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Republic of Serbia

MONTHLY BULLETIN FOR SERBIA

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Department of National Center for Climate Change, Climate Model Development and Disaster Risk Assessment
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- ***The 5th wettest and averagely warm November in Serbia***
- ***The wettest November for Leskovac and Vranje since the record-keeping at these stations began***
- ***Heat wave was recorded at the beginning of the month in Novi Sad and Veliko Gradiste, and mid-month on Crni vrh***

AIR TEMPERATURE

Mean monthly air temperature

Mean November air temperature ranged from 5.7 ºC in Pozega to 8.9 ºC in Belgrade, and on the mountains from 2.6 ºC at Kopaonik to 4.8 ºC in Sjenica (*Figure 1*).

Departure of the mean monthly air temperature from the normal[1] for the 1991-2020 base period ranged from +0.3 ºC in Sremska Mitrovica and Zlatibor to +2.0 ºC in Dimitrovgrad (*Figure 2*).

Mean November air temperature, based on the percentile method[2], was in the normal category in most of the country, warm category in Kursumlija, Zajecar, Dimitrovgrad, Vranje, Sjenica and Crni vrh (*Figure 3).*

[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

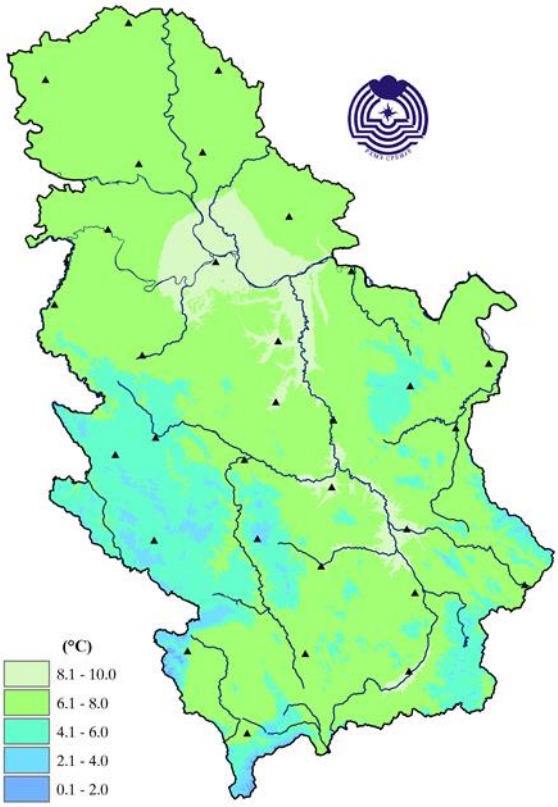


Figure 1. Spatial distribution of mean monthly air temperature (ºC)

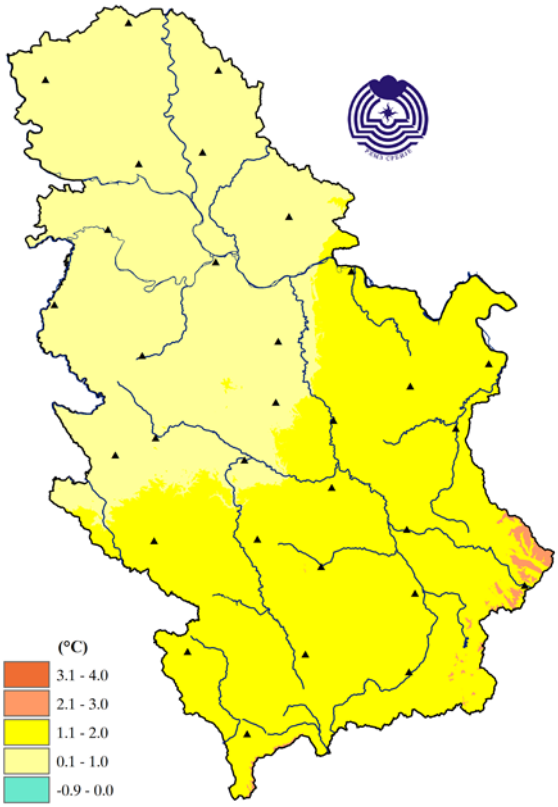


Figure 2. Spatial distribution of mean monthly air temperature anomaly (ºC)

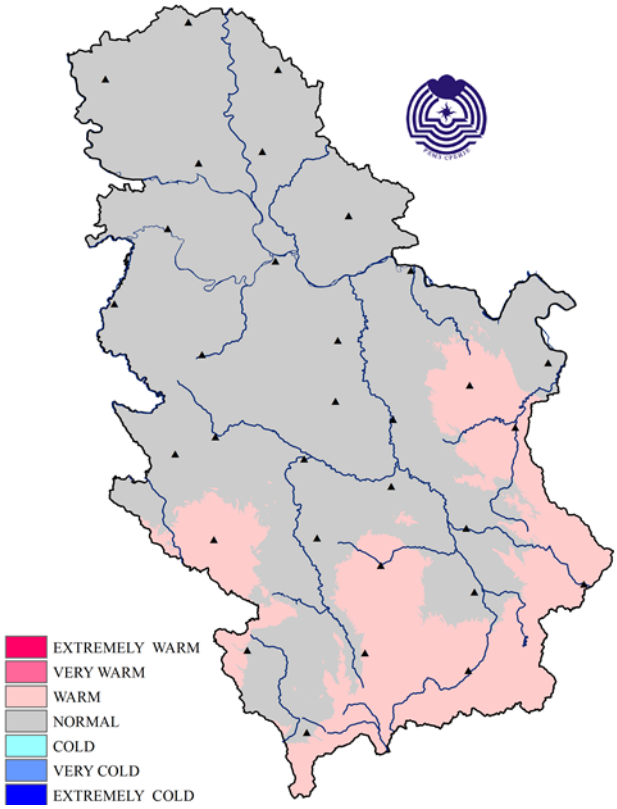


Figure 3. Spatial distribution of the mean monthly air temperature using percentile method

Mean daily air temperature in Belgrade, based on the percentile method, was in the normal category most of November, warm and very warm category at the beginning and mid-month, as well as middle of the third decade, and cold category at the beginning of the third decade (*Figure 4).* 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.

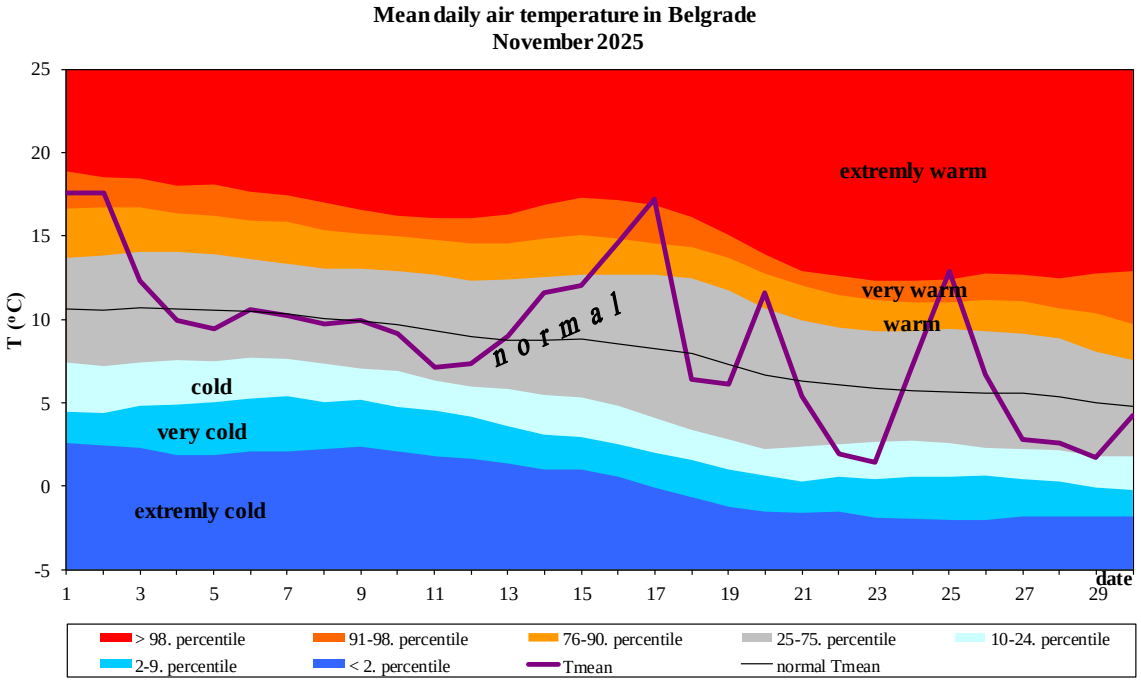


Figure 4. Daily course of the mean daily air temperature and accompanying percentiles for Belgrade

Maximum air temperature

Mean maximum air temperature in November ranged from 10.5 ºC in Negotin to 14.0 ºC in Dimitrovgrad, while Belgrade observed air temperature of 13.3 °C. On the mountains, mean maximum November air temperature ranged from 5.5 ºC at Kopaonik to 10.5 ºC in Sjenica.

Based on the percentile method, mean maximum monthly air temperature was in the normal category in most of Serbia, warm category in Dimitrovgrad and Crni vrh.

The highest maximum daily air temperature of 25.9 ºC was observed in Belgrade on November 2.

One summer day[3] was recorded in Novi Sad, Belgrade and Krusevac.

Ice days [4] were recorded only on the mountains; Kopaonik recorded the highest number – total of 4, Zlatibor – 3, Crni vrh – 2 ice days.

[3] Summer day refers to a day with maximum daily air temperature 25 °C and above
[4] Ice day refers to a day with maximum daily air temperature lower than 0 °C

Heat wave[5] was recorded in Novi Sad in the period from October 29 to November 2, in Veliko Gradiste from October 30 to November 3, and on Crni vrh from November 13 to 17.

Figure 5 shows daily course of the maximum daily air temperature and the accompanying percentiles for Belgrade in November 2025 and for the stations Sombor, Novi Sad, Loznica, Negotin, Kragujevac, Zlatibor, Nis and Vranje are given in the Appendix.

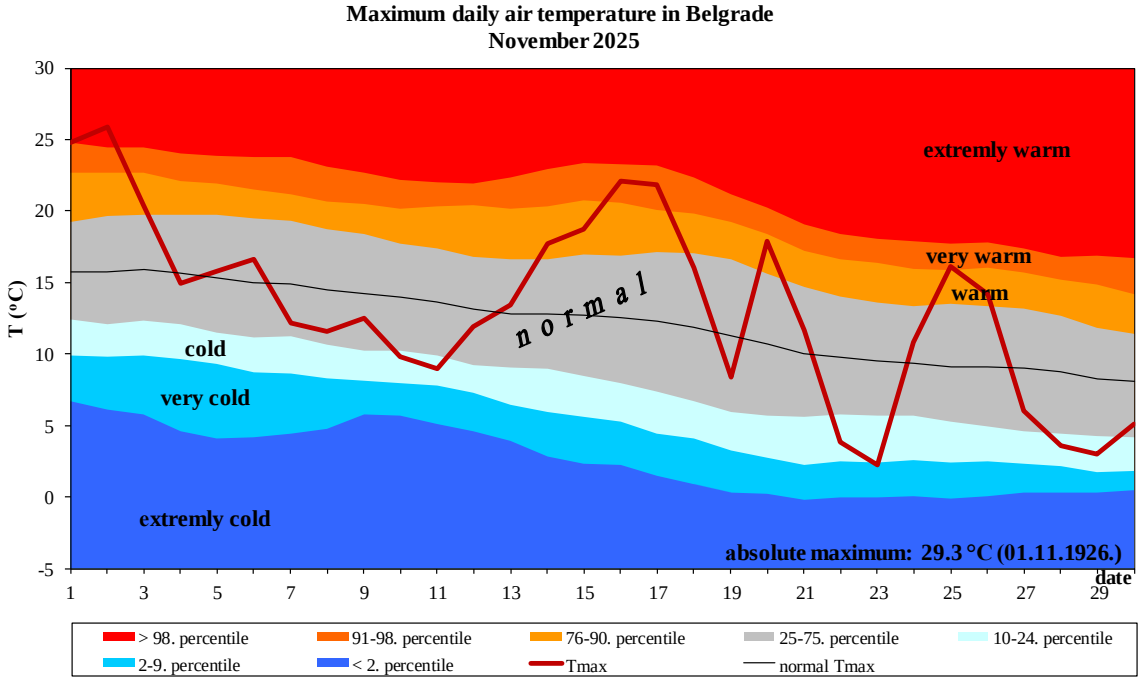


Figure 5. Daily course of the maximum daily air temperature and accompanying percentiles for Belgrade

Minimum air temperature

Mean minimum air temperature in November ranged from 2.1 ºC in Pozega to 5.7 ºC in Belgrade. In the upland, mean minimum air temperature ranged from 0.2 ºC at Kopaonik to 2.0 ºC at Crni vrh.

Based on the percentile method, mean minimum air temperature was in the normal category in the northern, western and parts of central Serbia, warm category in Veliko Gradiste, Sjenica, Krusevac, Nis, Zajecar, Dimitrovgrad, Vranje, Crni vrh and Kopaonik, and very warm in Negotin, Kursumlija and Leskovac.

The lowest minimum daily air temperature of -5.9 ºC was on November 24 at Kopaonik. In the lowland, the lowest daily air temperature of -4.2 ºC was measured on November 24 in Novi Sad. On the same day, Belgrade recorded the lowest November air temperature of -0.4 ºC.

Number of frost days[6] ranged from 1 to 5 in most of the country, while Kragujevac and Nis didn't observe any. As for the upland, highest number of frost days, total of 14, was recorded at Kopaonik, Sjenica recorded 13 days, Crni vrh and Zlatibor – 11. In most of the country, number of frost days was 4 to 7 days below November average.

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

[6] Frost day is defined as the day with minimum air temperature lower than 0 °C

Figure 6 shows assessment of the minimum and maximum air temperature in Serbia for November based on the tercile distribution relative to the 1991-2020 base period. It can be noted that mean minimum air temperature was above upper tercile threshold and the mean maximum air temperature was within the average.

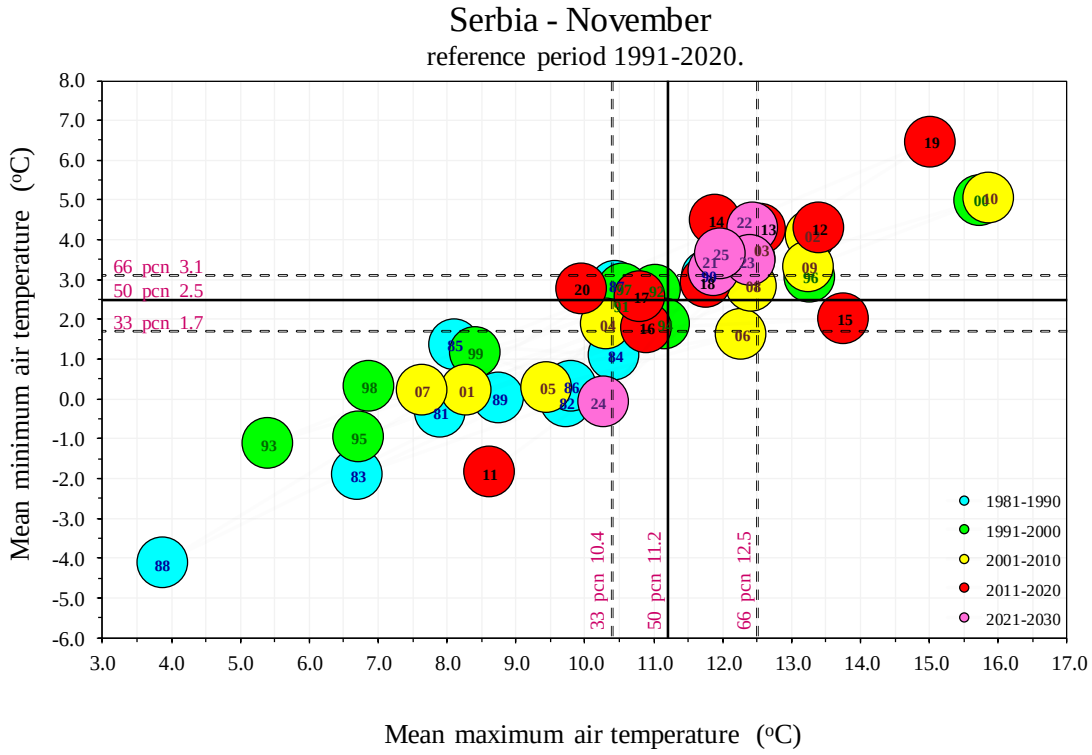


Figure 6. Assessment of minimum and maximum air temperature for Serbia with the accompanying terciles in relation to the 1991-2020 base period

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

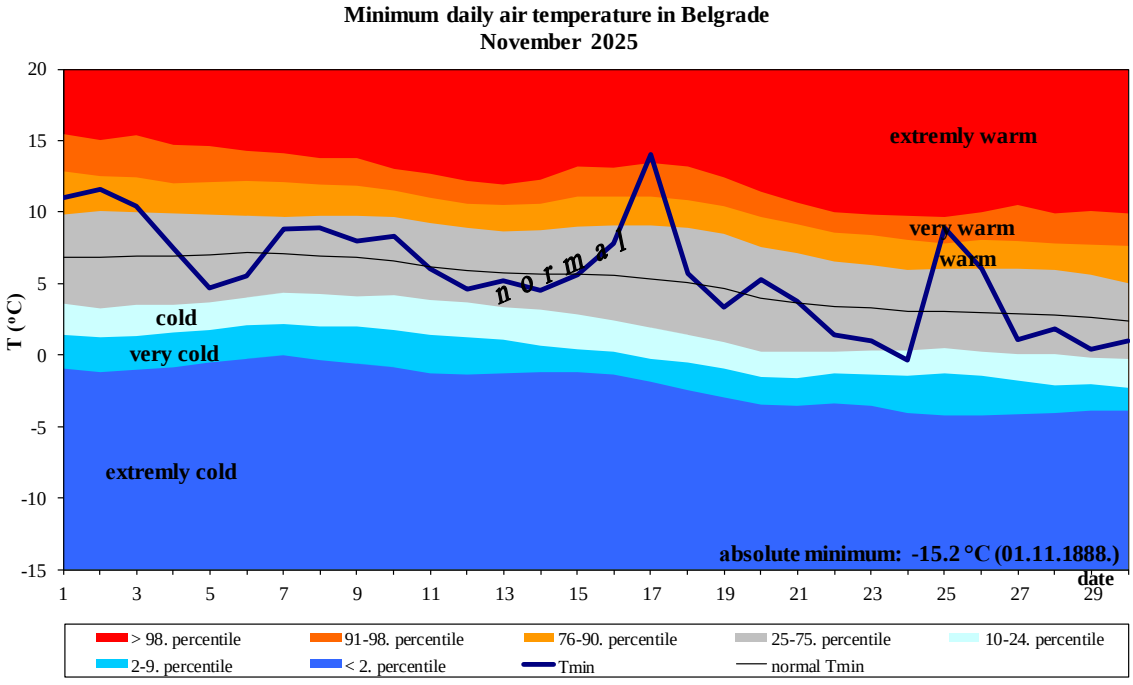


Figure 7. Daily course of the minimum daily air temperature and accompanying percentiles for Belgrade

PRECIPITATION

November 2025 ranks as **the 5th wettest** for Serbia since 1951 (Figure 8). **The wettest** November on record was in Leskovac and Vranje. November 2025 was among the 10 wettest since the record-keeping at 17 stations in Serbia began (*Table 1).* The recorded precipitation sums were **four times higher** in Leskovac and Vranje, and **three times higher** in Nis compared to the average.

