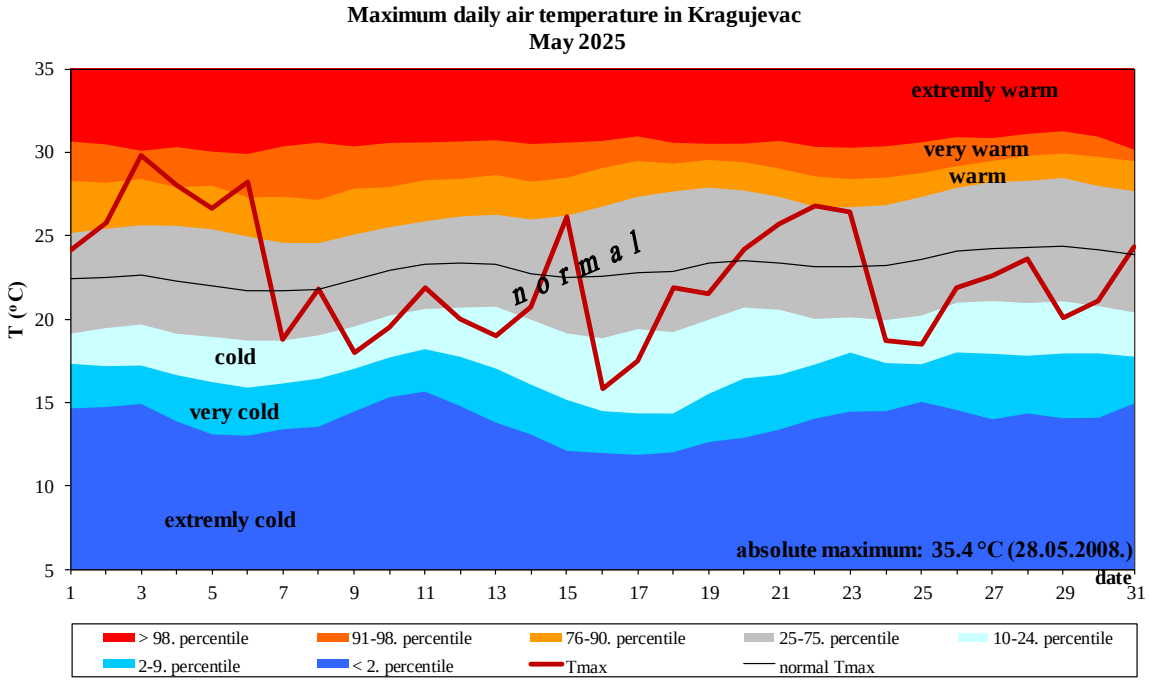
Appendix 9. Daily course of the maximum daily air temeperature and the accompanying percentile for Sombor



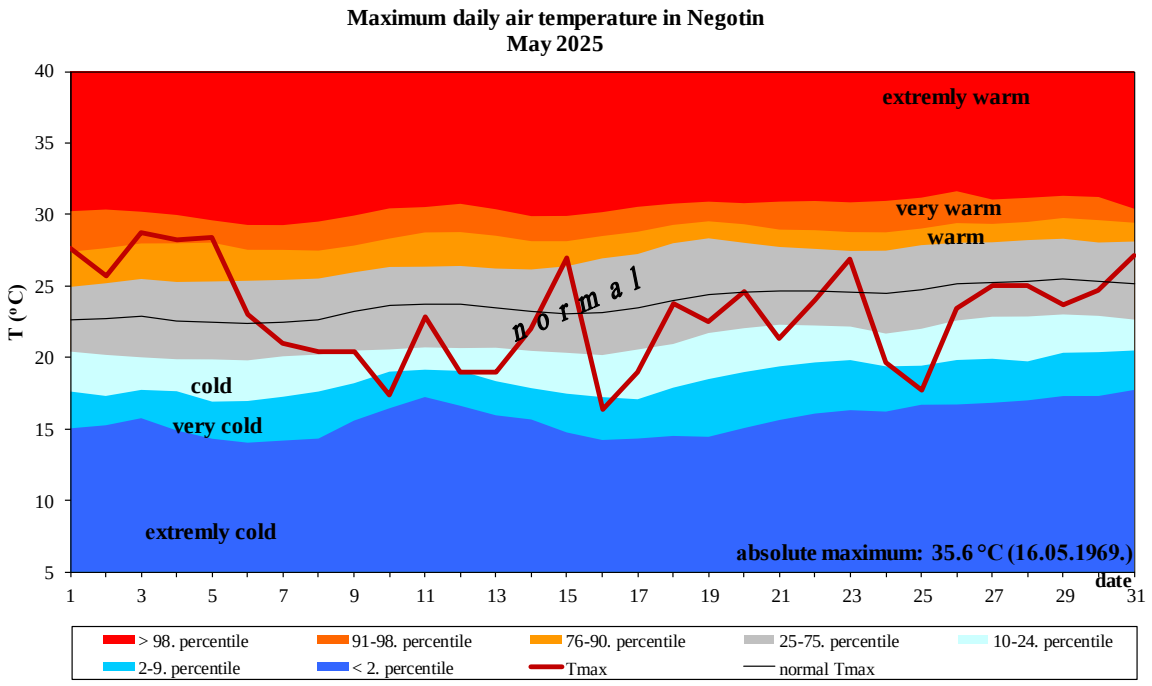
Appendix 10. Daily course of the maximum daily air temeperature and the accompanying percentile for Novi Sad



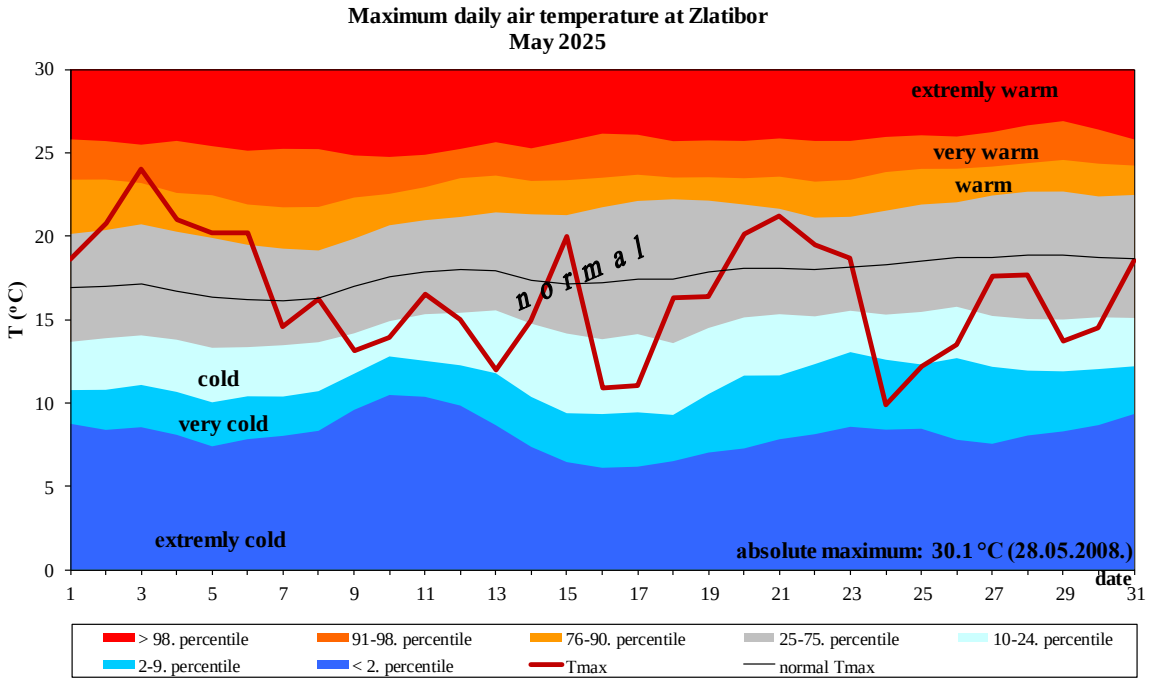
Appendix 11. Daily course of the maximum daily air temeperature and the accompanying percentile for Loznica