In the appendix are graphs showing 15 wettest years since the record-keeping began for the stations: Leskovac, Vranje, Crni Vrh, Kopaonik, Nis, Kursumlija i Dimitrovgrad.

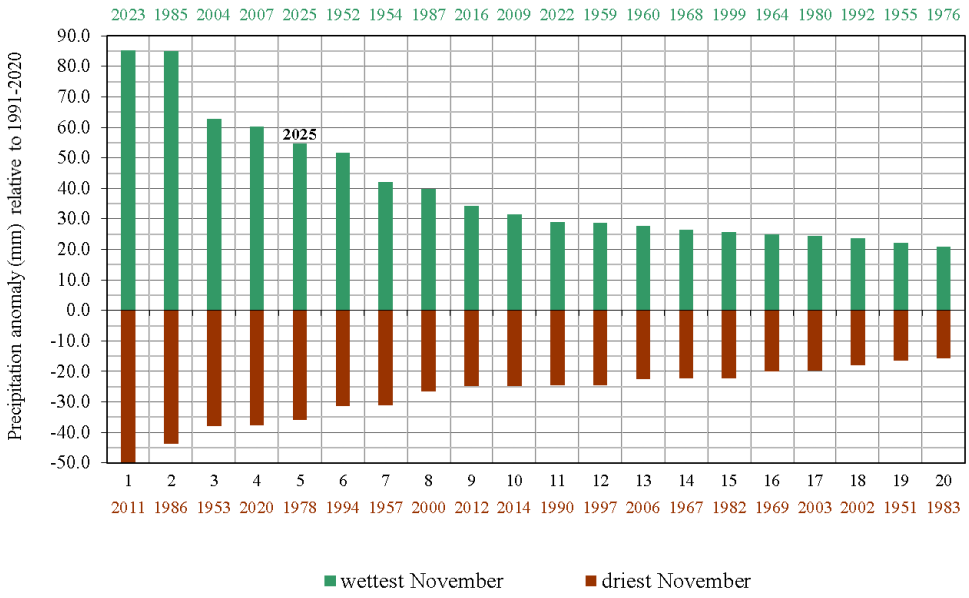


Figure 8. Rank of the wettest and driest November in Serbia for the period from 1951 to 2025

Table 1. Ranking of November 2025 in terms of precipitation, average, and percentage of the 1991-2020 normal

STATION	historical period	∑RR for November 2025 (mm)	normal for November 1991-2020	percentage (%) from normal	Ranking for November 2025 (descending RR)
LESKOVAC	1925-2024	**243.1**	55.5	438	1
VRANJE	1926-2024	212.6	54.3	391	1
CRNI VRH	1966-2024	148.3	60.9	243	2
KOPAONIK	1949-2024	199.0	75.1	265	3
NIS	1925-2024	148.5	49.0	303	3
KURSUMLIJA	1925-2024	131.8	51.7	255	3
DIMITROVGRAD	1926-2024	132.7	48.2	275	4
CUPRIJA	1926-2024	112.4	49.1	229	5
KRUSEVAC	1925-2024	113.0	49.3	229	6
V.GRADISTE	1926-2024	98.8	45.4	218	7
SJENICA	1925-2024	121.9	67.9	180	8
ZAJECAR	1925-2024	112.5	47.6	236	8
KRALJEVO	1926-2024	104.4	49.0	213	8
KRAGUJEVAC	1925-2024	97.7	44.6	219	8
S.PALANKA	1926-2024	92.6	44.5	208	9
ZLATIBOR	1950-2024	130.1	80.4	162	10
POZEGA	1925-2024	104.9	54.3	193	10

November precipitation sums ranged from 42.9 mm on Palic to 243.1 mm in Leskovac, while Belgrade recorded 65.0 mm (*Figure 9*).

Precipitation totals compared to the normal for the 1991-2020 base period ranged from 98% on Palic to 438% in Leskovac (*Figure 10).*

Based on the percentile method, precipitation sums were in the categories of normal and rainy in the northern, northwestern parts of the country, Belgrade and Negotin, elsewhere it was rainy and extremely rainy (*Figure 11).*

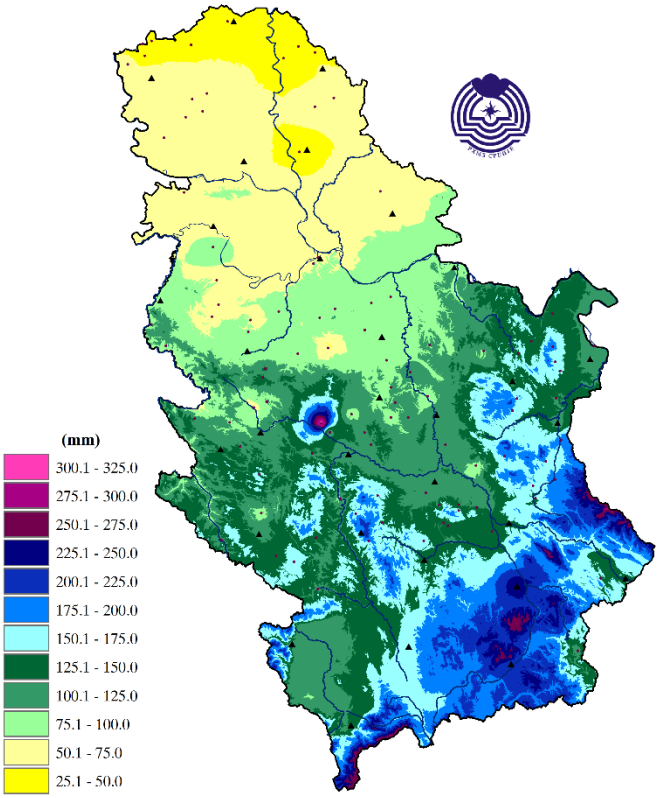


Figure 9. Spatial distribution of the monthly precipitation sums (mm) according to data from 28 major meteorological, 20 climatological and 82 rain gauge stations

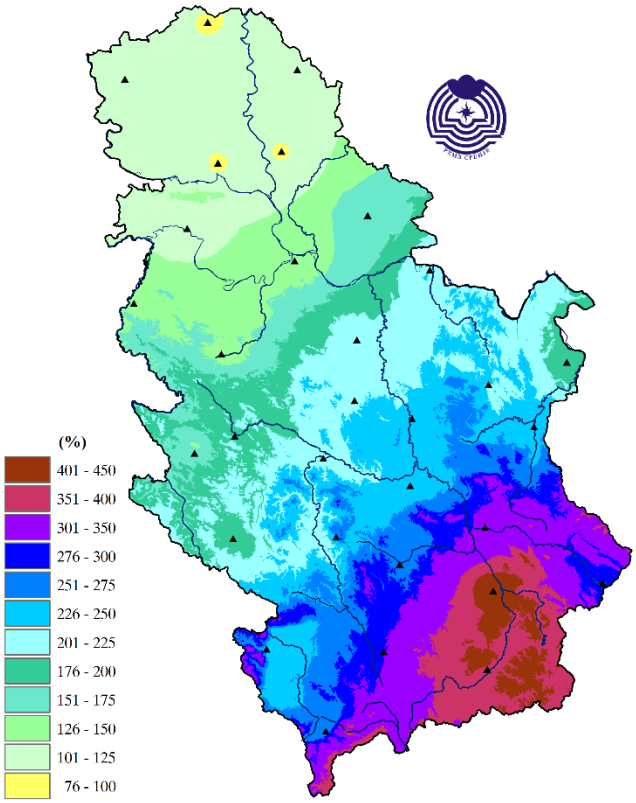


Figure 10. Spatial distribution of the monthly precipitation sums in the percentages of normal for the 1991–2020 base period

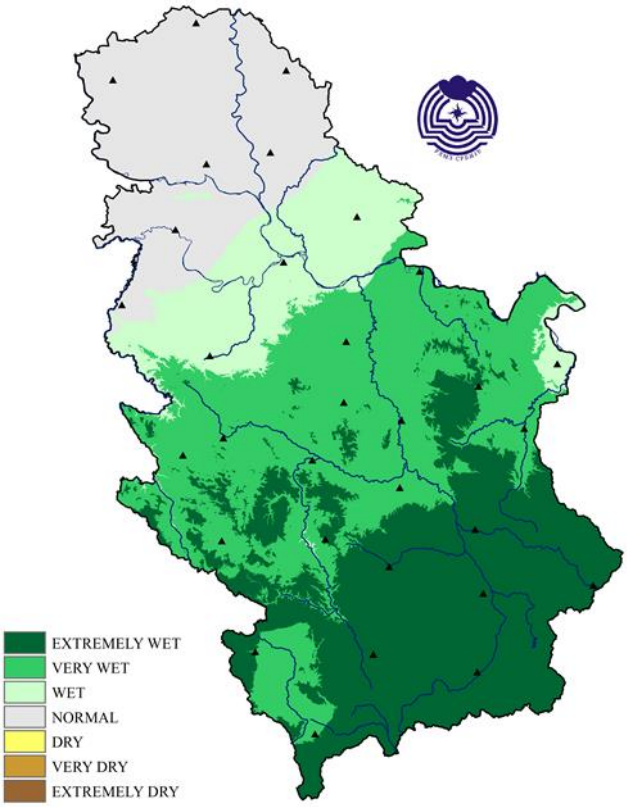


Figure 11. Monthly precipitation sums according to the percentile method

The highest daily precipitation sum of 69.2 mm was recorded in Vranje on November 19. On November 9, Belgrade recorded the highest daily precipitation sum of 13.3 mm.

Number of days with precipitation in November ranged from 12 on Palic to 19 in Dimitrovgrad *(Figure 12).* The recorded number of days with precipitation was 1 to 8 times above the November average (*Figure 13).*

Vranje recorded 1 day with precipitation of 50 mm and higher.

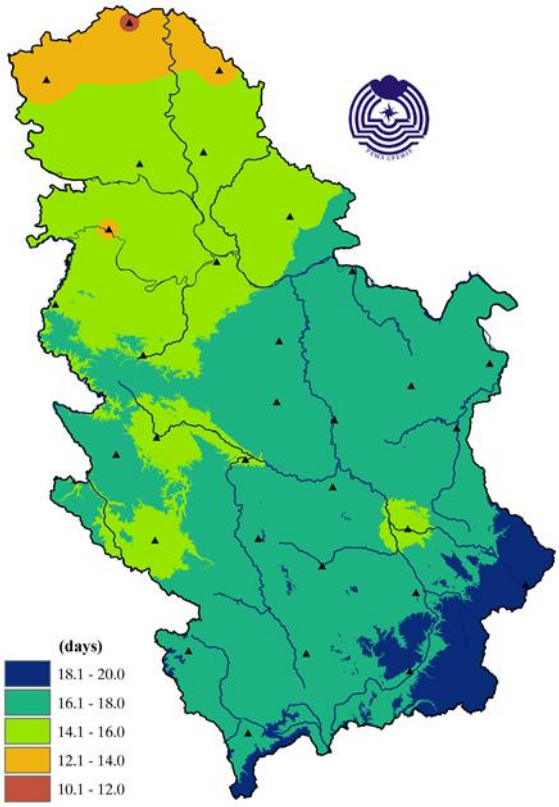


Figure 12. Spatial distribution of number of days with precipitation

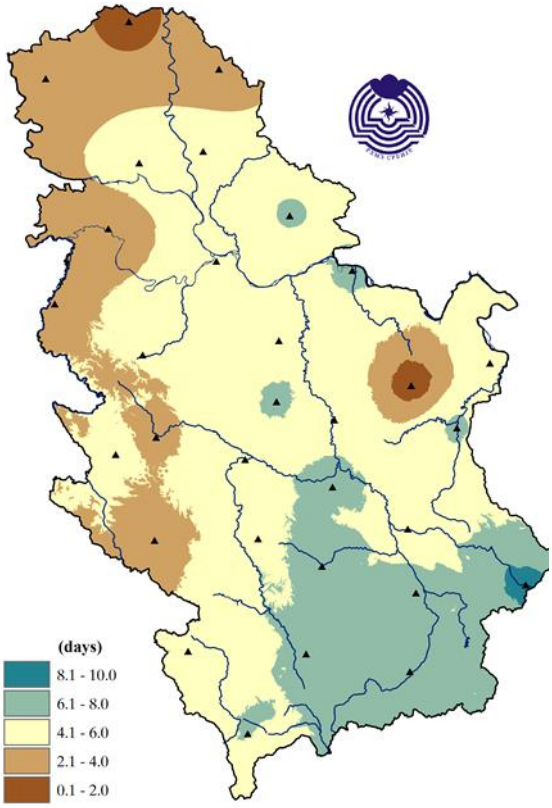


Figure 13. Spatial distribution of deviation of number of days with precipitation

Snow cover was recorded in the second half of December, apart from the mountains and lowland of central and western Serbia. The highest snow depth of 32 cm was measured at Zlatibor on November 29. On the same day, Pozega recorded 8 cm.

Snow cover pertained from 1 to 4 days, in Pozega up to 8 days. On the mountains, number of days with snow cover ranged from 2 at Crni vrh to 9 days at Kopaonik. November average for Serbia is around 2 days with snow cover, which wasn't the case this November at most places.

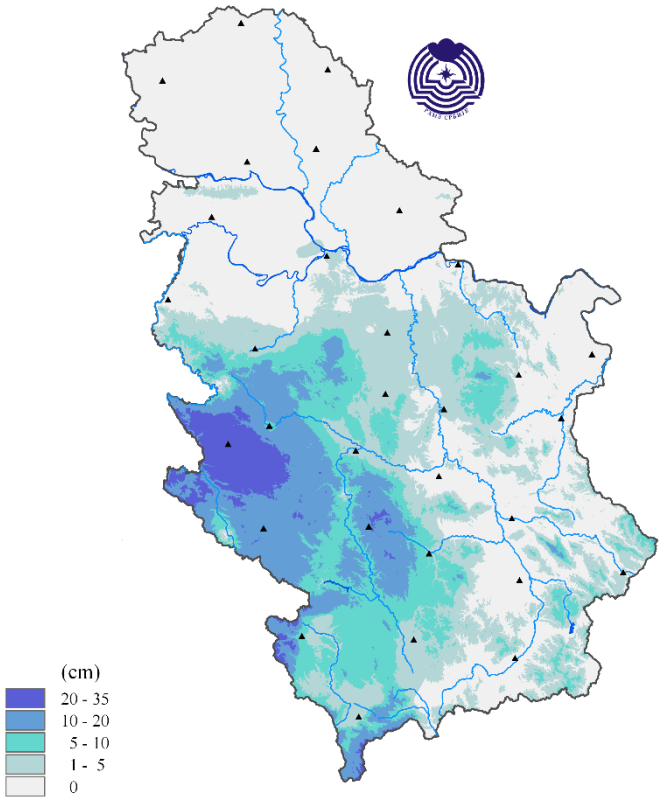


Figure 14. Snow cover height (cm) in Serbia at 8 a.m. on November 29, 2025

Figure 15 shows assessment of air temperature and precipitation sums for Serbia for November based on the tercile distribution relative to the 1991–2020 base period. It can be noted that November 2025 was marked by air temperature at the upper tercile threshold and precipitation sums significantly above upper tercile threshold.

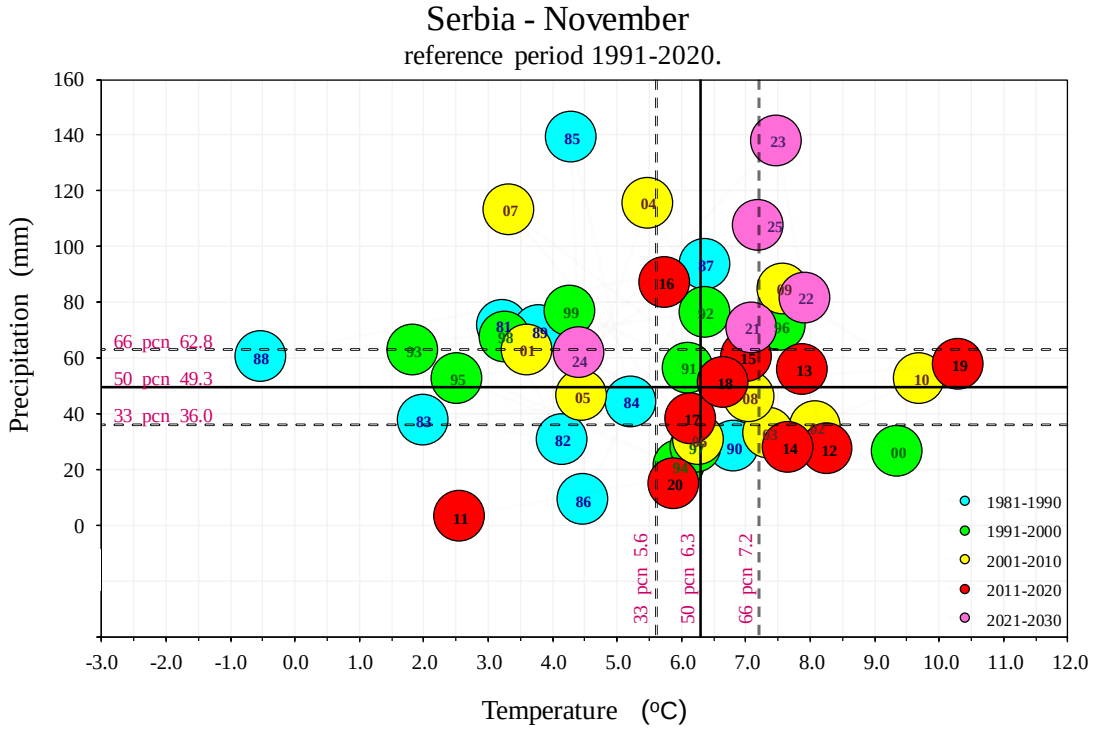


Figure 15. Assessment of air temperature and precipitation for Serbia with the accompanying terciles in relation to the 1991-2020 base period

Figure 16 show daily and cumulative precipitations sums with averaged normal 1991-2020 for November in Belgrade, and for the stations Sombor, Novi Sad, Loznica, Negotin, Kragujevac, Zlatibor, Nis and Vranje precipitation sums are given in Appendix.

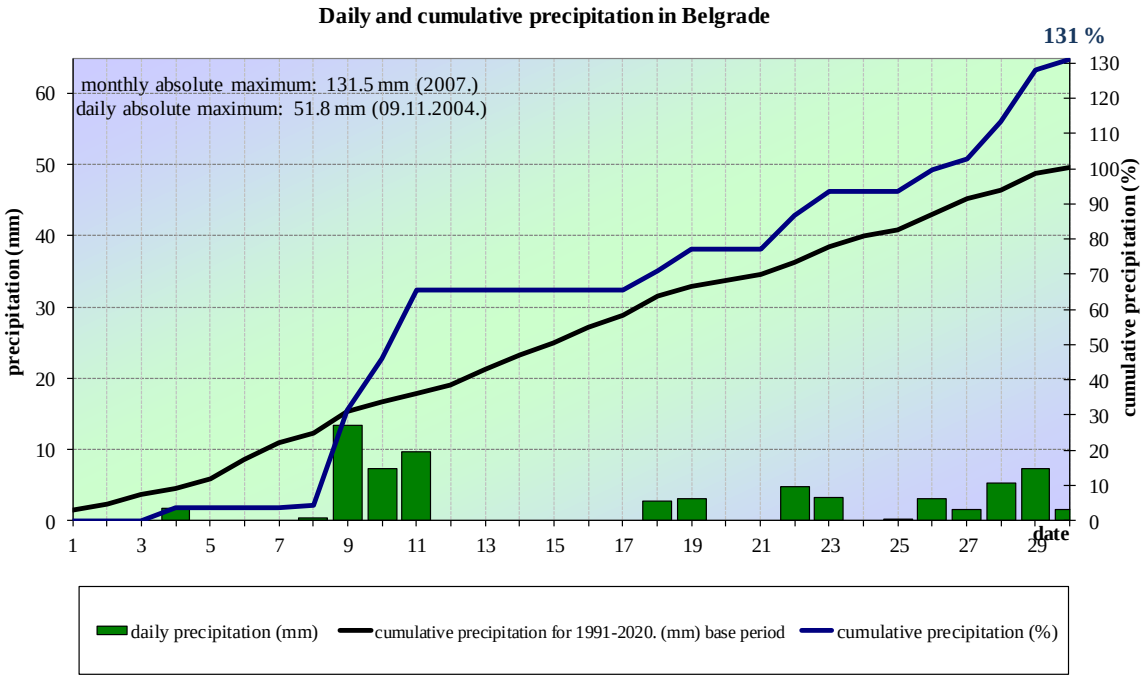


Figure 16. Daily and cumulative precipitation in Belgrade

Fog

Fog consists of tiny water droplets or ice crystals (ice fog) that remain suspended in the air and reduce horizontal visibility to below 1 km. Fog as a whole is whitish, but in large cities and industrial areas, due to the presence of smoke and dust, it may have a dirty yellow or grayish color[7].

Fog, as a ground-level cloud, is climatologically important for two reasons. First, during the day it prevents solar heating, and at night it limits terrestrial radiation. Second, fog is—to some extent—a source of atmospheric moisture. Fog usually does not produce a measurable amount of precipitation, but it partially replaces it for vegetation[8].

In the lowland, number of days with the fog[9] ranged from 1 in Nis to 9 in Sombor, even up to 20 days in Pozega, whilst Dimitrovgrad didn't see any fog days. Belgrade recorded 7 fog days. In the upland, number of fog days ranged from 9 in Sjenica to 23 at Kopaonik.

As for the lowland, the highest consecutive number of fog days was recorded in Sombor, from 12 to 18 November (7 days). In the upland, the longest lasting fog was registered almost on a daily basis for 14 consecutive days, from 17 to 30 November, at Kopaonik.

Most of the country recorded around average number of fog days for November. Nis saw 10 days below the average, Pozega – 5 days below the average, and Kopaonik 6 days above the November average.

[7] Source: „Guideline for observation and measurements at main meteorological stations": Editon of the Federal hydrometeorological service, Belgrade 1974
[8] Source: „Climatological statistics"; Dr Pavle Vujević, Belgrade 1956
[9] Day with fog is defined as the day when fog is observed at the meteorological station

CLOUD COVER, BRIGHT AND CLOUDY DAYS

Mean November cloud cover in Serbia was around and slightly above the average, ranging from 7/10 to 8/10. Figures 17, 18 and 19 show average daily cloud cover for Belgrade, Pozega and Sombor.

Bright days[10] were not recorded in Pozega, whilst Nis registered the highest number, total of 6 bright days. Belgrade saw 4 bright days. The recorded number of bright days was around and slightly below November average in most of the country.

Number of cloudy days[11] ranged from 15 in Sombor, Loznica, Kragujevac and Dimitrovgrad to 21 days in Pozega and Crni vrh. Belgrade recorded 16 cloudy days. Number of cloudy days was 3 to 8 days above November average.

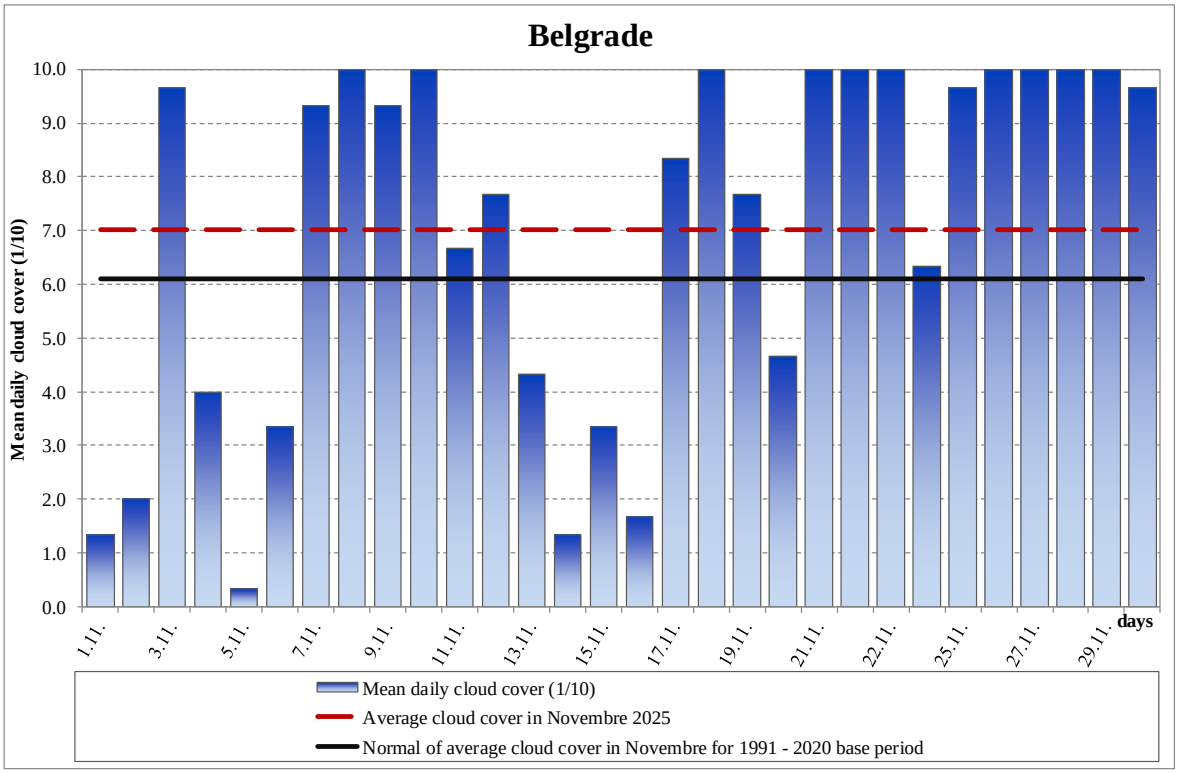


Figure 17. Mean daily cloud cover in Belgrade

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

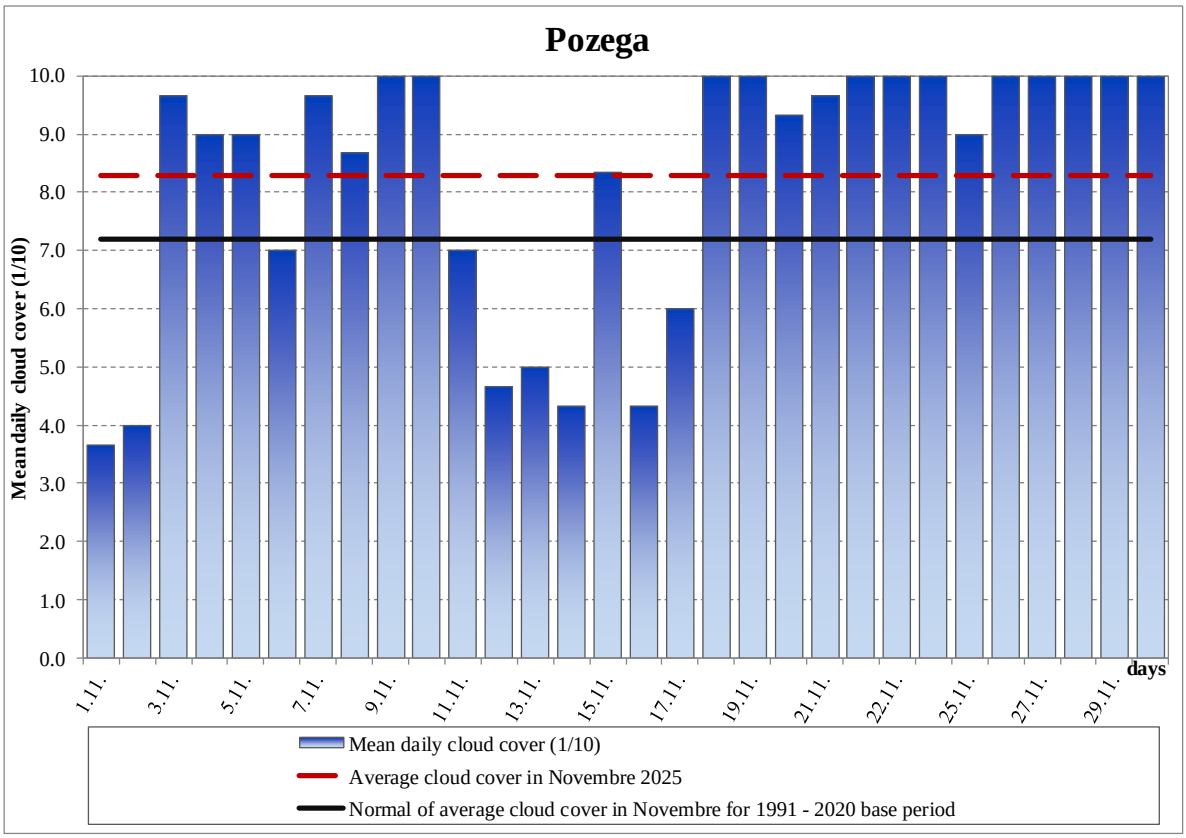


Figure 18. Mean daily cloud cover in Pozega

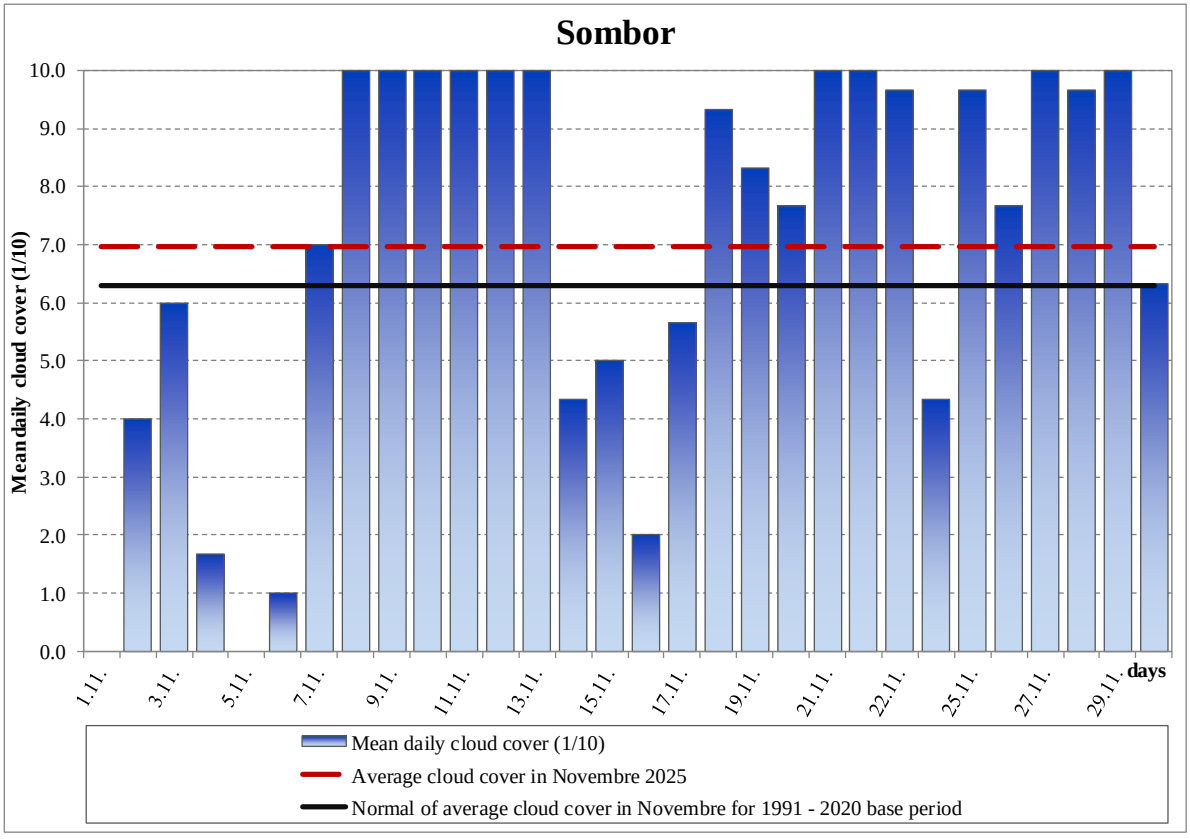


Figure 19. Mean daily cloud cover in Sombor

SUNSHINE DURATION (INSOLATION)

Sunshine duration in November ranged from 49.2 hours in Leskovac to 88.1 hours in Belgrade (*Figure 20*).

November insolation ranged from 58% in Leskovac to 103% in Loznica compared to the normal for the 1991-2020 base period (*Figure 21*).

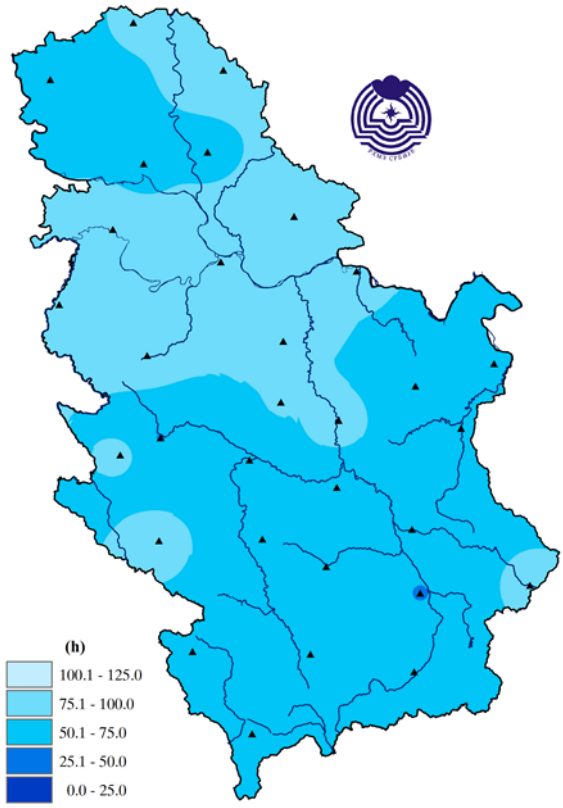


Figure 20. Insolation, expressed in hours

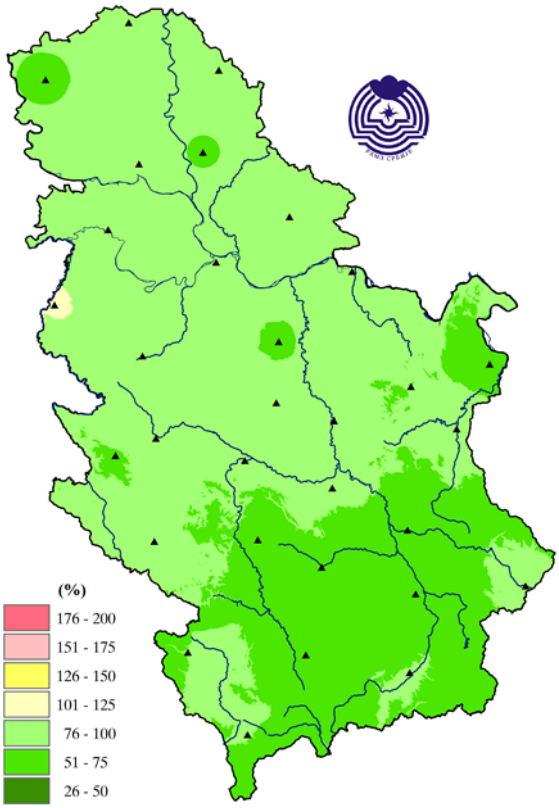


Figure 21. Insolation expressed in the percentages of normal

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

OVERVIEW OF THE SYNOPTIC SITUATION*

At the beginning of the month, there was "golden autumn," with a warm air mass within a ridge extending from the Mediterranean and high geopotential values. Then, for most of the month, the weather was changeable with precipitation, and during the third decade several notable and rapid changes took place, influenced by low-pressure systems originating from the Mediterranean, the Adriatic, and the Black Sea, as well as by cold air masses from the north and northeast. There was also a period of warm and dry weather during most of the second decade due to the presence of a weakly developed field of increased air pressure and geopotential.

Period at the beginning of the month was marked by continuation of warm weather and golden autumn due to the persistence of warm air mass within the ridge extending from the western and central Mediterranean and an increased air pressure field across the Balkans, on the front side of a broad and developed depression, that is, low pressure from the west and northwest of the continent. Then, development of a low pressure system took place in the western Mediterranean and the passage of a cold front across our territory from the northwest and west eastward and toward the Carpathians, as well as the accompanying upper air trough. Brief cloudiness with rain and showers, more pronounced in the central, southern and southeastern parts, and a notable temperature drop were observed. Then, a short-lived establishment of an anticyclone and a ridge followed, mostly dry and relatively warm weather. The second part of the decade was marked by a regenerated upper-air low pressure system from the east, from the area of southern Ukraine and the Carpathians, which was moving retrogradely westward toward our region, while at the same time the low pressure system in the western Mediterranean was strengthening, and later also over the Adriatic with its center in the south and its associated frontal waves moved across the southern Balkans and our area toward the Black Sea. The weather was changeable and cloudy, with occasional rain, more frequent and heavier in the south and southeast of the country, light snow was recorded in the high mountains.

During the second decade, it was gradually warmer and drier with plenty of sunshine. The Pannonian Plain and the Balkans, as well as the south of the continent, were under the influence of a high air pressure field and a weakly pronounced geopotential field and ridge from the central Mediterranean. At the end of the decade, across western Europe and the eastern Atlantic, low pressure and a deep trough in the geopotential field were strengthening and extending across the western Mediterranean. Above the central Mediterranean, the Balkans and the Pannonian Plain, a pronounced south–southwesterly upper-air circulation developed, at first with low-pressure system development within the Genoa Bay, Thyrrhenian and Adriatic Seas, and then with the trajectory toward the Ionian, Aegean and Black Seas. Cloudy, occasionally with precipitation, more intense in the south. In the lowland with the snow with short-lived snow cover in the central and southwestern parts as well as on the mountains.