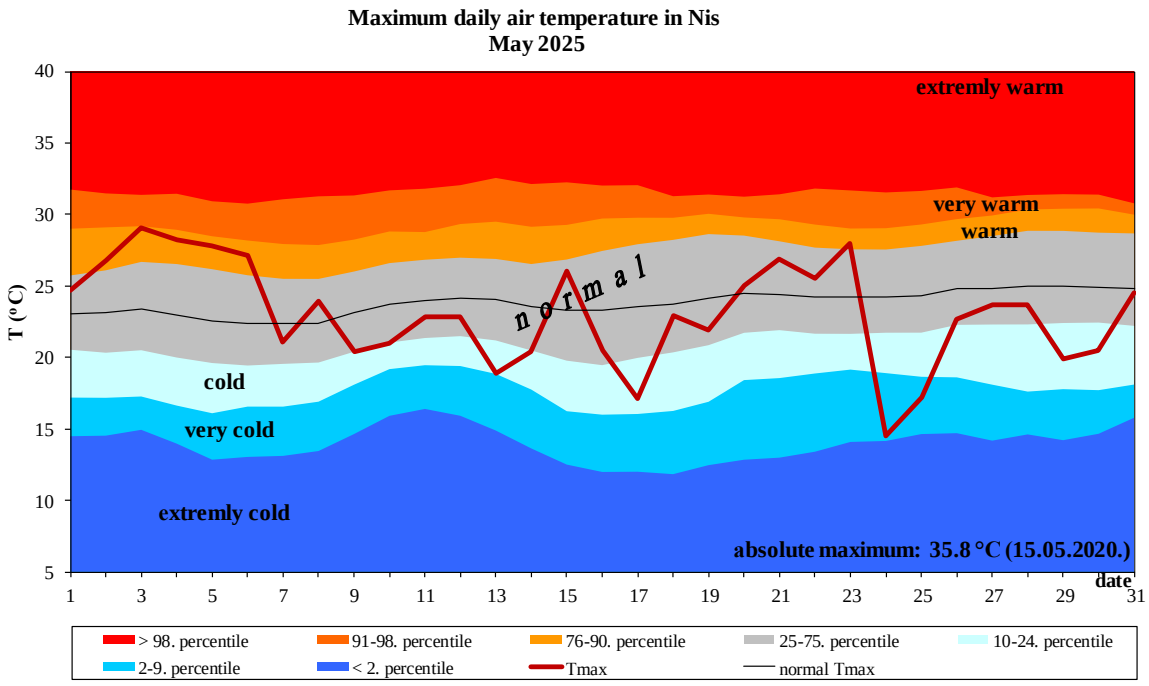
Appendix 12. Daily course of the maximum daily air temeperature and the accompanying percentile for Kragujevac



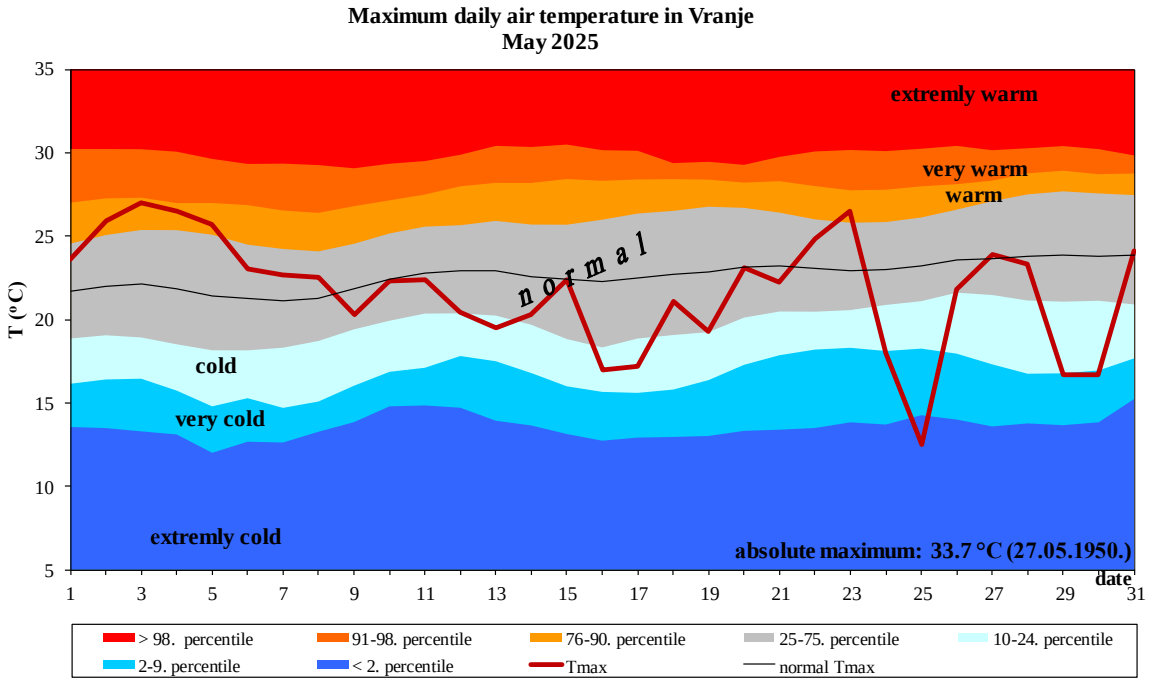
Appendix 13. Daily course of the maximum daily air temeperature and the accompanying percentile for Negotin



Appendix 14. Daily course of the maximum daily air temeperature and the accompanying percentile on Zlatibor

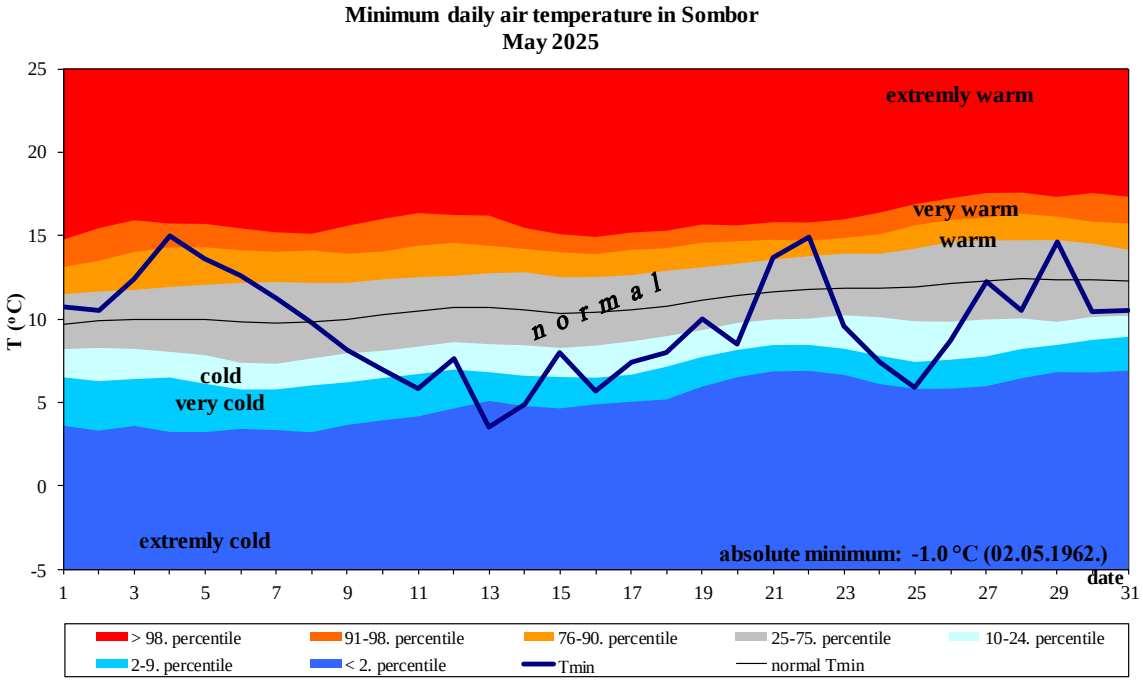


Appendix 15. Daily course of the maximum daily air temeperature and the accompanying percentile for Nis

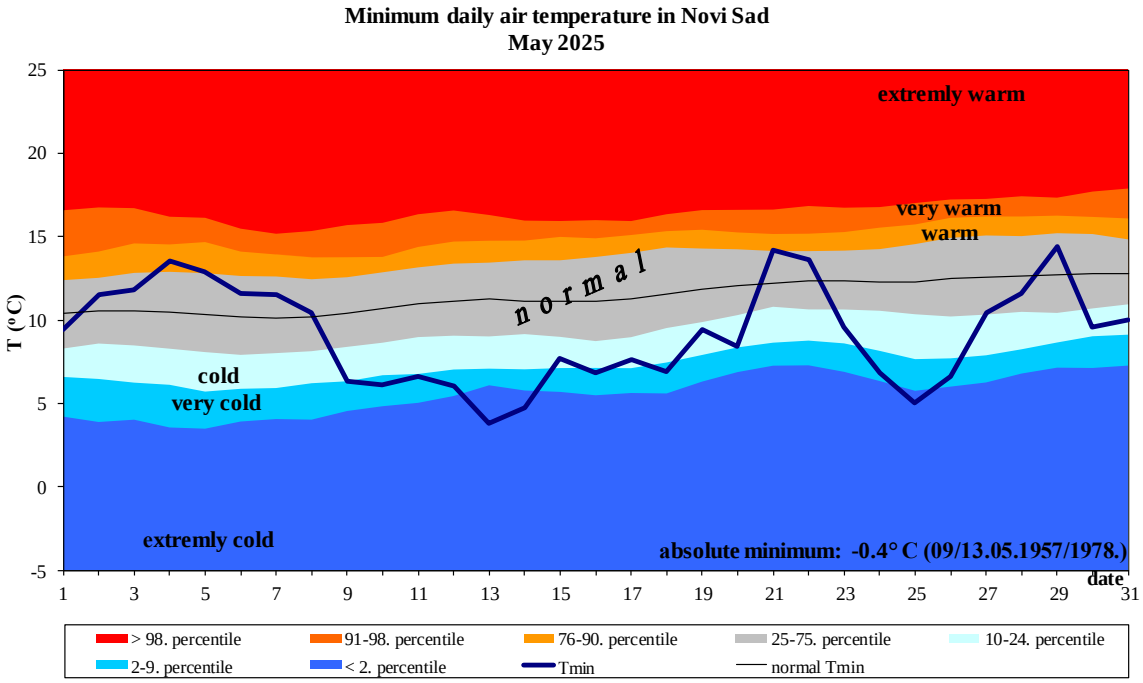


Appendix 16. Daily course of the maximum daily air temeperature and the accompanying percentile for Vranje