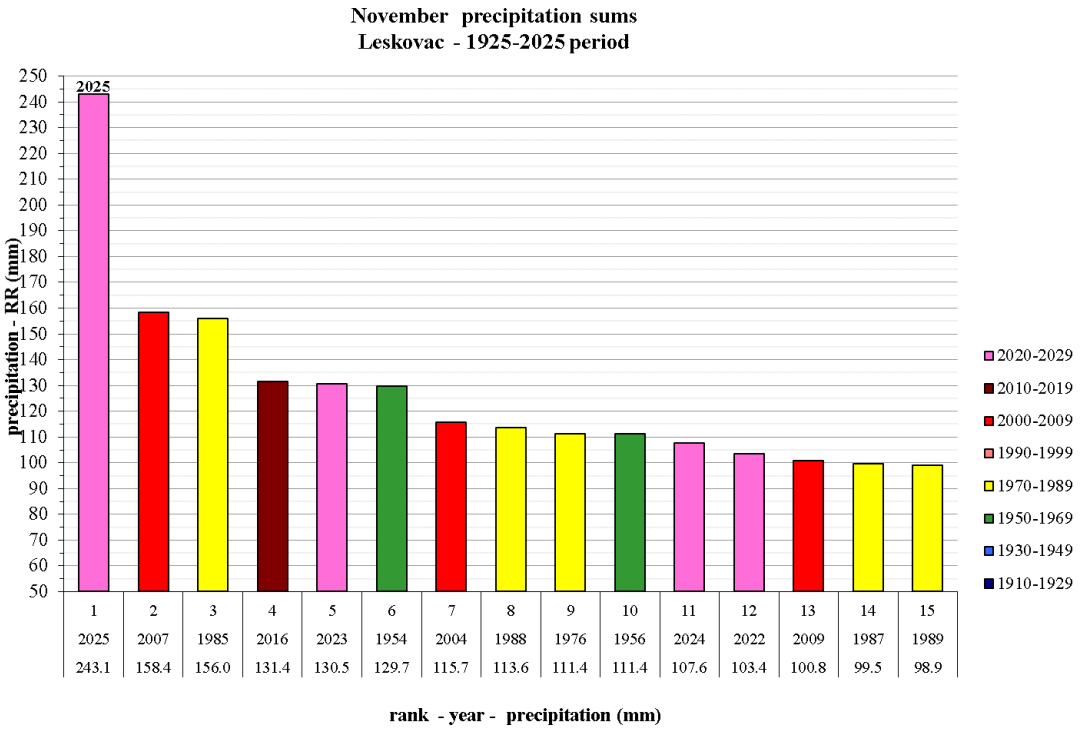
In the middle of the third decade, passage of upper air trough eastward, northwesterly and westerly circulation and pressure rise. Dry and significantly warmer brief period of time. Then, periphery of a new low pressure from northwest from North Sea, western Europe and western Mediterranean and establishment of southwesterly upper air circulation across the central Balkans. Influence of the new frontal wave within the low pressure system from Adriatic with center in transfer across the Carpathians and advection of cold air mass. Simultaneously, a broad upper air depression over the western Mediterranean, with its center transferring across southern Italy, and by the end of the month across southern Serbia toward the Black Sea. At the surface, waves of moist air extended across the eastern, southern, and southeastern Balkans,

weakening toward the end of the month as they moved toward the Black Sea. Occasional rain, mainly in the central and southern regions, while on the mountaines specially in the southwest with snow toward the end of the month with the cooling. Snowfall was also observed in lower elevations in parts of western and southwestern Serbia and in parts of Šumadija. At the end of the month, an increase in pressure developed over our region, with northerly and northwesterly upper air circulation and cold weather with light precipitation in the southeast.

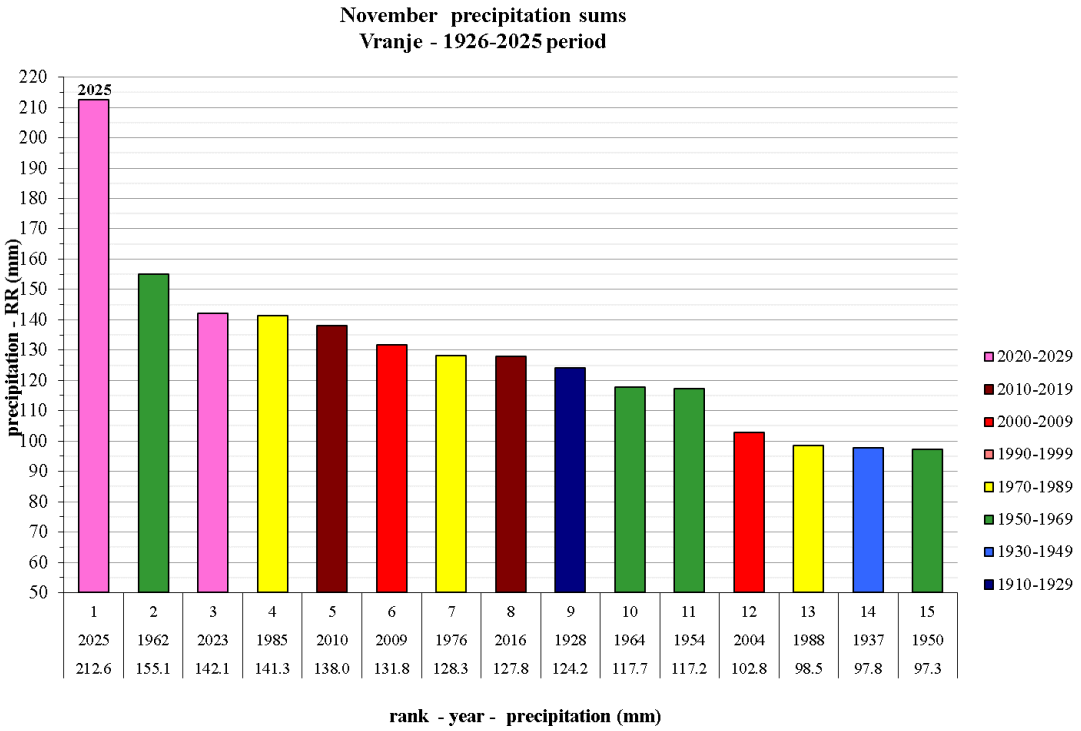
* National Center for Hydrometeorlogical Early Warning System

APPENDIX

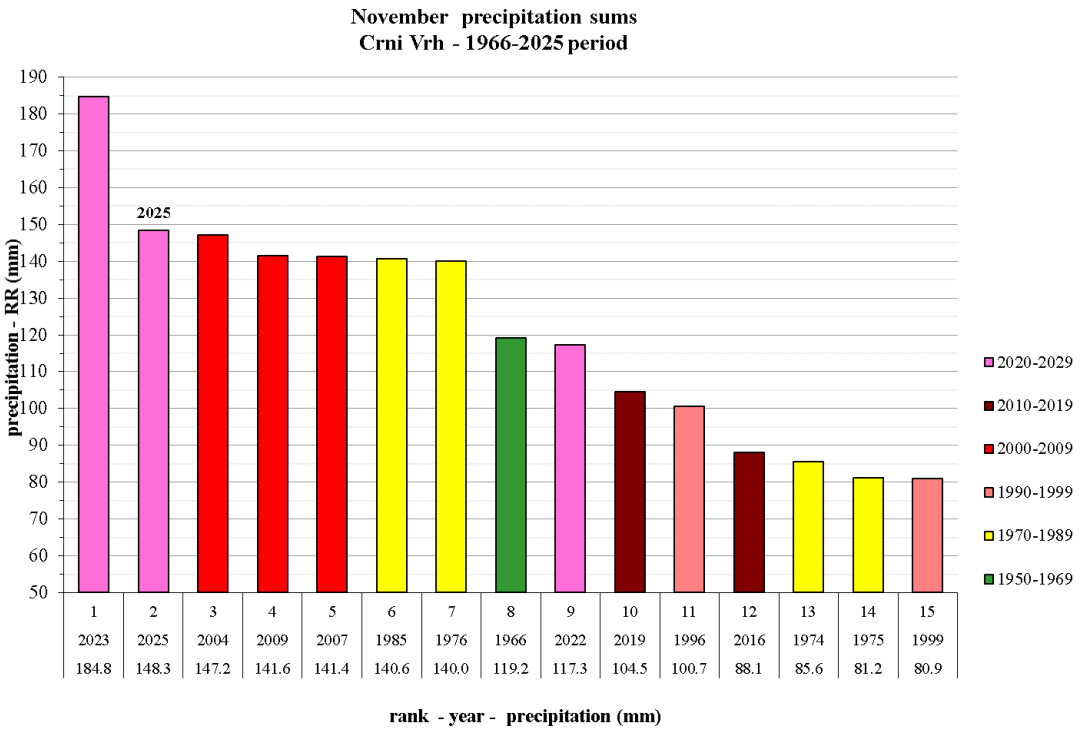
Ranks of the wettest November



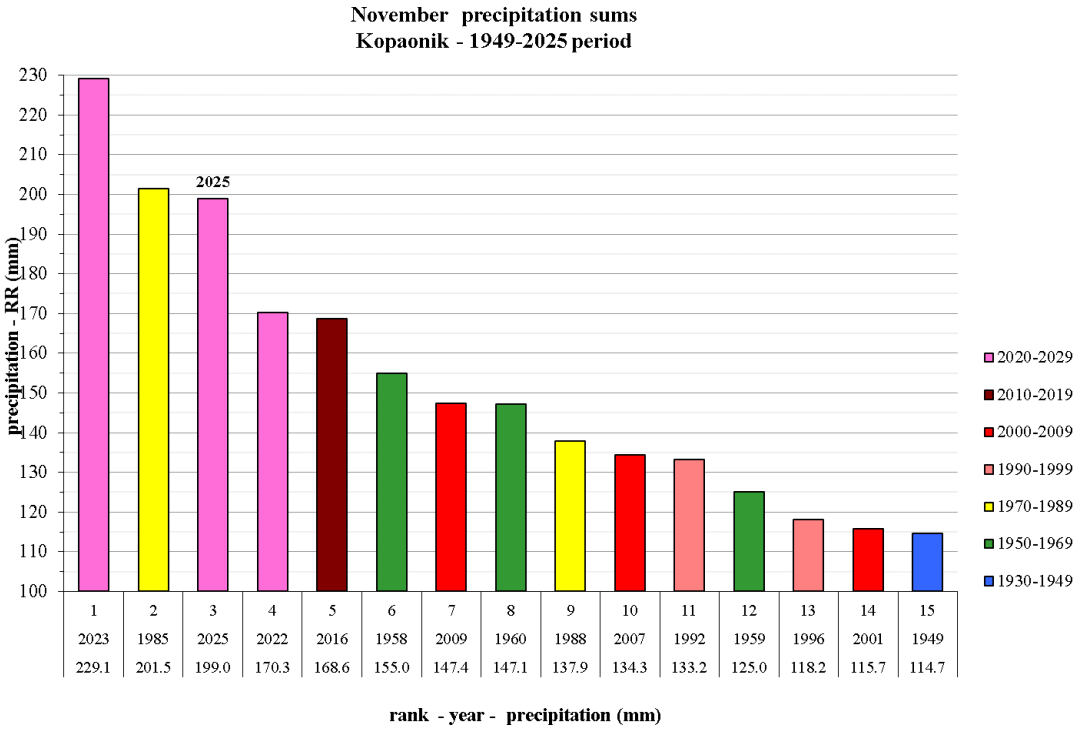
Appendix 1. Rank of the highest precipitation in Leskovac



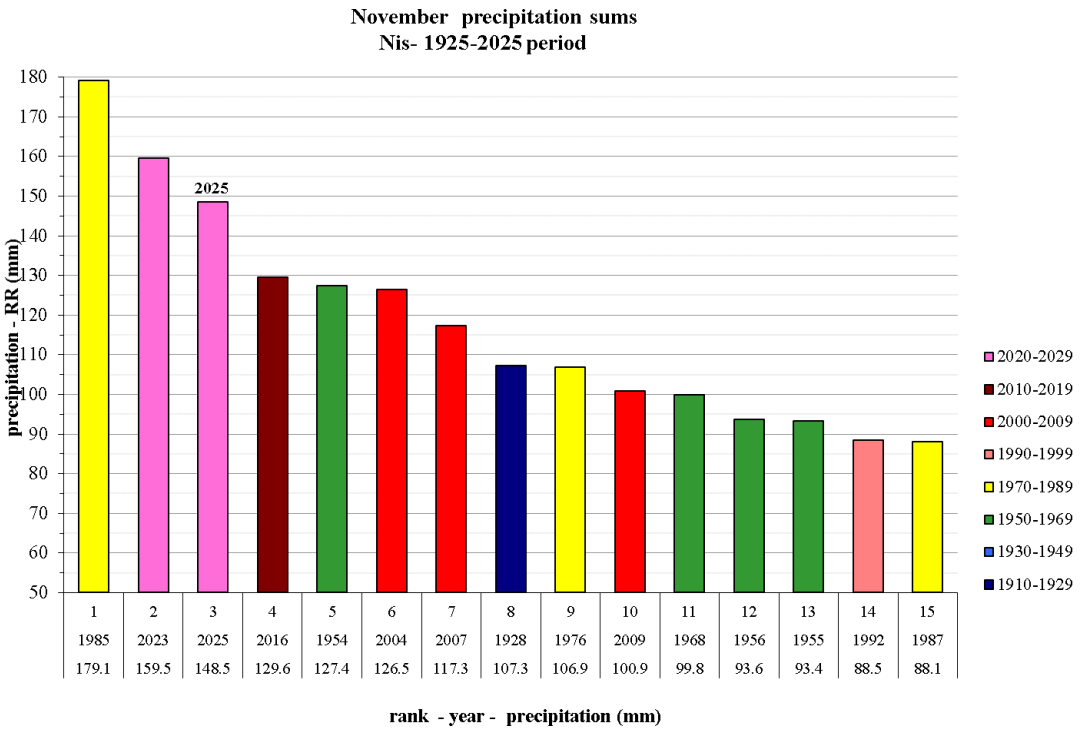
Appendix 2. Rank of the highest precipitation in Vranje



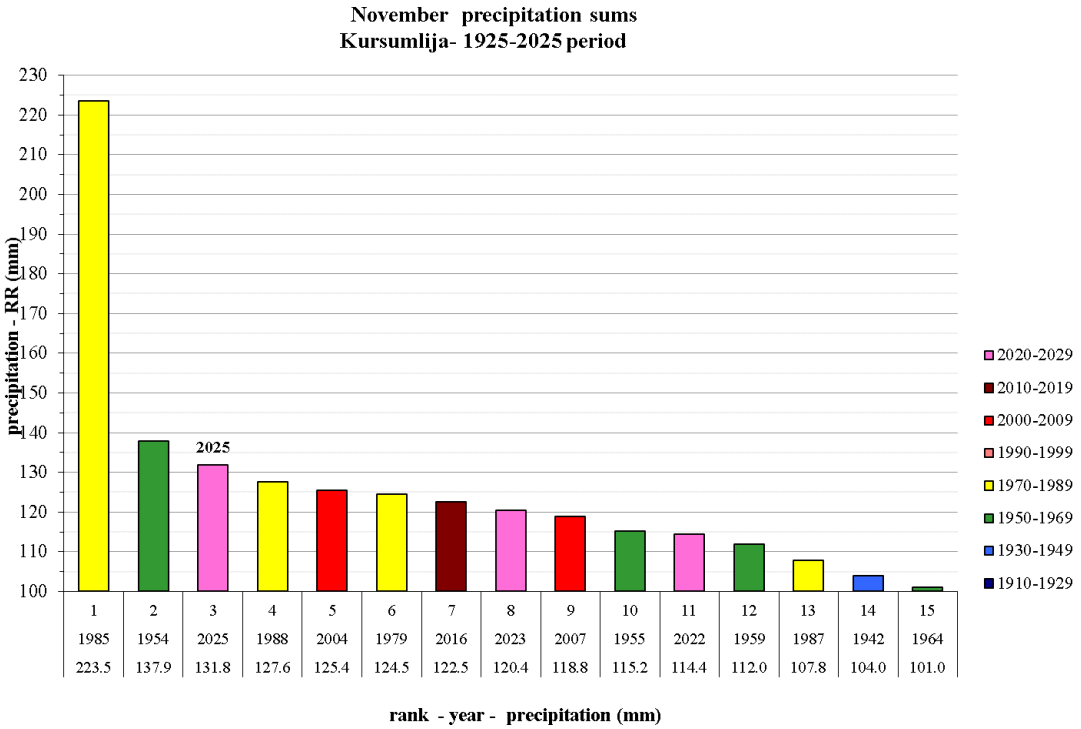
Appendix 3. Rank of the highest precipitation on Crni Vrh



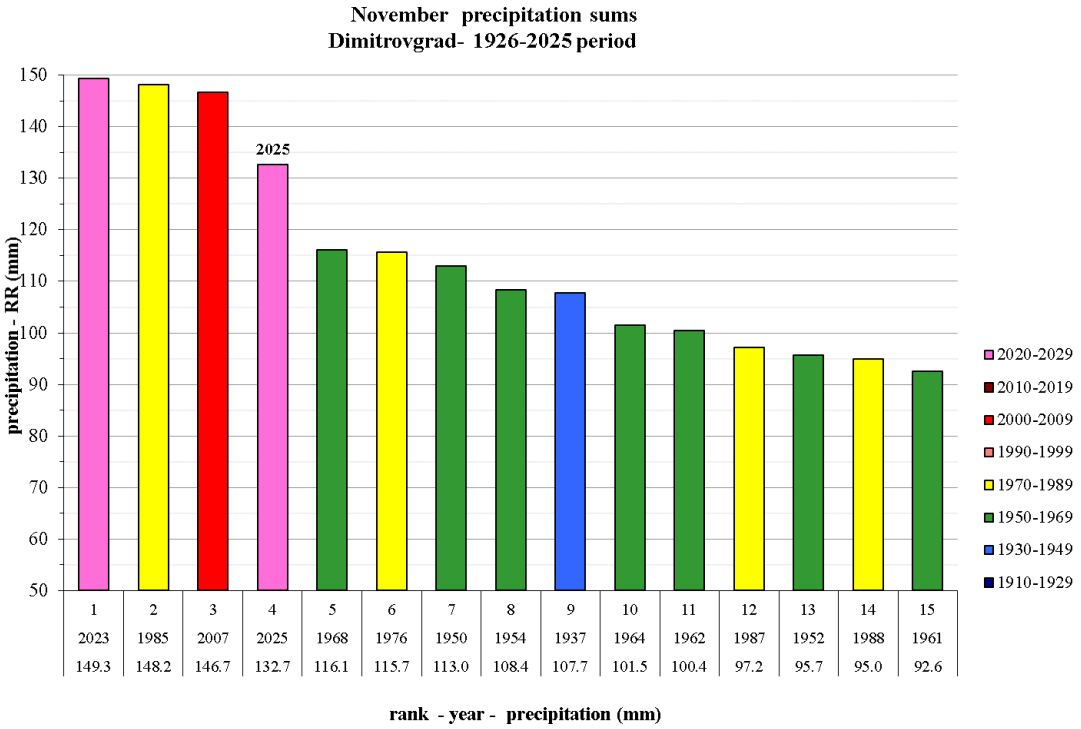
Appendix 4. Rank of the highest precipitation on Kopaonik