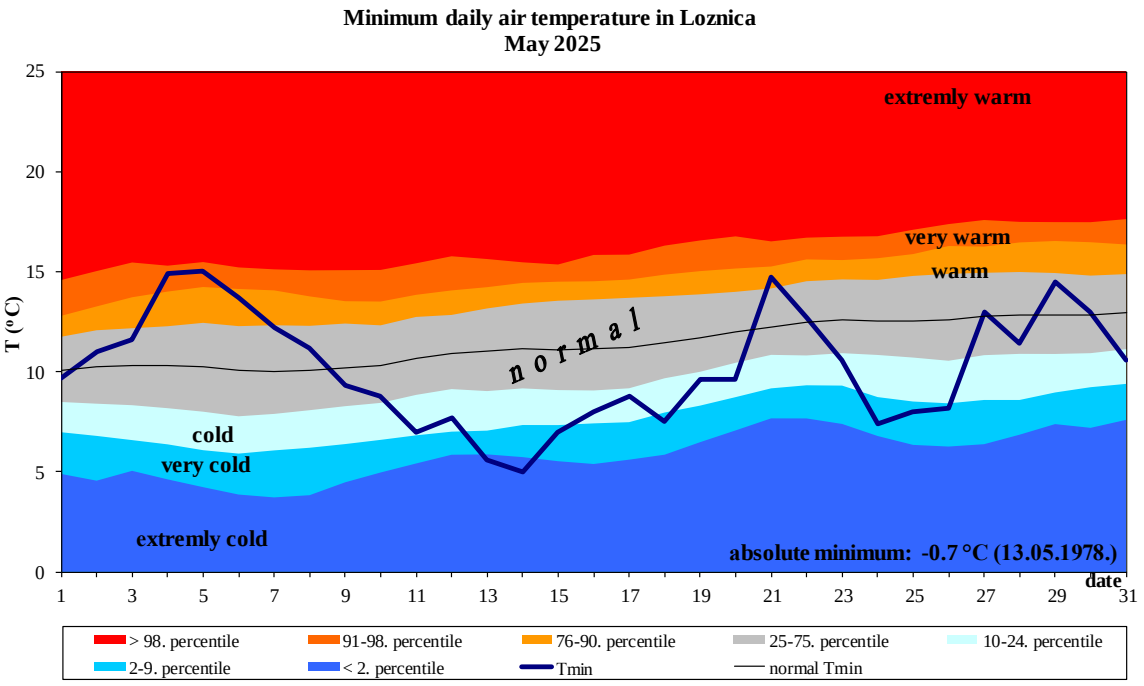
Minimum air temperature



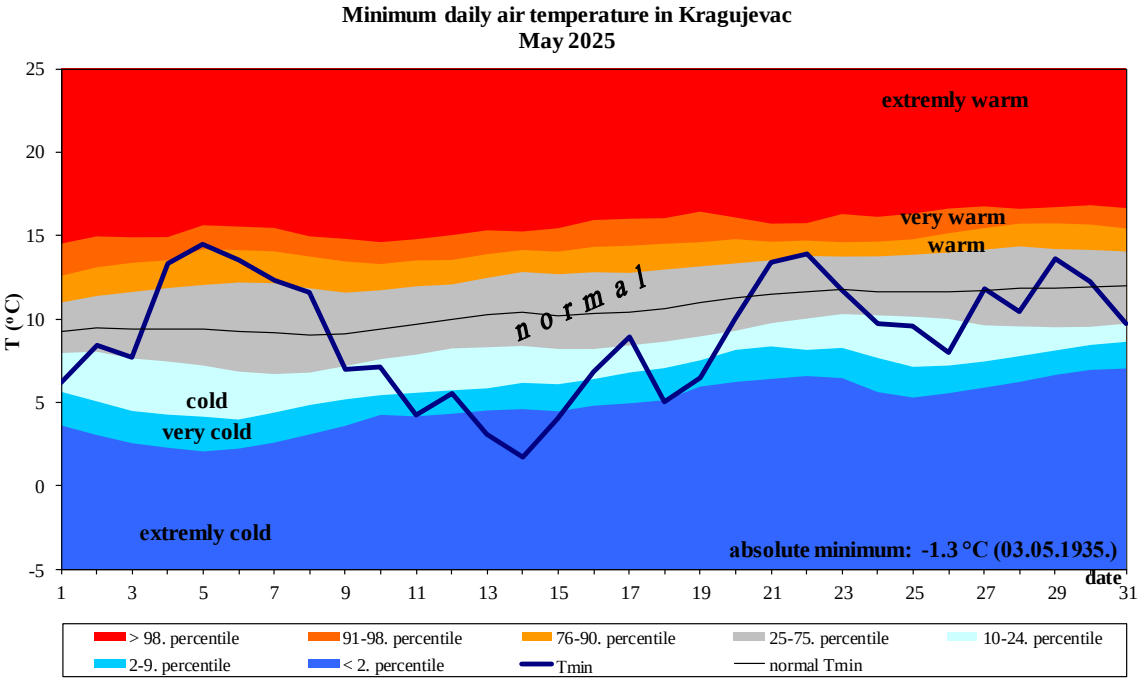
Appendix 17. Daily course of the minimum daily air temperature and the accompanying percentile for Sombor



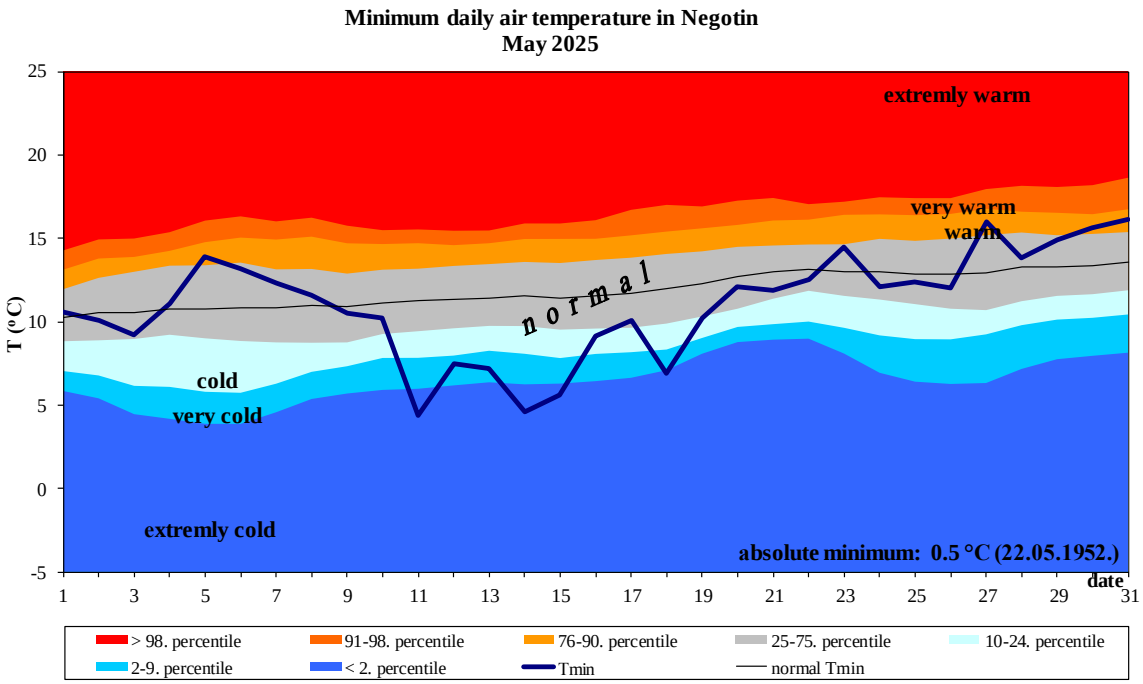
Appendix 18. Daily course of the minimum daily air temperature and the accompanying percentile for Novi Sad