Appendix 5. Rank of the highest precipitation in Nis

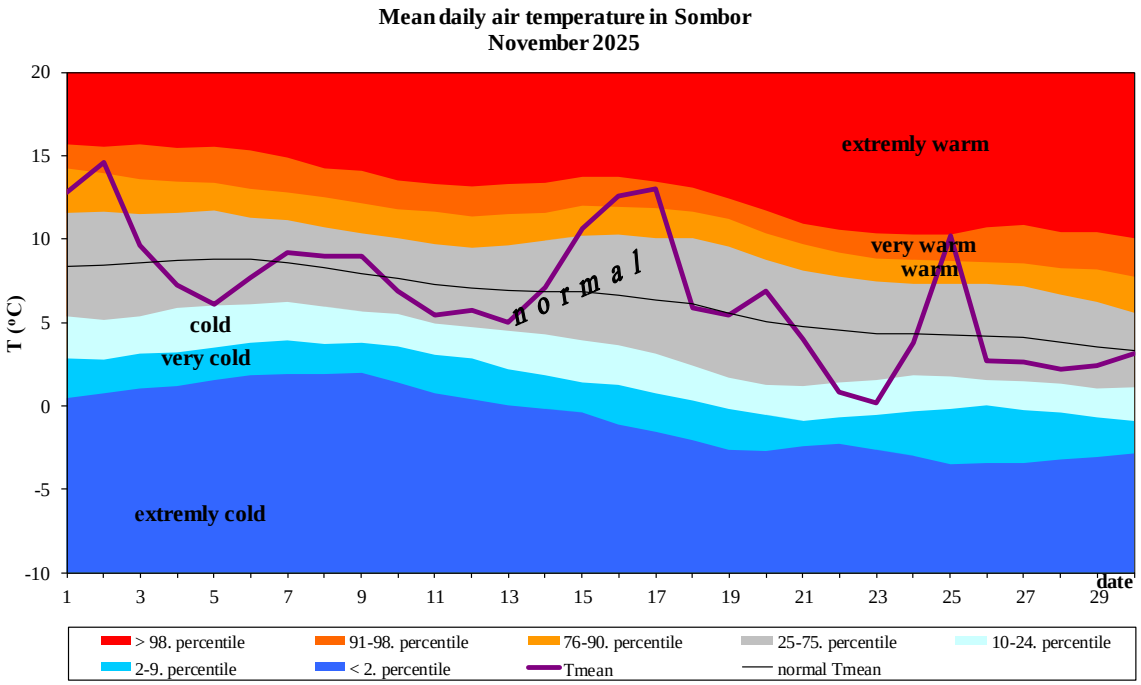


Appendix 6. Rank of the highest precipitation in Kursumlija

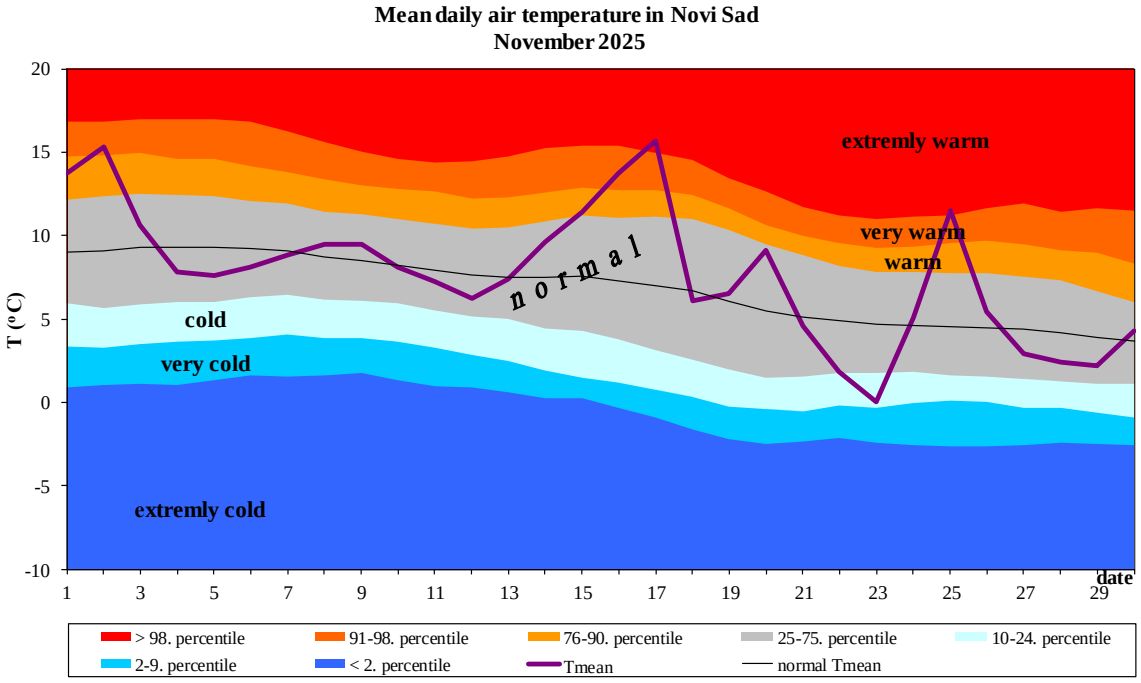


Appendix 7. Rank of the highest precipitation in Dimitrovgrad

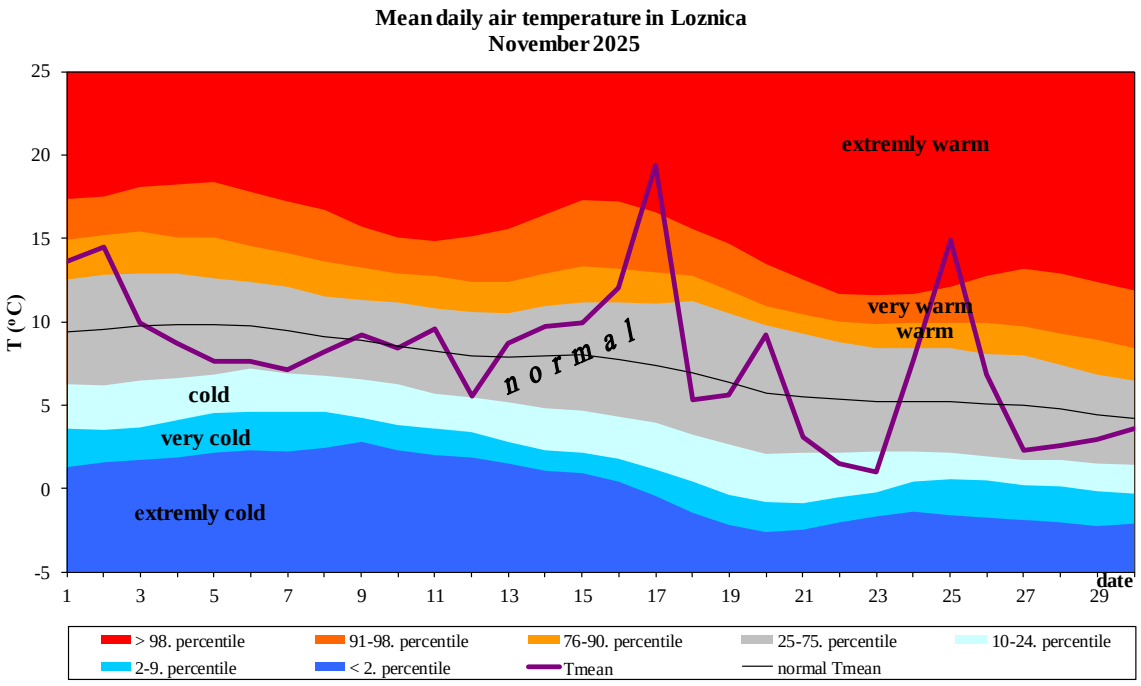
Mean air temperature



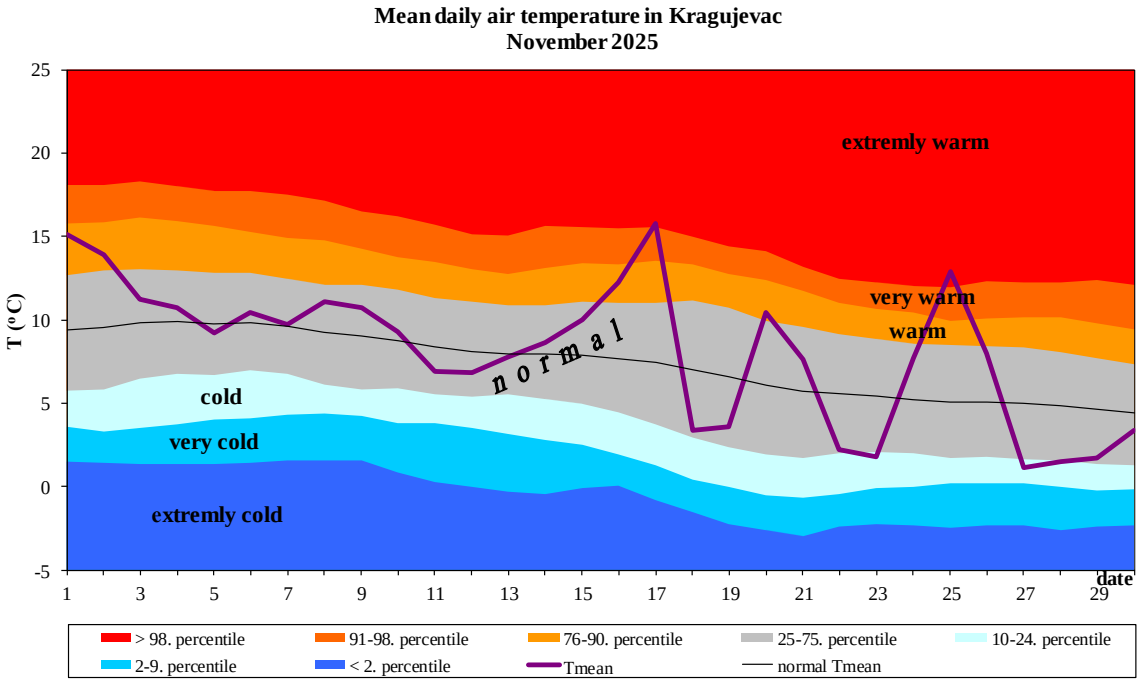
Appendix 8. Daily course of the mean daily air temperature and accompanying percentile for Sombor



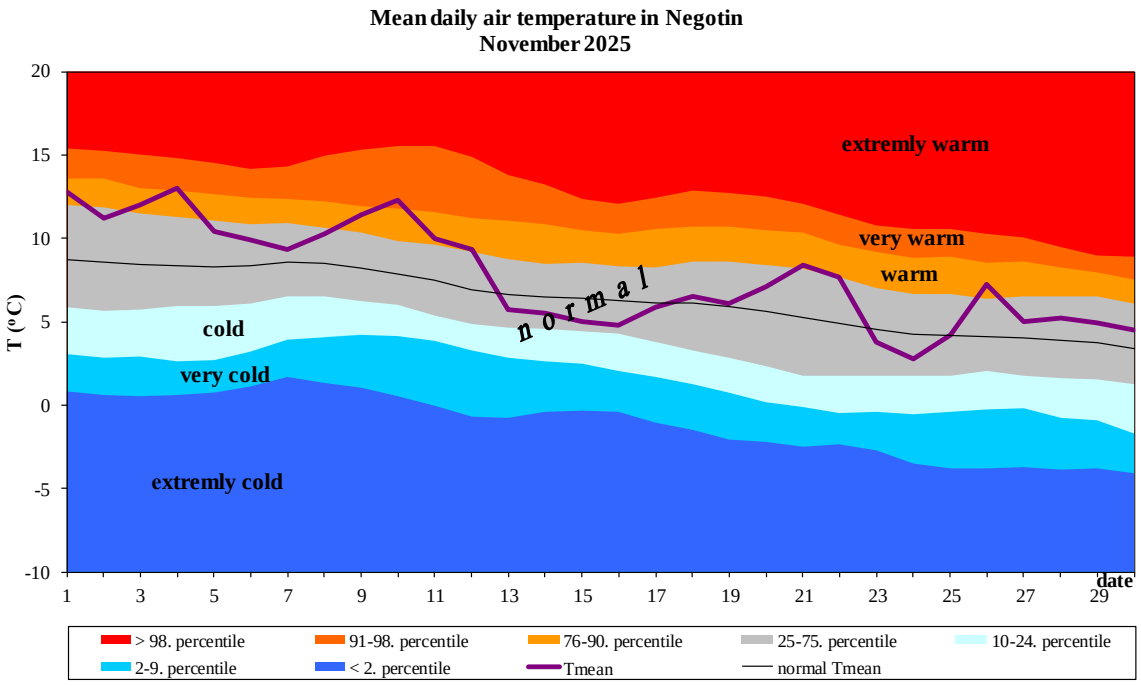
Appendix 9. Daily course of the mean daily air temperature and accompanying percentile for Novi Sad



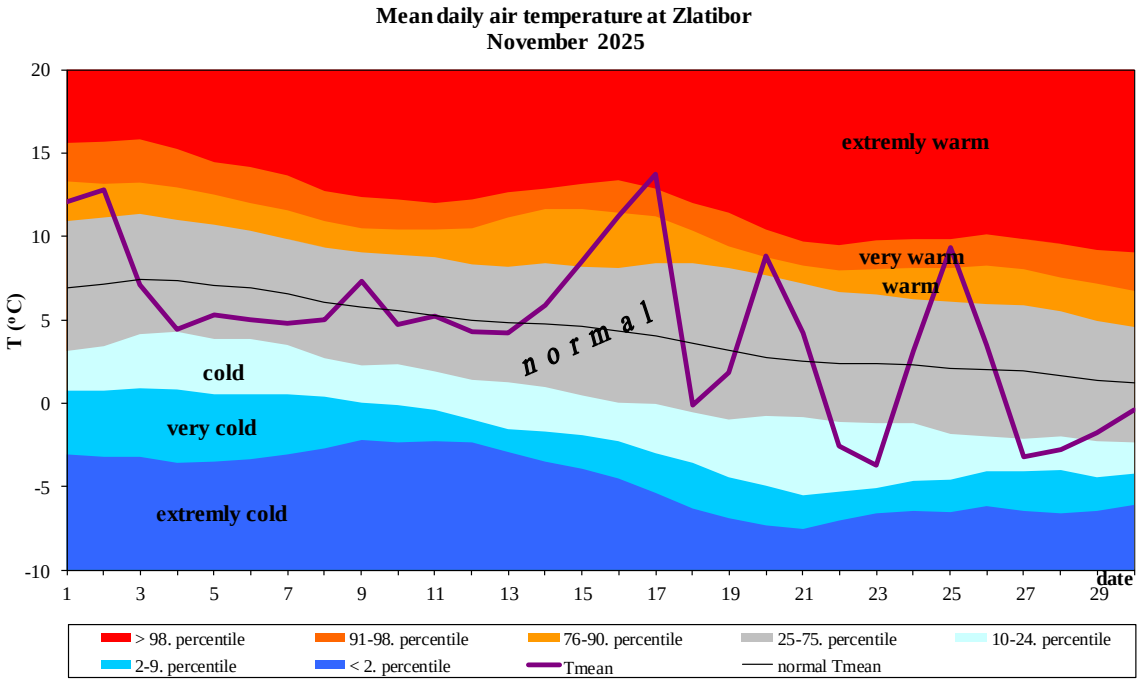
Appendix 10. Daily course of the mean daily air temperature and accompanying percentile for Loznica



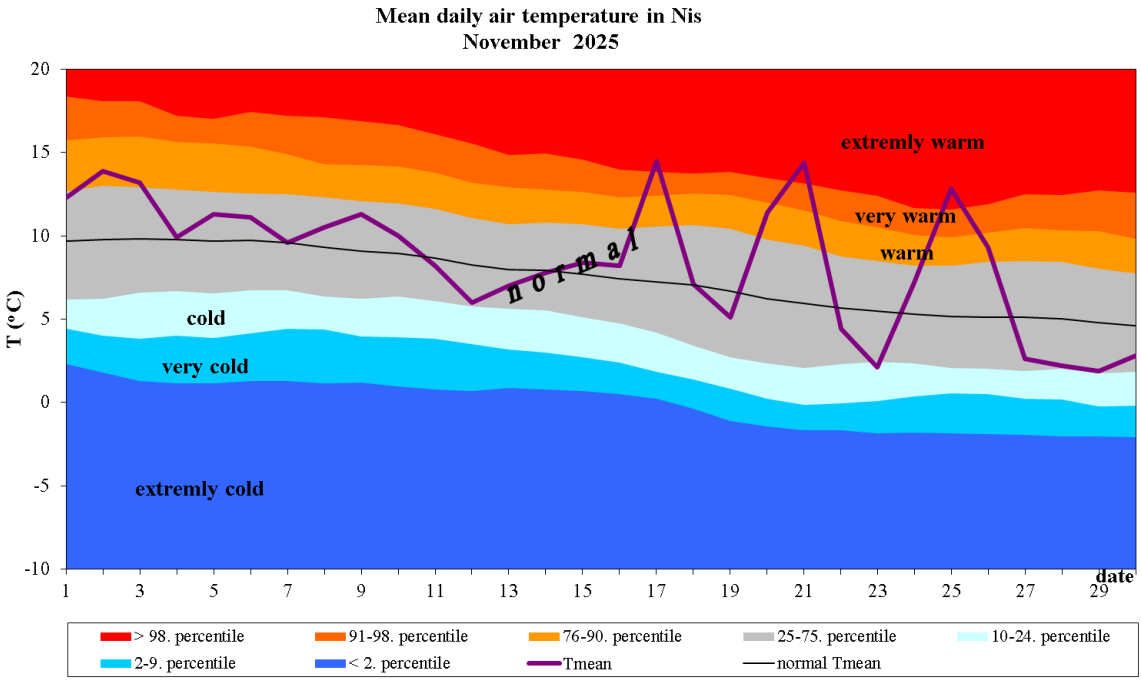
Appendix 11. Daily course of the mean daily air temperature and accompanying percentile for Kragujevac



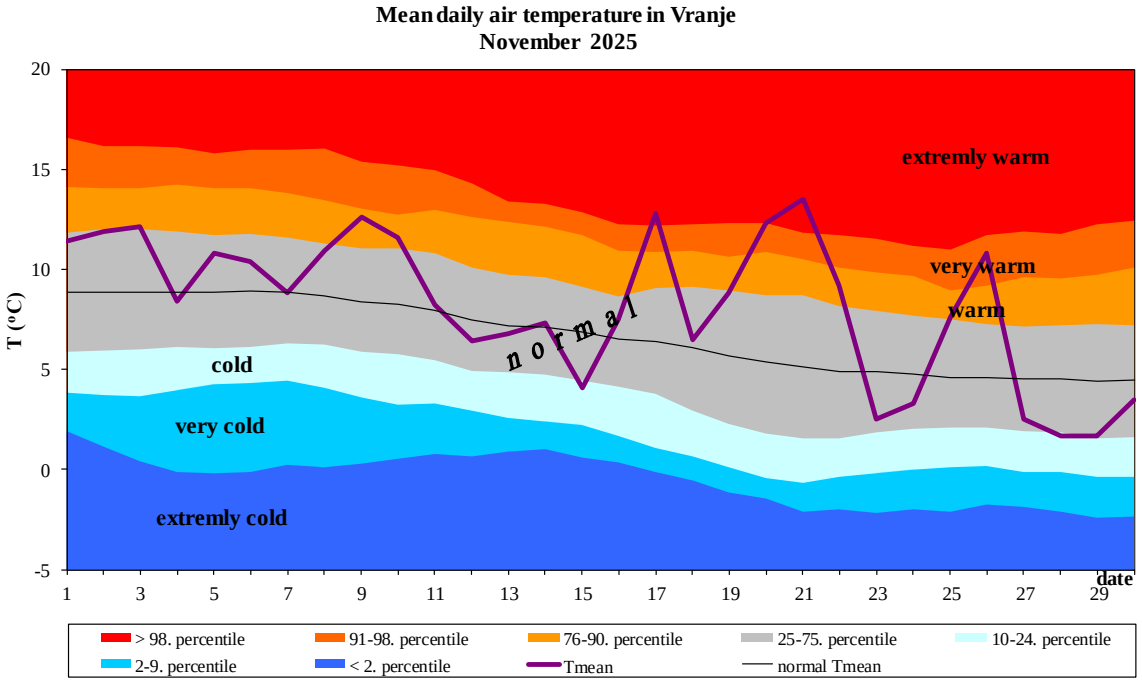
Appendix 12. Daily course of the mean daily air temperature and accompanying percentile for Negotin