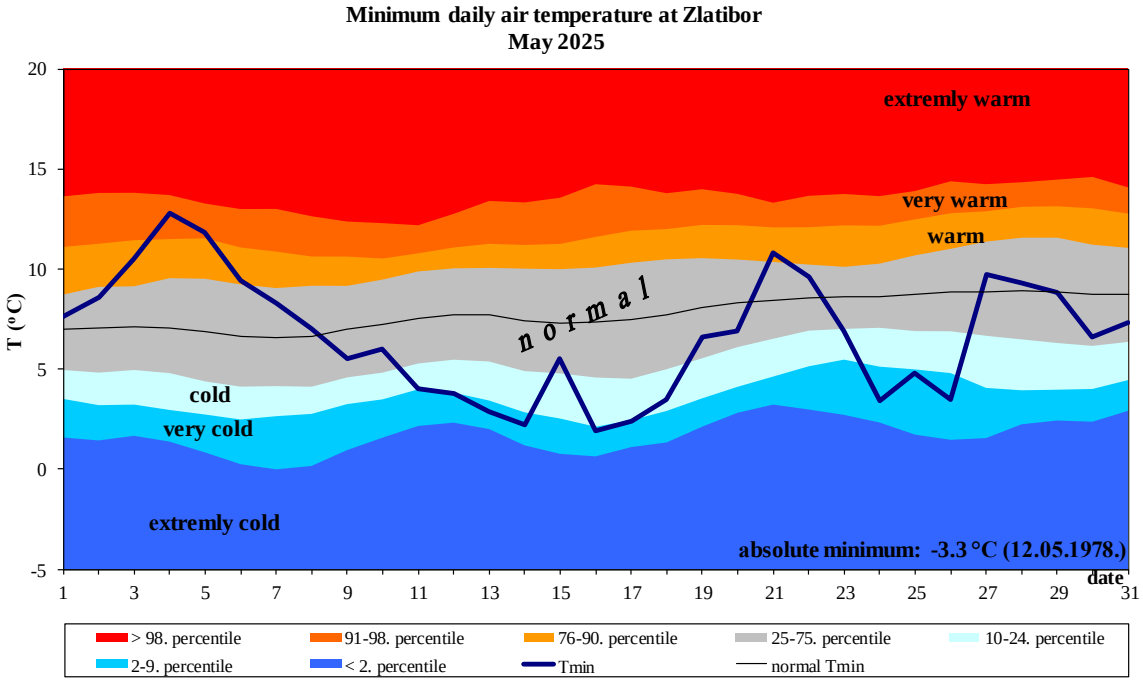
Appendix 19. Daily course of the minimum daily air temperature and the accompanying percentile for Loznica



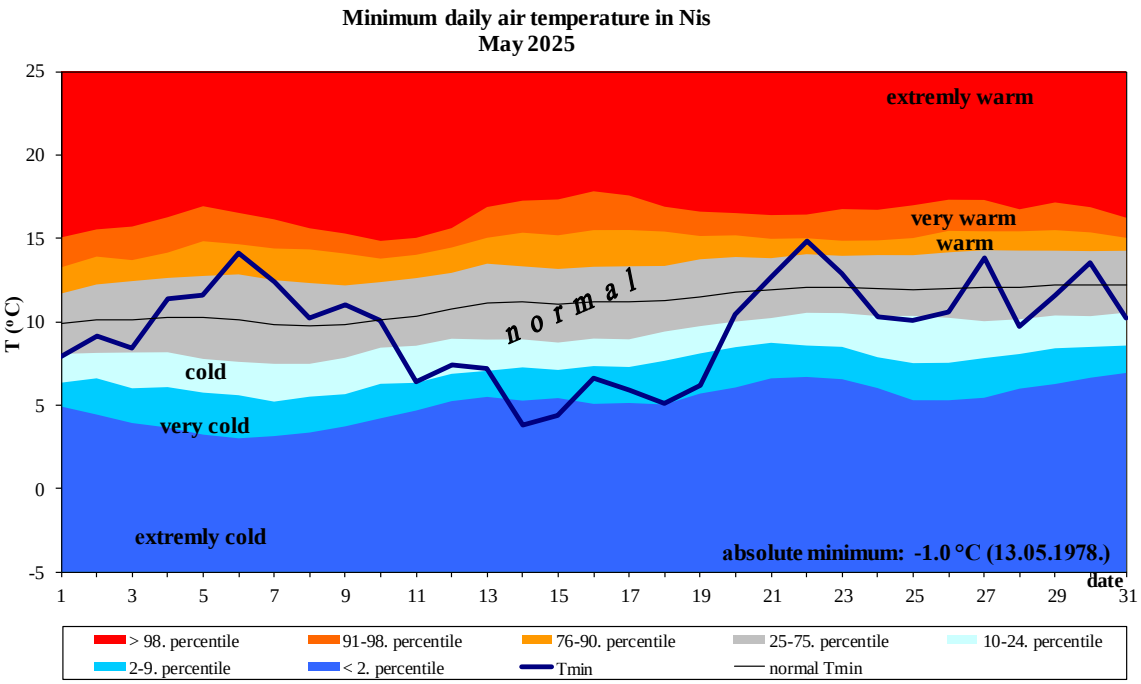
Appendix 20. Daily course of the minimum daily air temperature and the accompanying percentile for Kragujevac



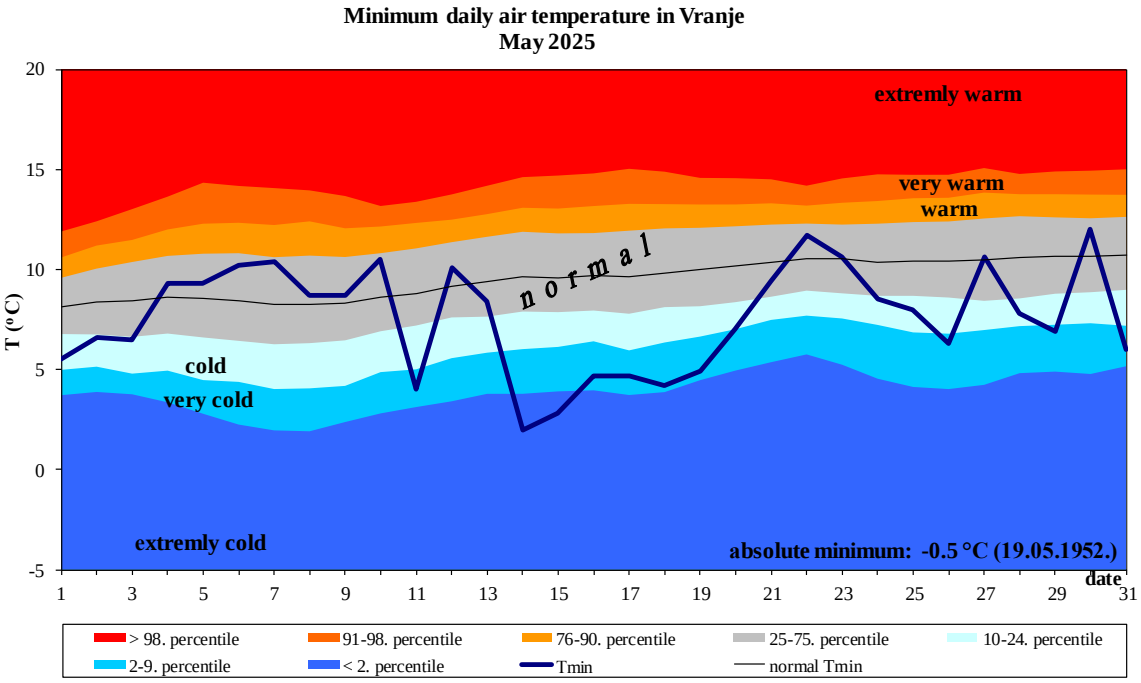
Appendix 21. Daily course of the minimum daily air temperature and the accompanying percentile for Negotin



Appendix 22. Daily course of the minimum daily air temperature and the accompanying percentile on Zlatibor