Appendix 13. Daily course of the mean daily air temperature and accompanying percentile on Zlatiboru

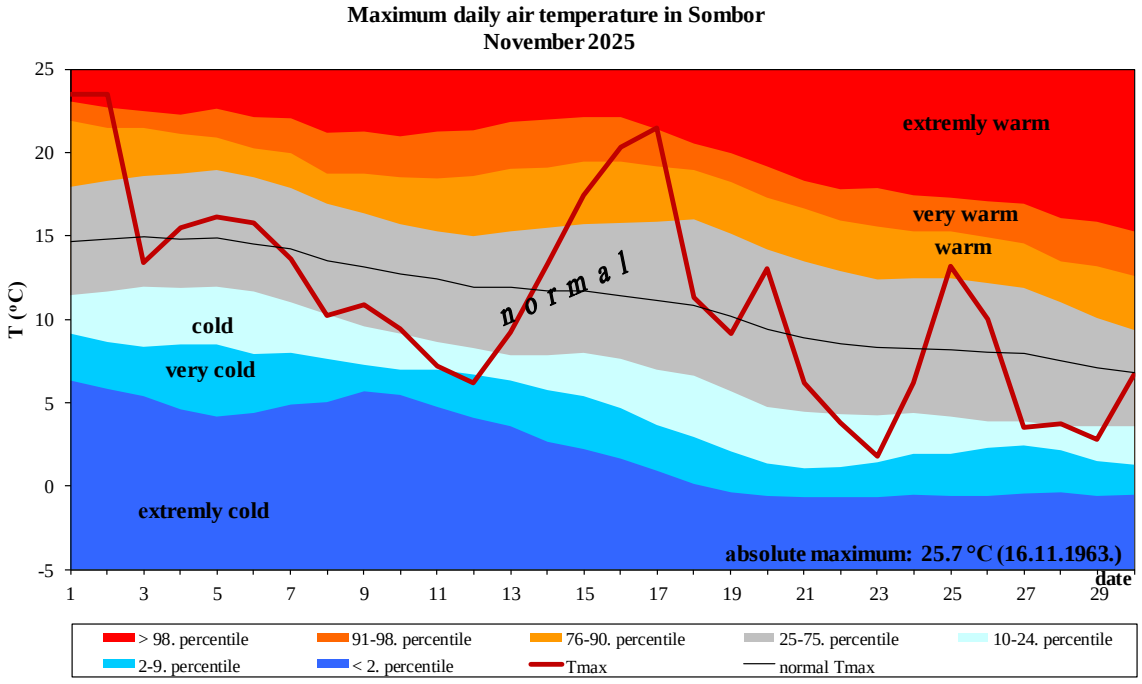


Appendix 14. Daily course of the mean daily air temperature and accompanying percentile for Nis

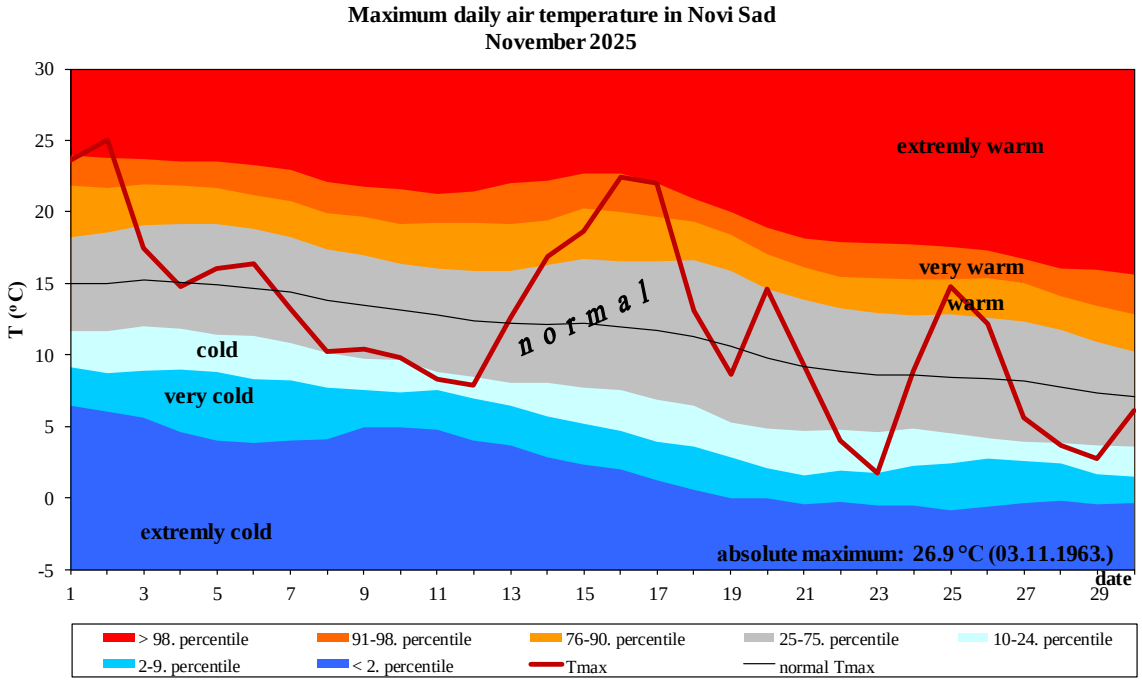


Appendix 15. Daily course of the mean daily air temperature and accompanying percentile for Vranje

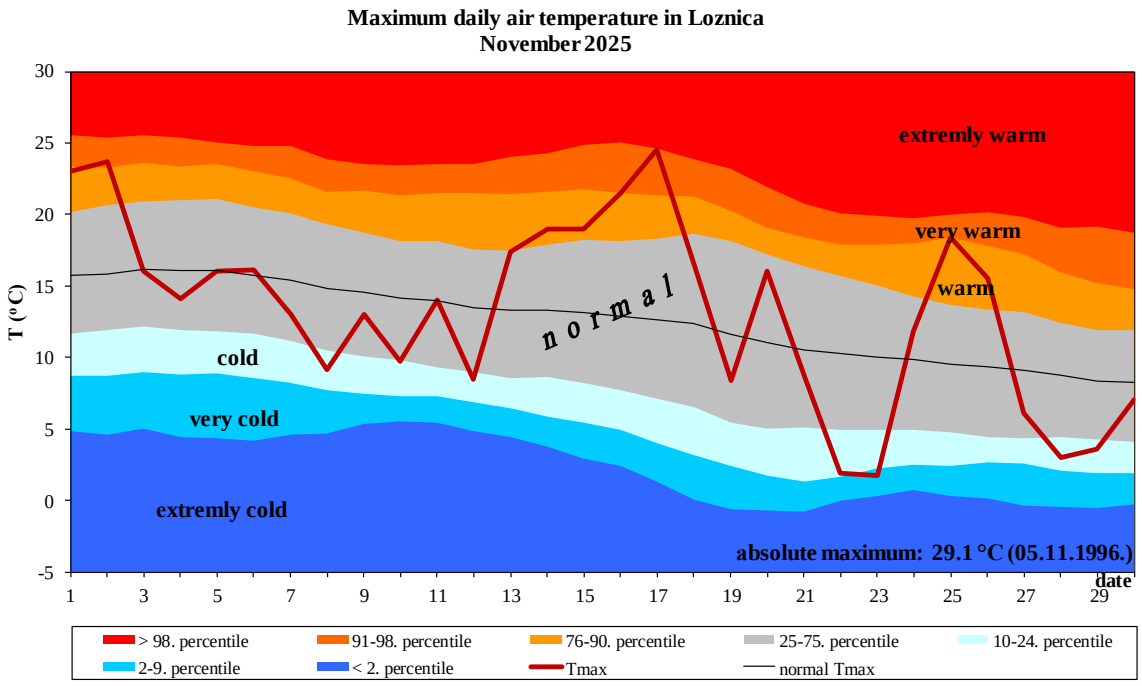
Maximum air temperature



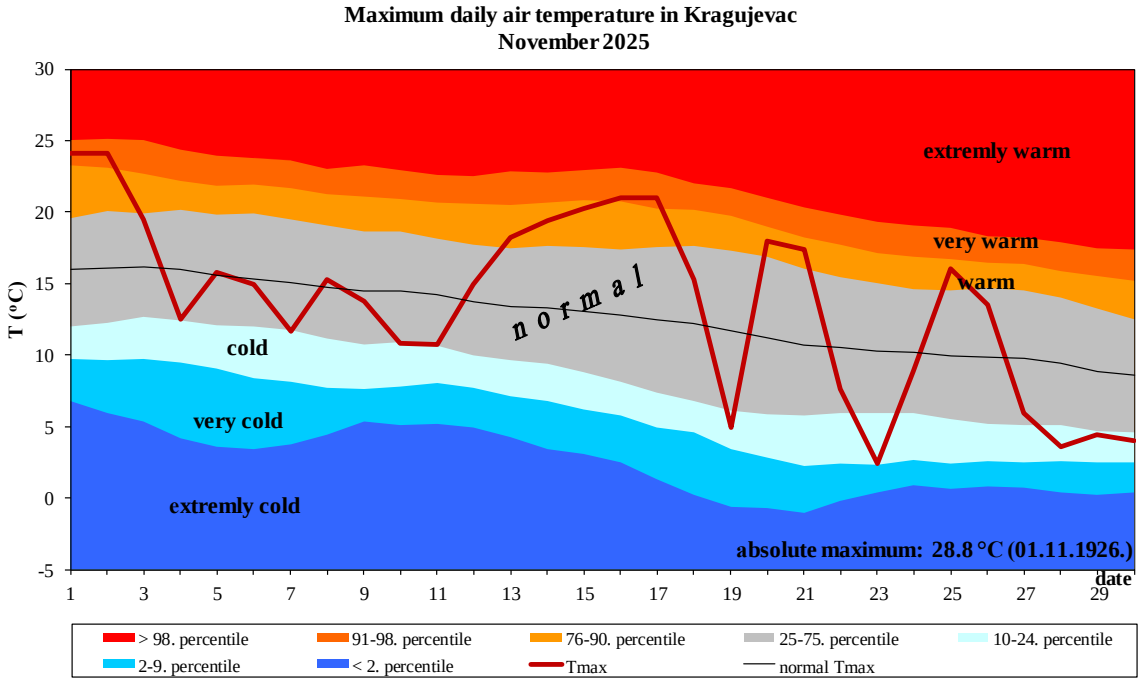
Appendix 16. Daily course of the maximum daily air temeperature and the accompanying percentile for Sombor



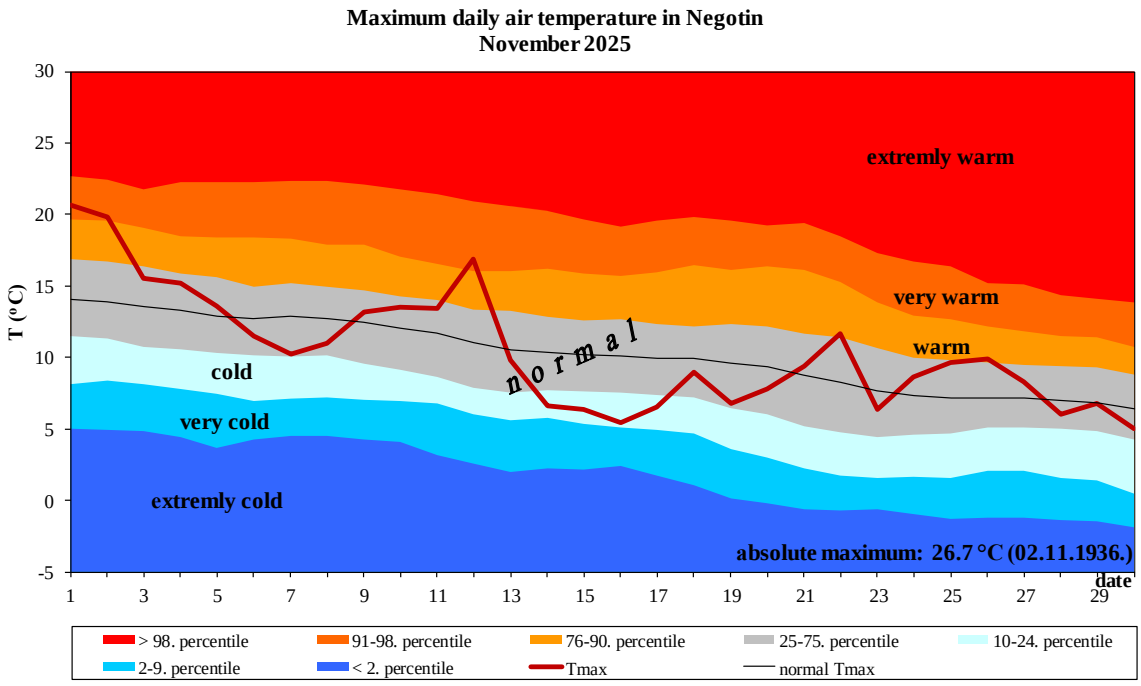
Appendix 17. Daily course of the maximum daily air temeperature and the accompanying percentile for Novi Sad



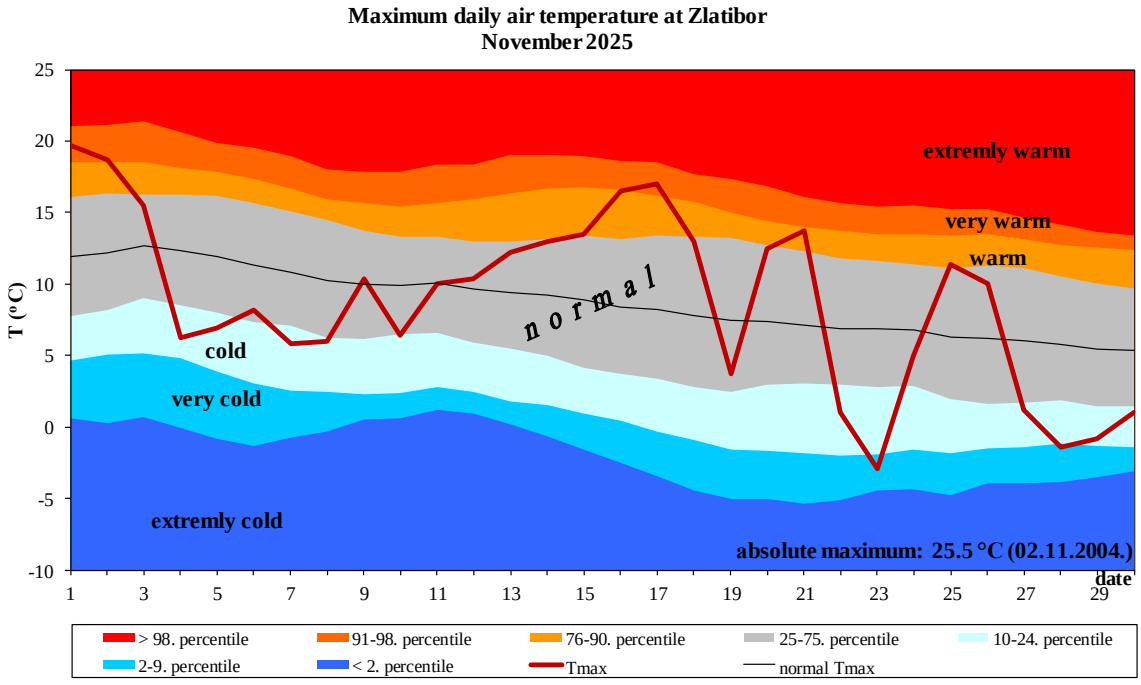
Appendix 18. Daily course of the maximum daily air temeperature and the accompanying percentile for Loznica



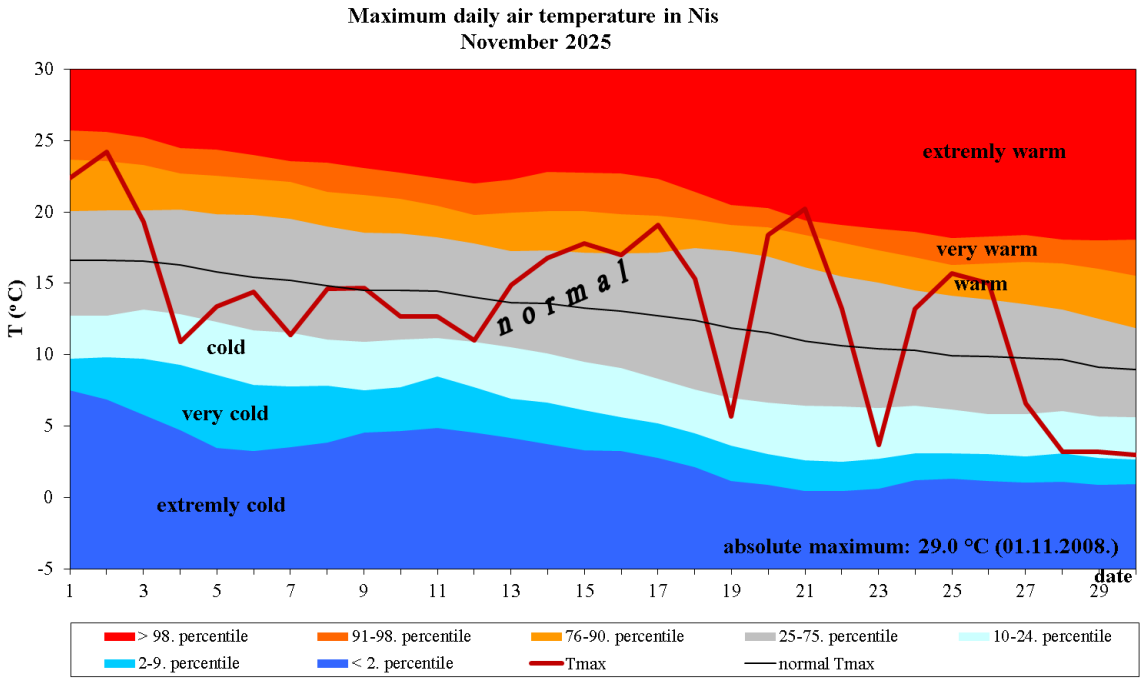
Appendix 19. Daily course of the maximum daily air temeperature and the accompanying percentile for Kragujevac



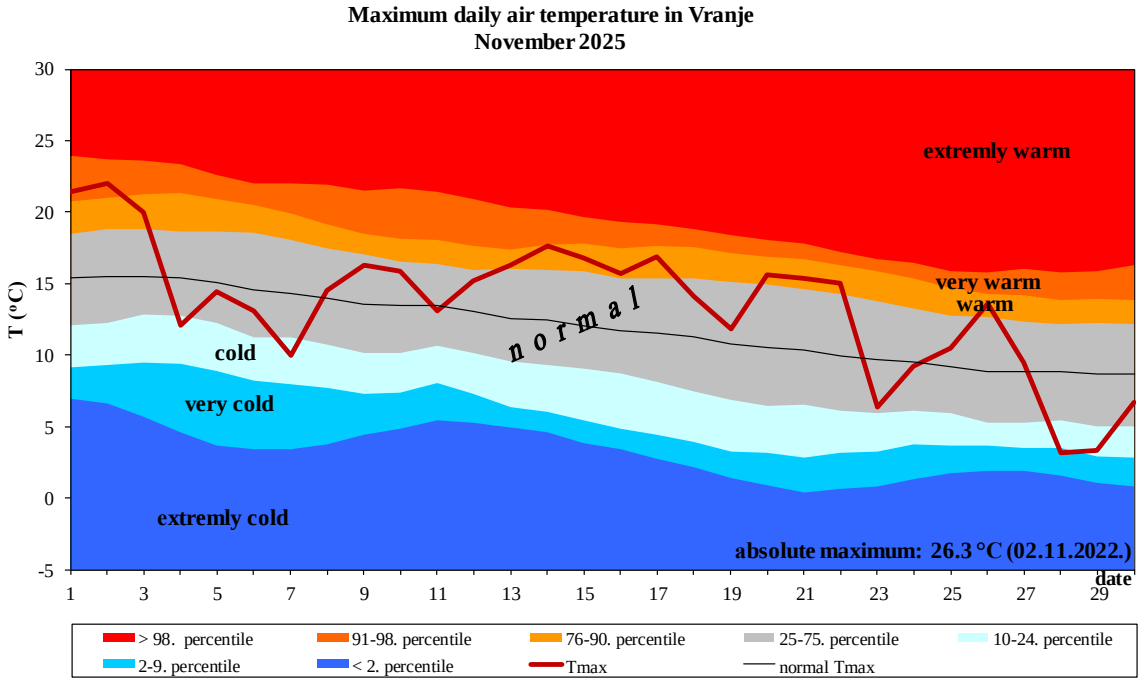
Appendix 20. Daily course of the maximum daily air temeperature and the accompanying percentile for Negotin



Appendix 21. Daily course of the maximum daily air temeperature and the accompanying percentile on Zlatibor

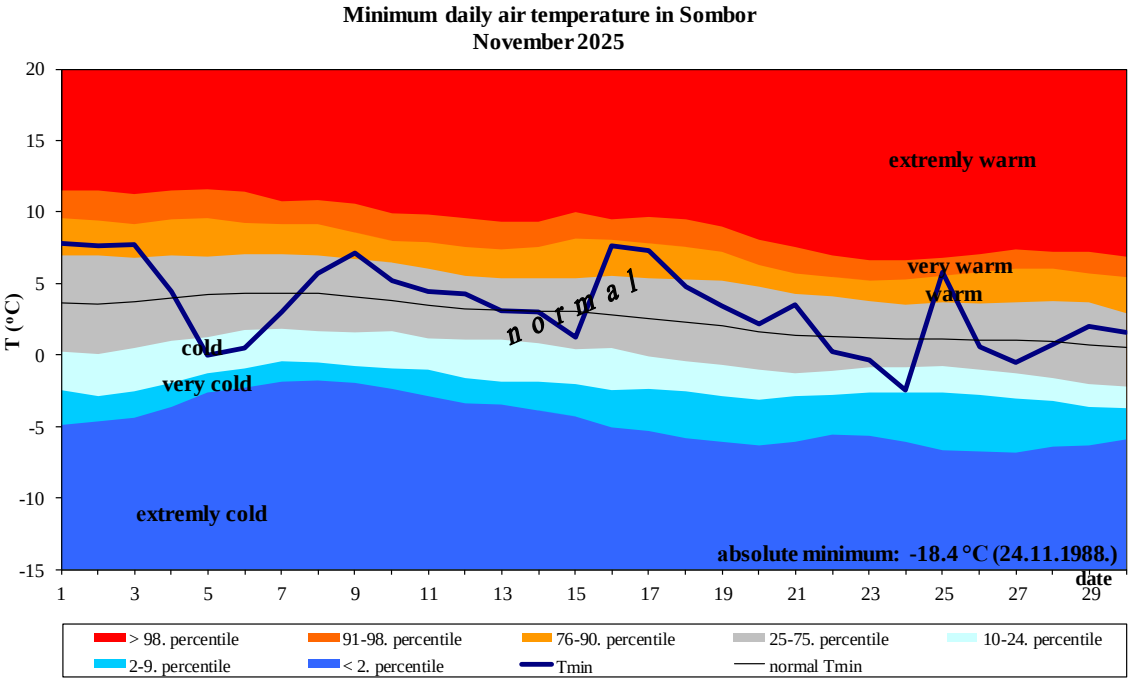


Appendix 22. Daily course of the maximum daily air temeperature and the accompanying percentile for Nis

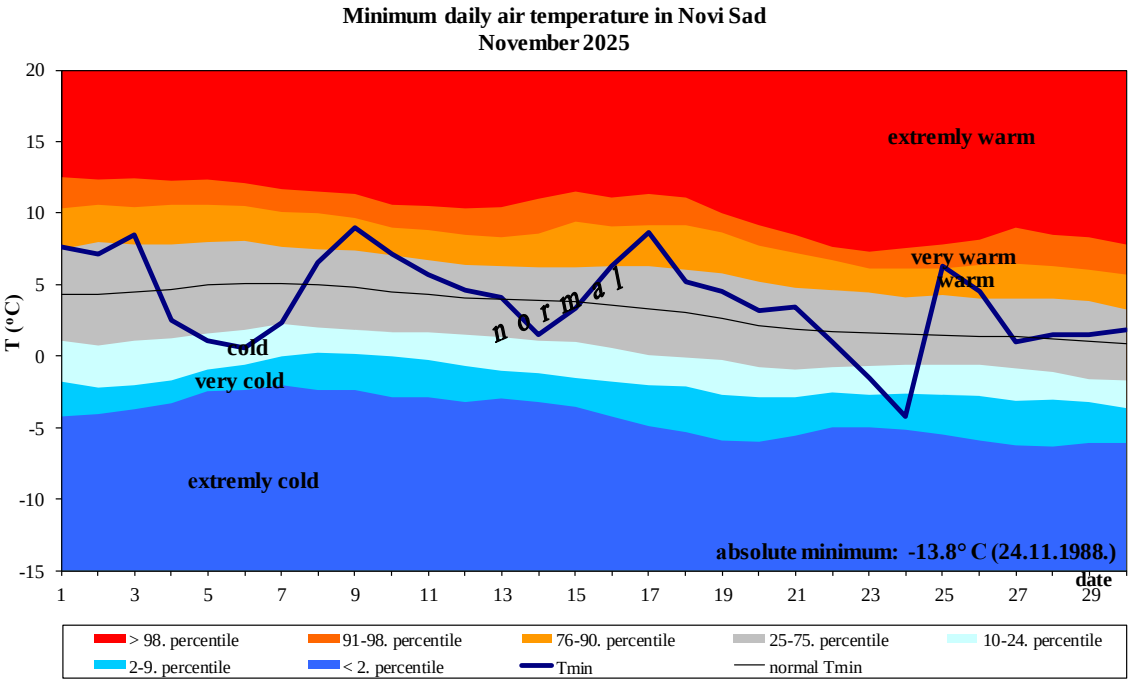


Appendix 23. Daily course of the maximum daily air temeperature and the accompanying percentile for Vranje

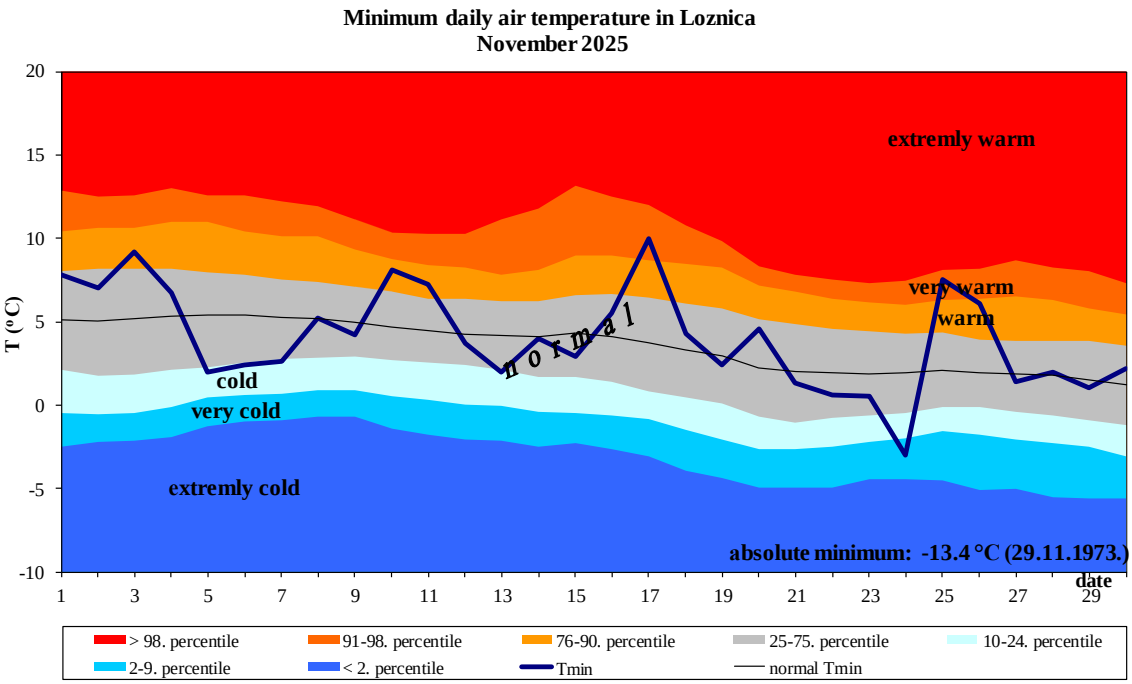
Minimum air temperature



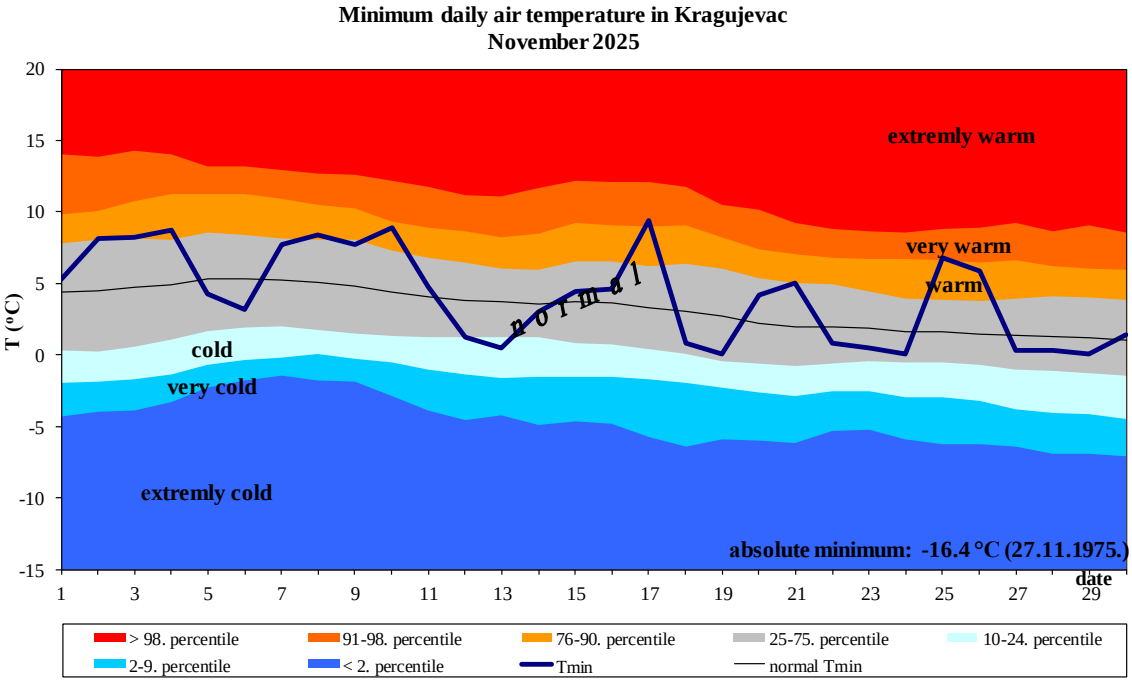
Appendix 24. Daily course of the minimum daily air temperature and the accompanying percentile for Sombor



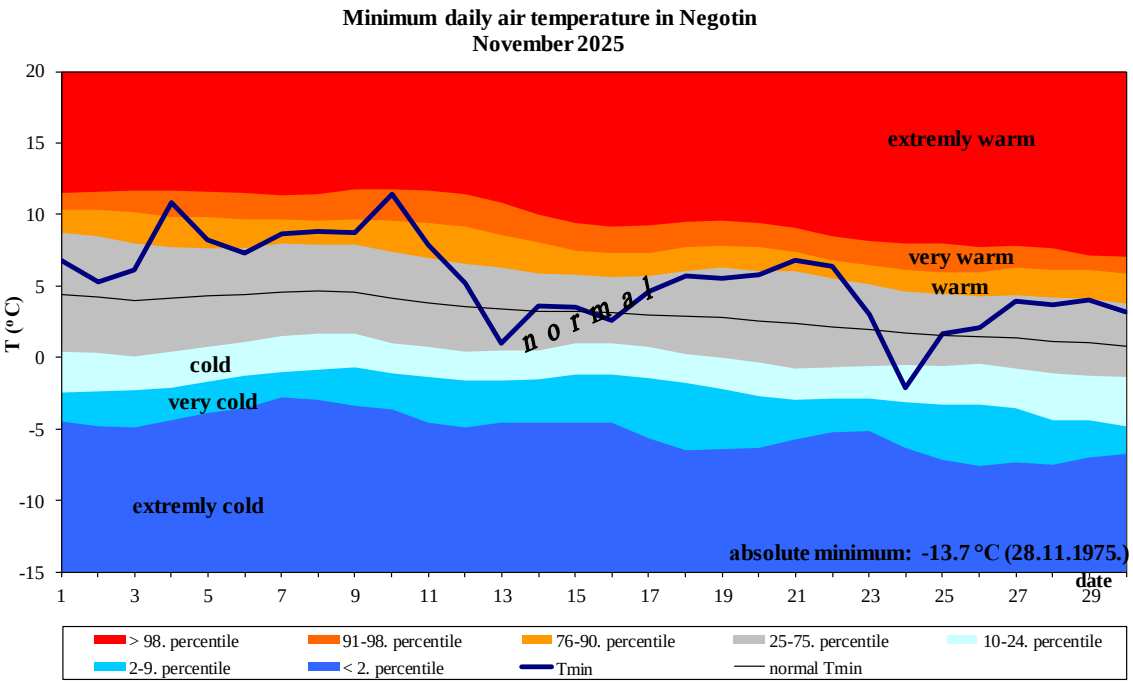
Appendix 25. Daily course of the minimum daily air temperature and the accompanying percentile for Novi Sad



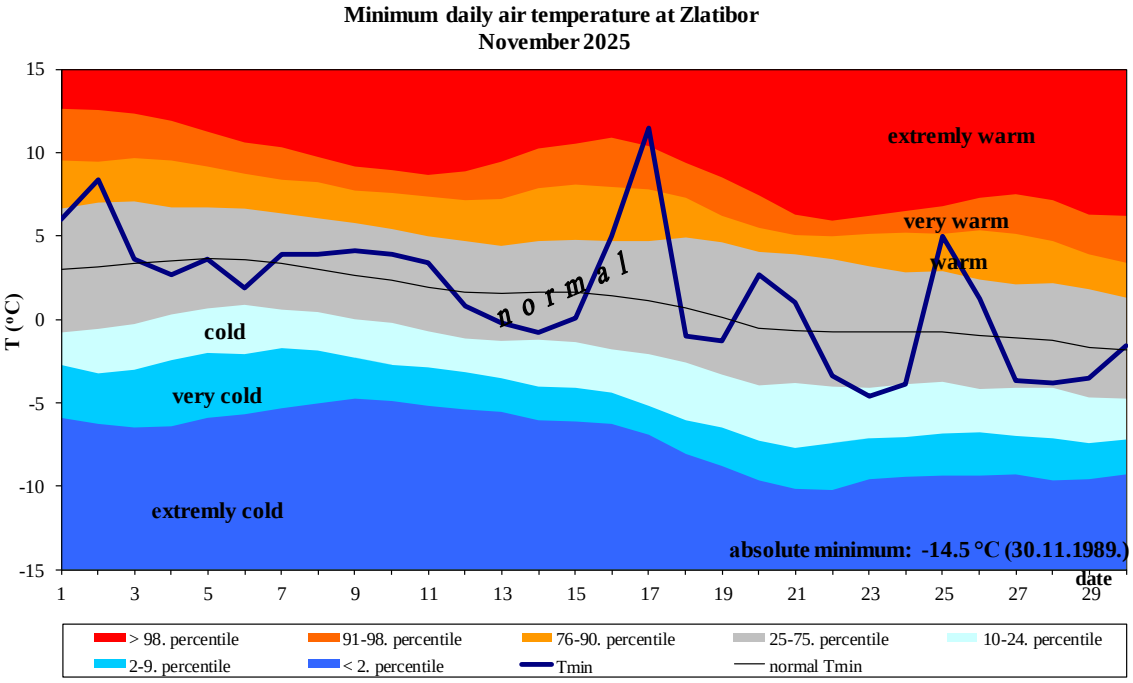
Appendix 26. Daily course of the minimum daily air temperature and the accompanying percentile for Loznica



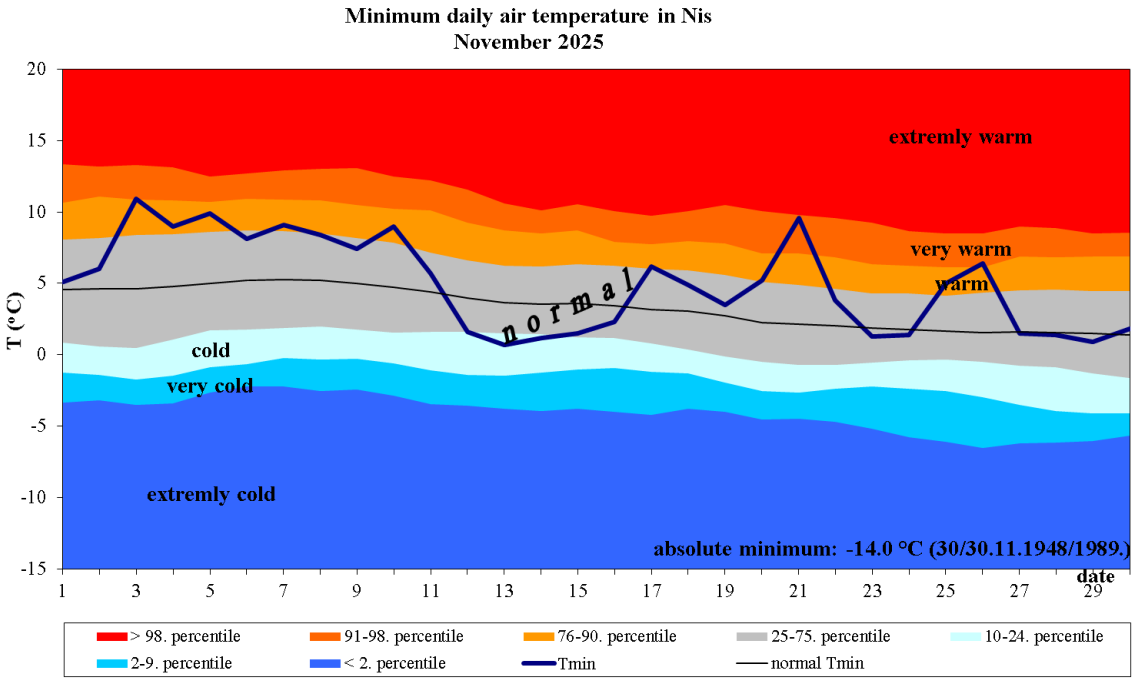
Appendix 27. Daily course of the minimum daily air temperature and the accompanying percentile for Kragujevac