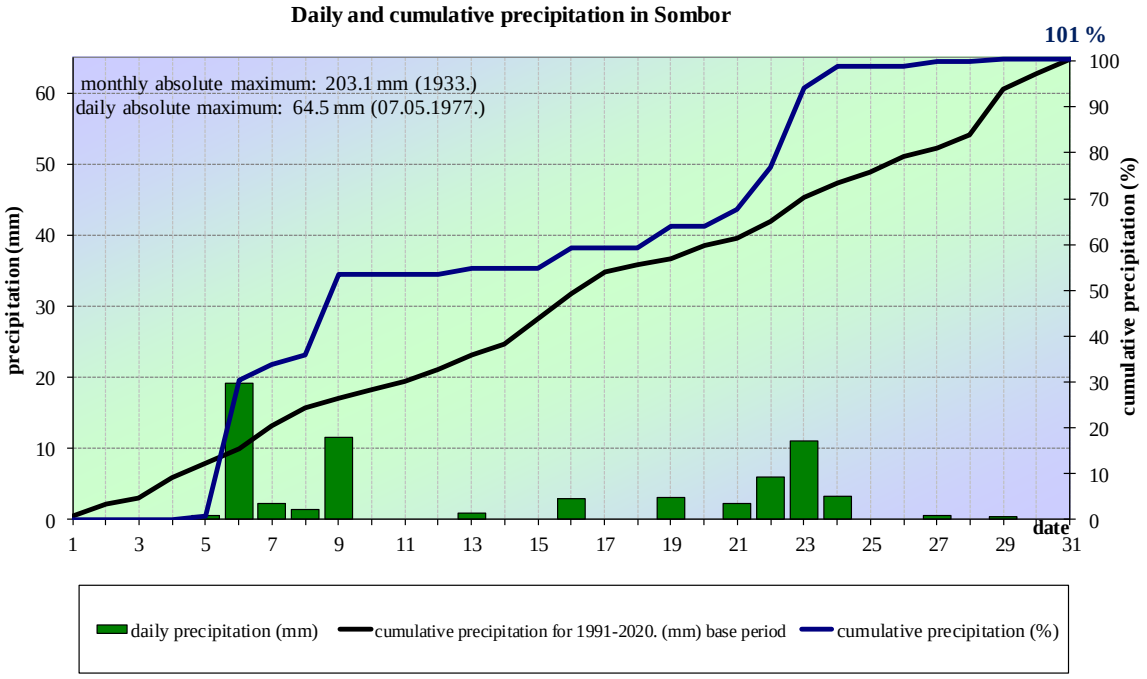


Appendix 23. Daily course of the minimum daily air temperature and the accompanying percentile for Nis

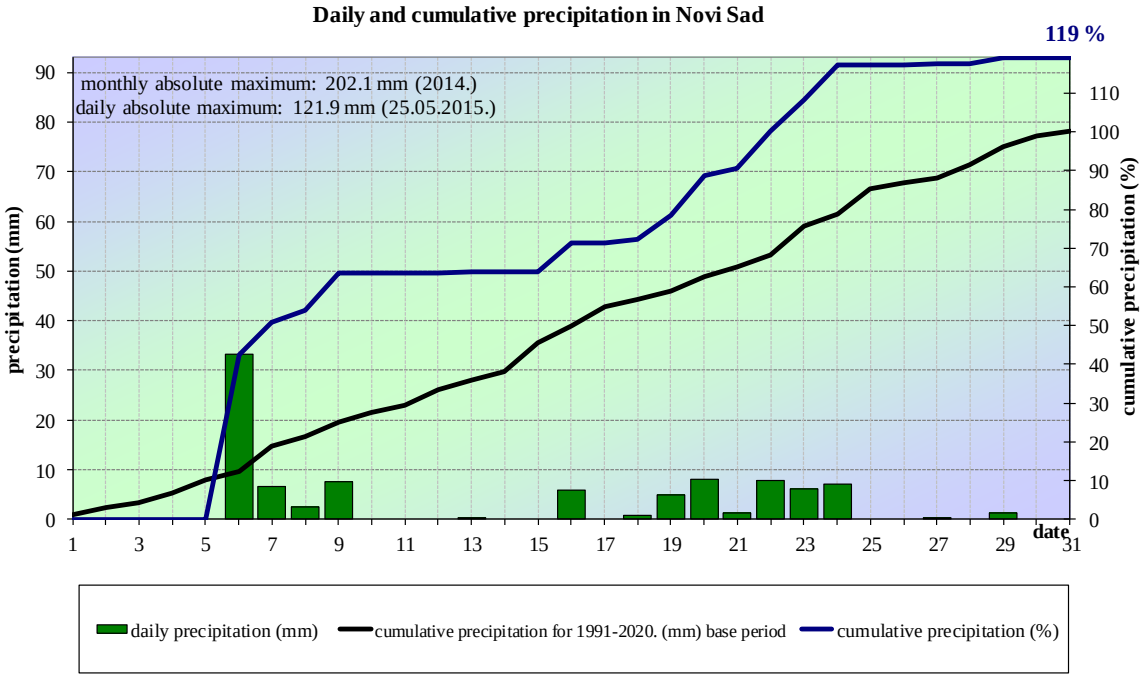


Appendix 24. Daily course of the minimum daily air temperature and the accompanying percentile for Vranje

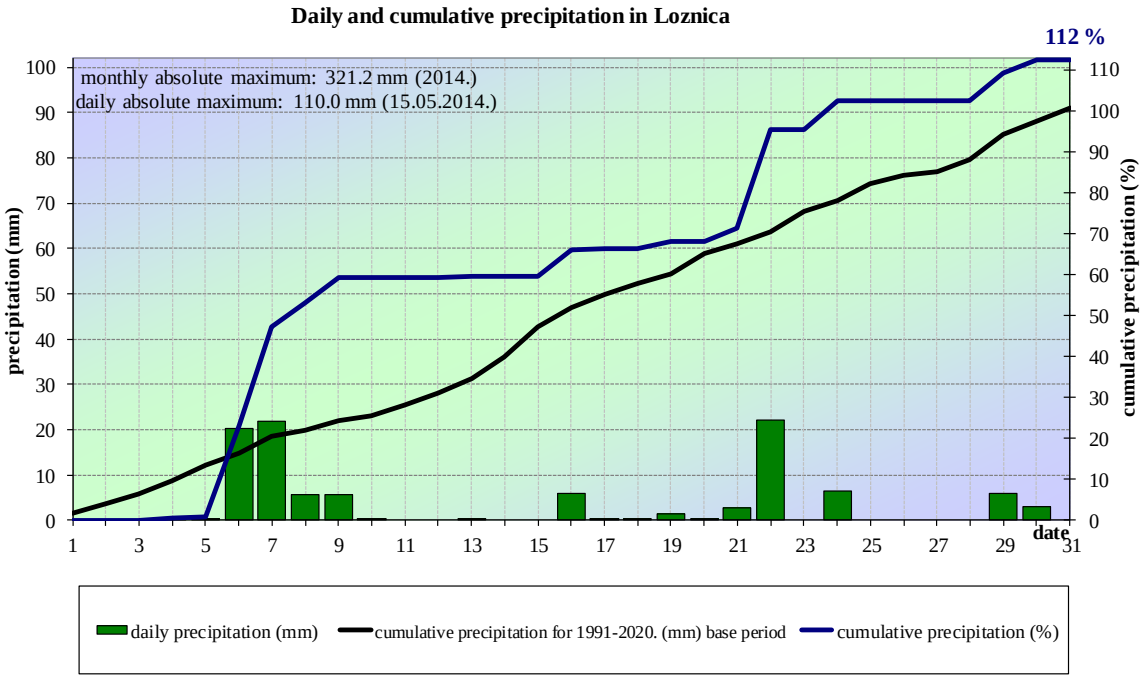
Precipitation



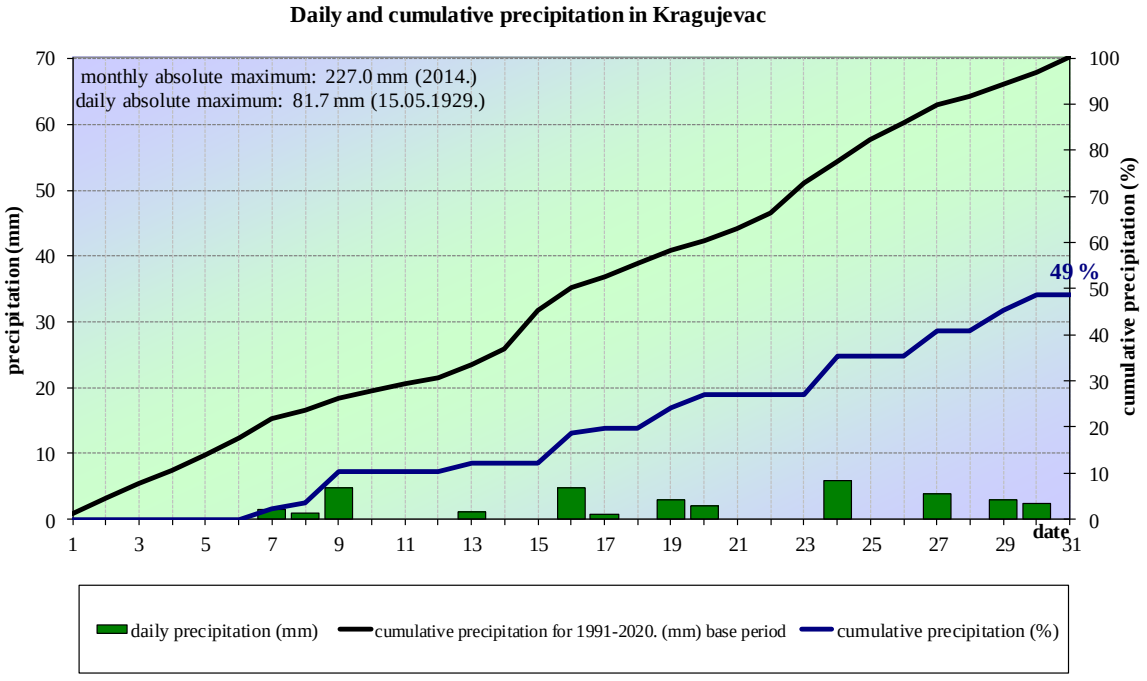
Appendix 25. Daily and cumulative precipitation sums for Sombor



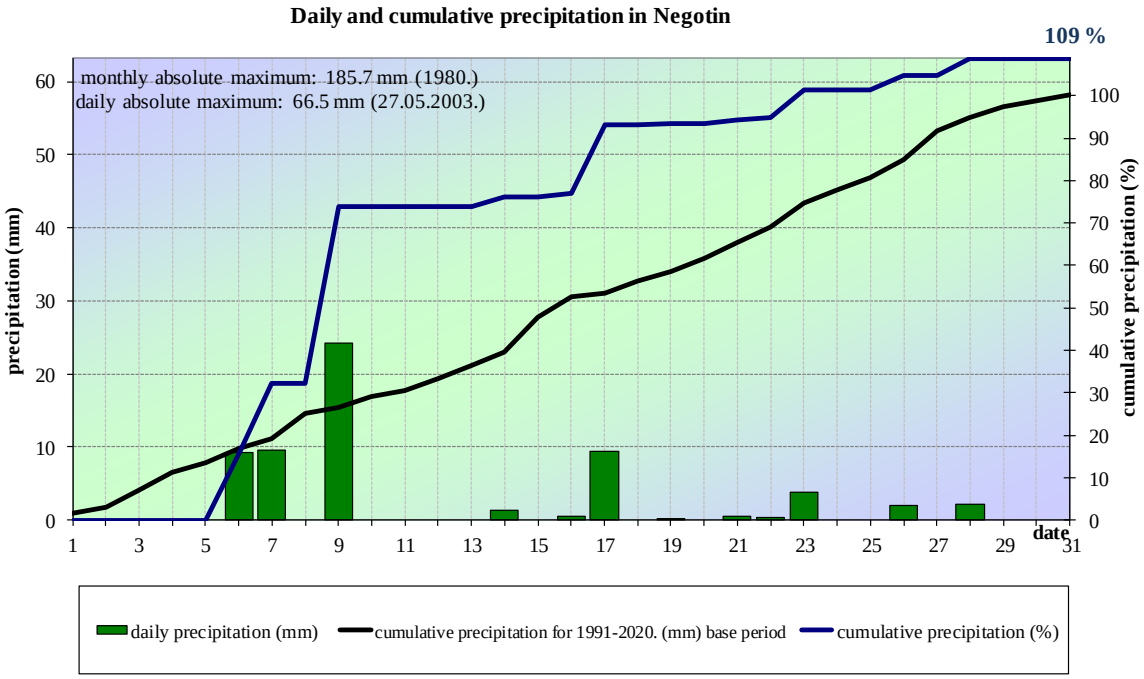
Appendix 26. Daily and cumulative precipitation sums for Novi Sad



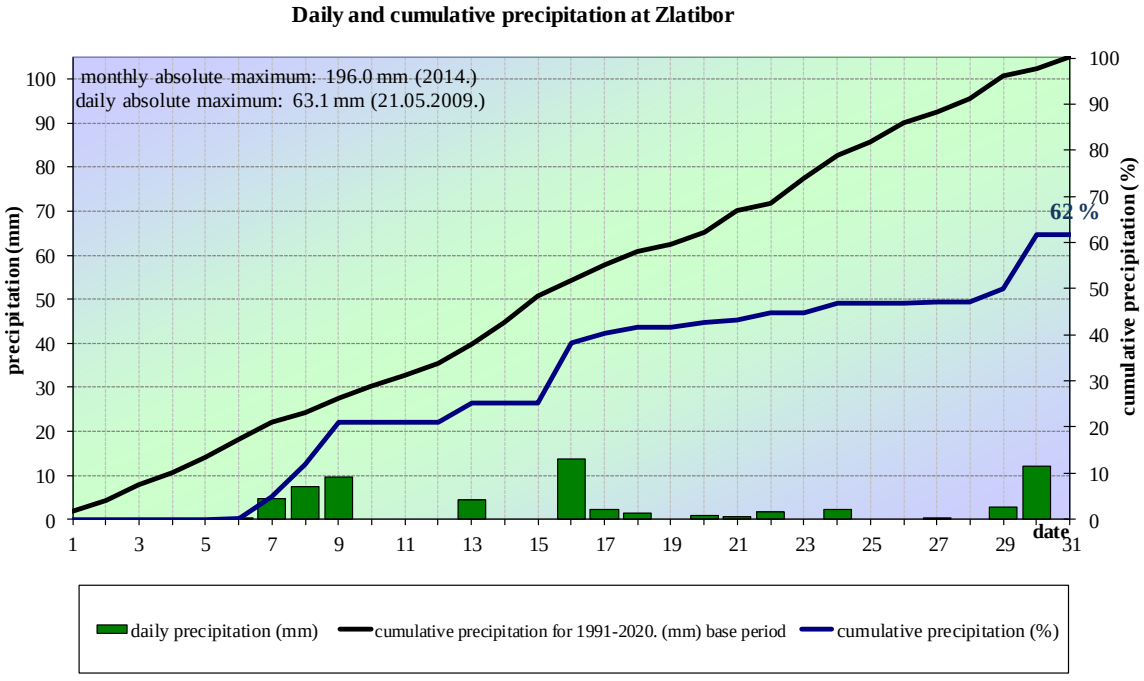
Appendix 27. Daily and cumulative precipitation sums for Loznica



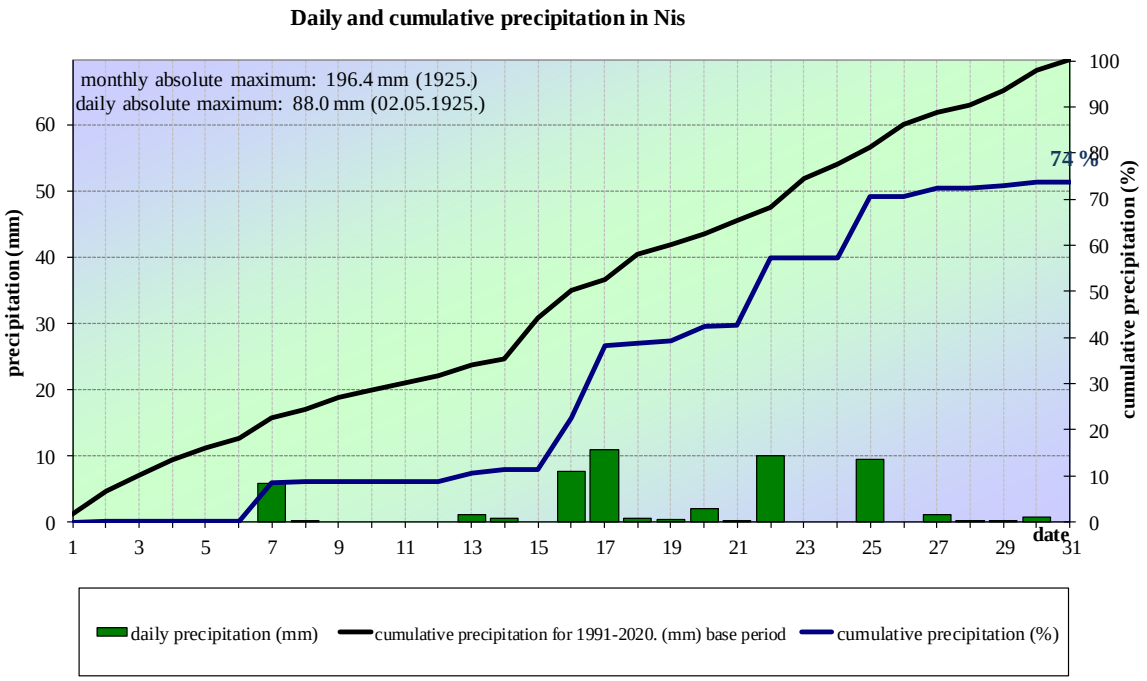
Appendix 28. Daily and cumulative precipitation sums for Kragujevac



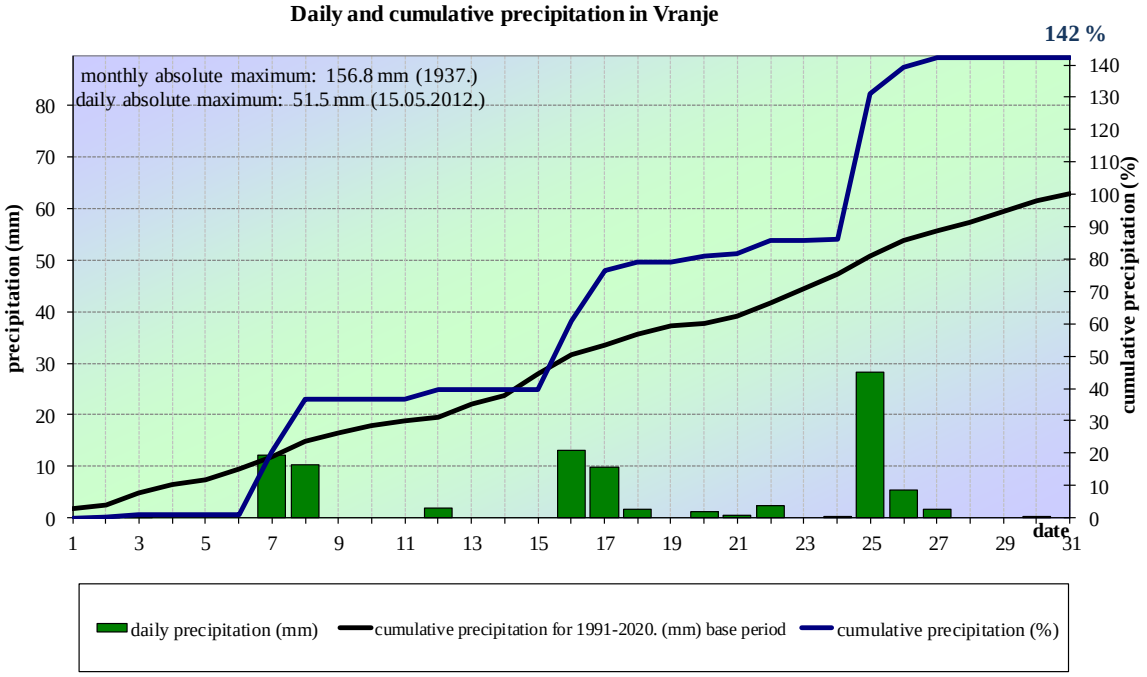
Appendix 29. Daily and cumulative precipitation sums for Negotin



Appendix 30. Daily and cumulative precipitation sums on Zlatibor



Appendix 31. Daily and cumulative precipitation sums for Nis



Appendix 32. Daily and cumulative precipitation sums for Vranje