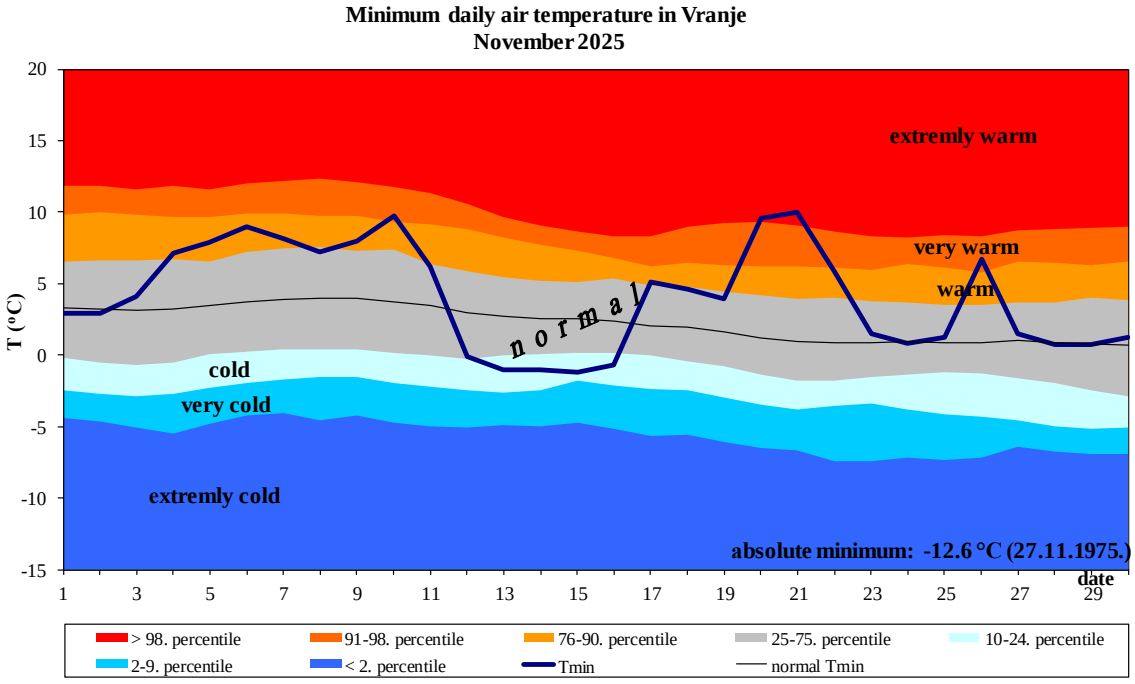
Appendix 28. Daily course of the minimum daily air temperature and the accompanying percentile for Negotin



Appendix 29. Daily course of the minimum daily air temperature and the accompanying percentile on Zlatibor

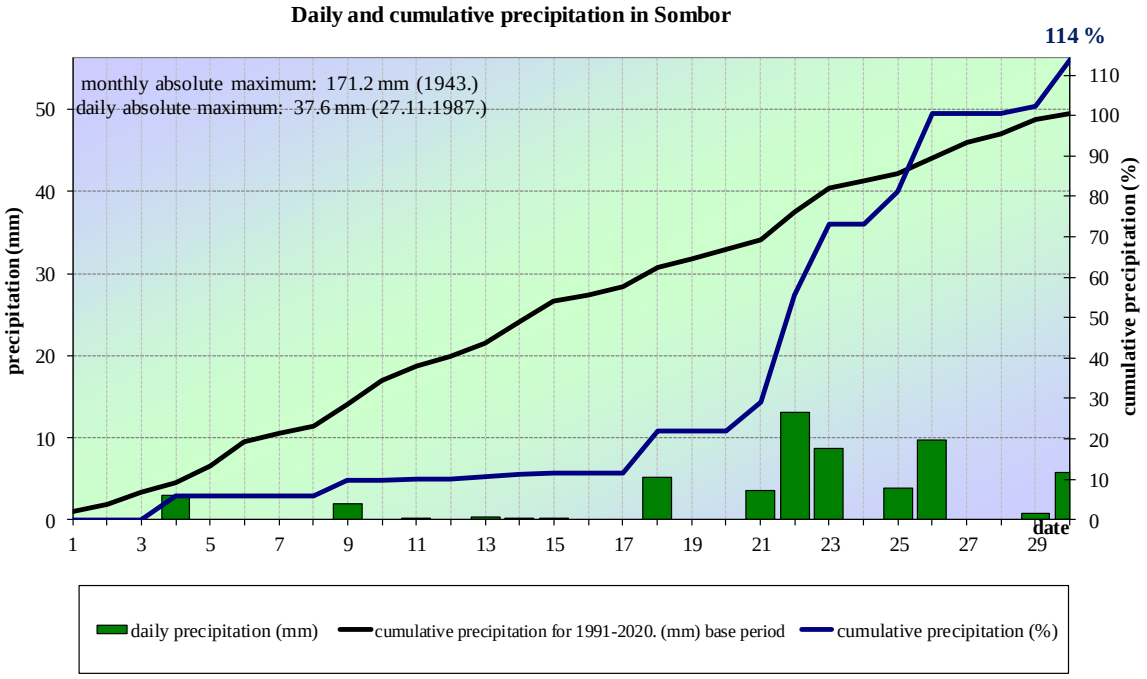


Appendix 30. Daily course of the minimum daily air temperature and the accompanying percentile for Nis

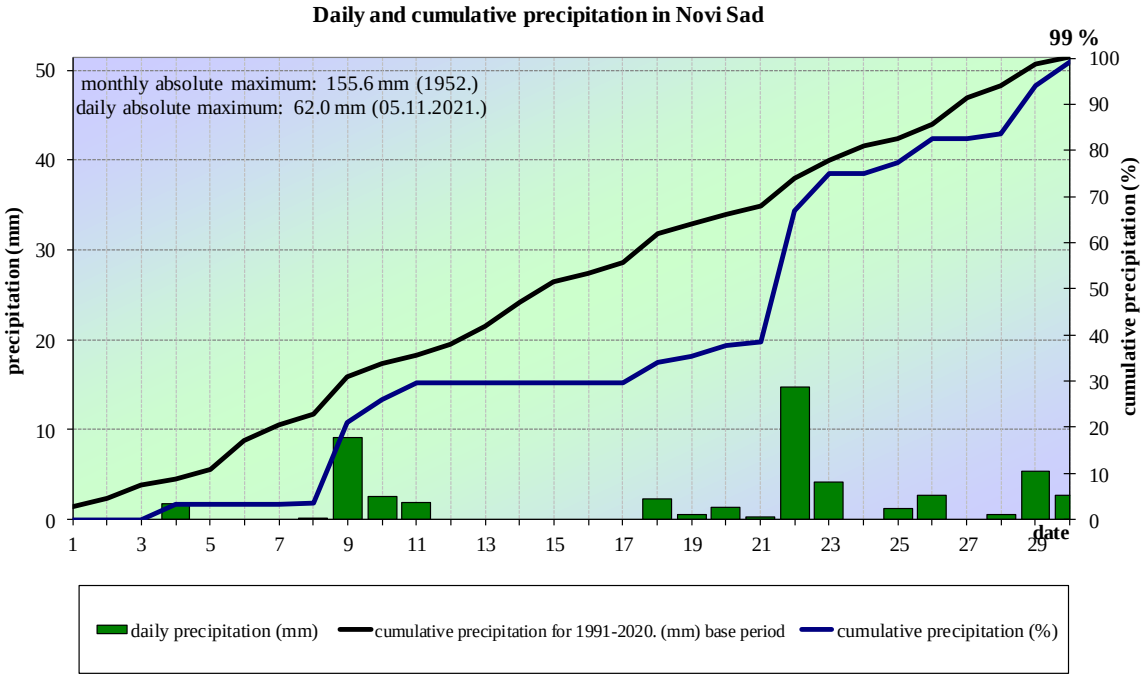


Appendix 31. Daily course of the minimum daily air temperature and the accompanying percentile for Vranje

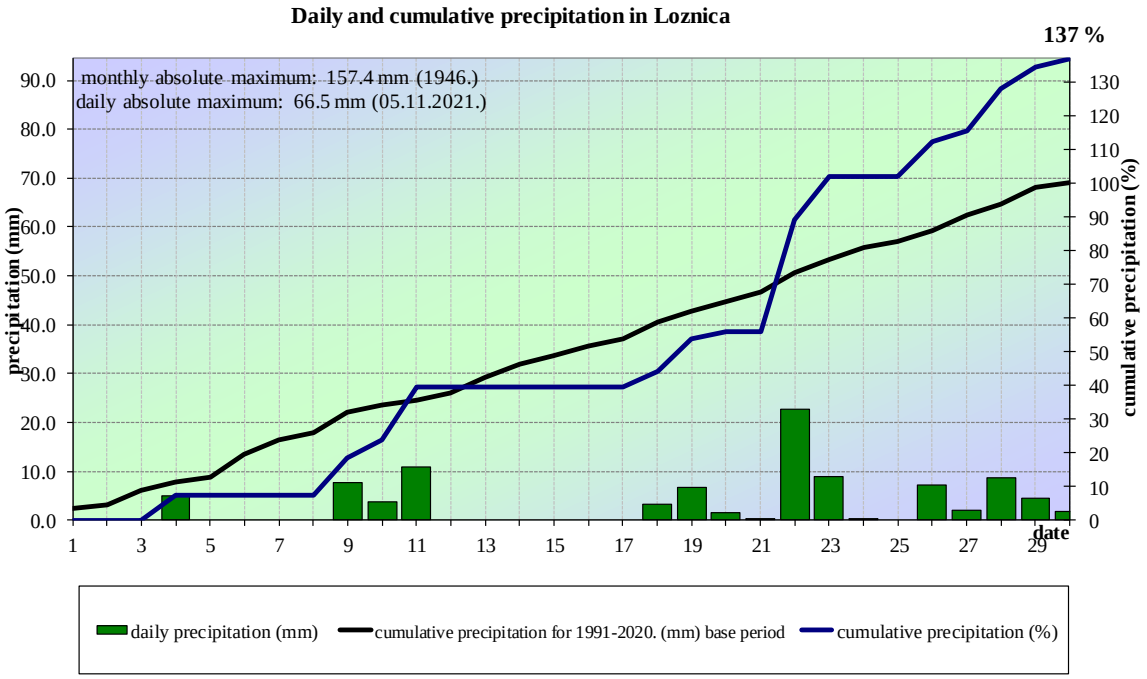
Precipitation



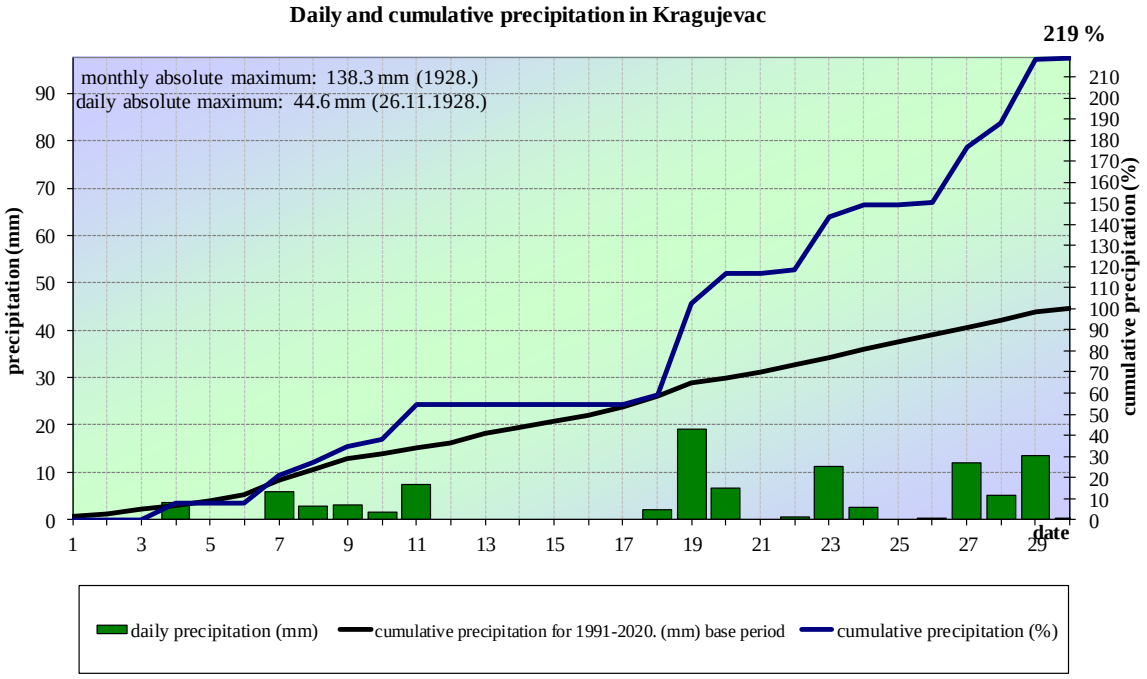
Appendix 32. Daily and cumulative precipitation sums for Sombor



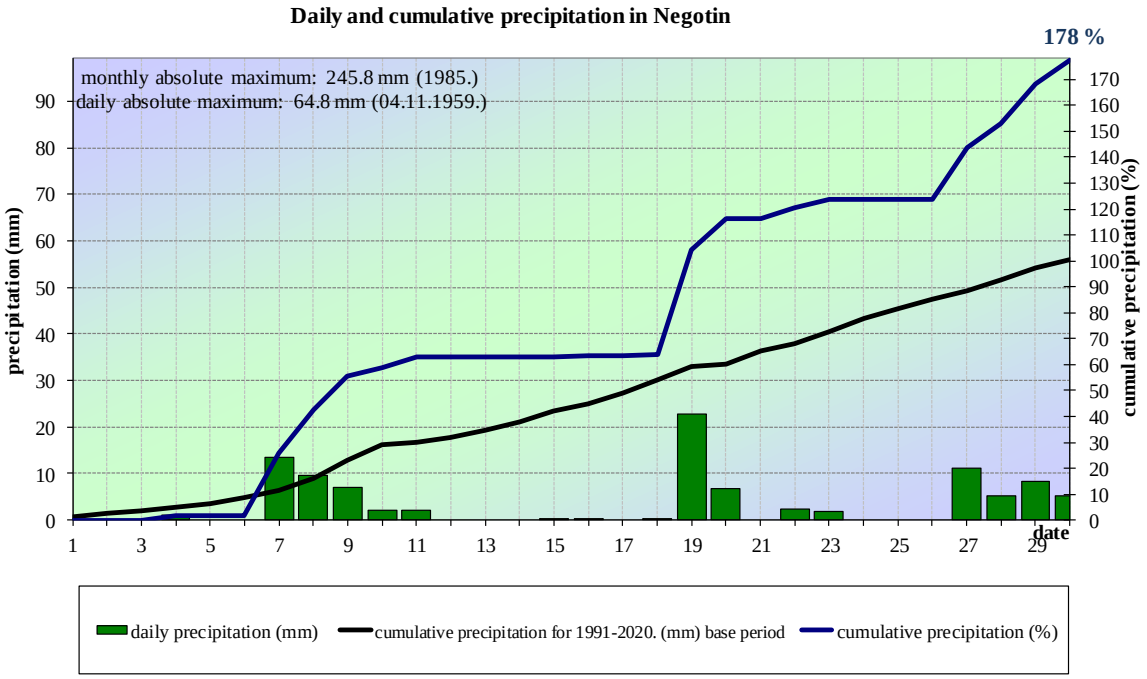
Appendix 33. Daily and cumulative precipitation sums for Novi Sad



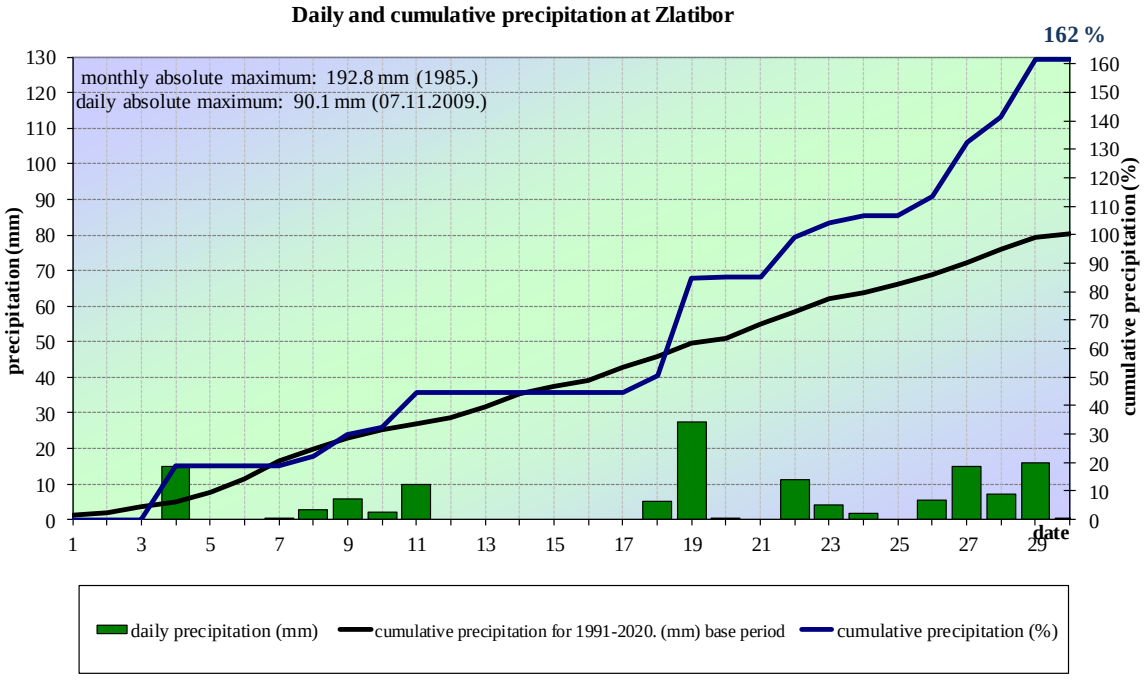
Appendix 34. Daily and cumulative precipitation sums for Loznica



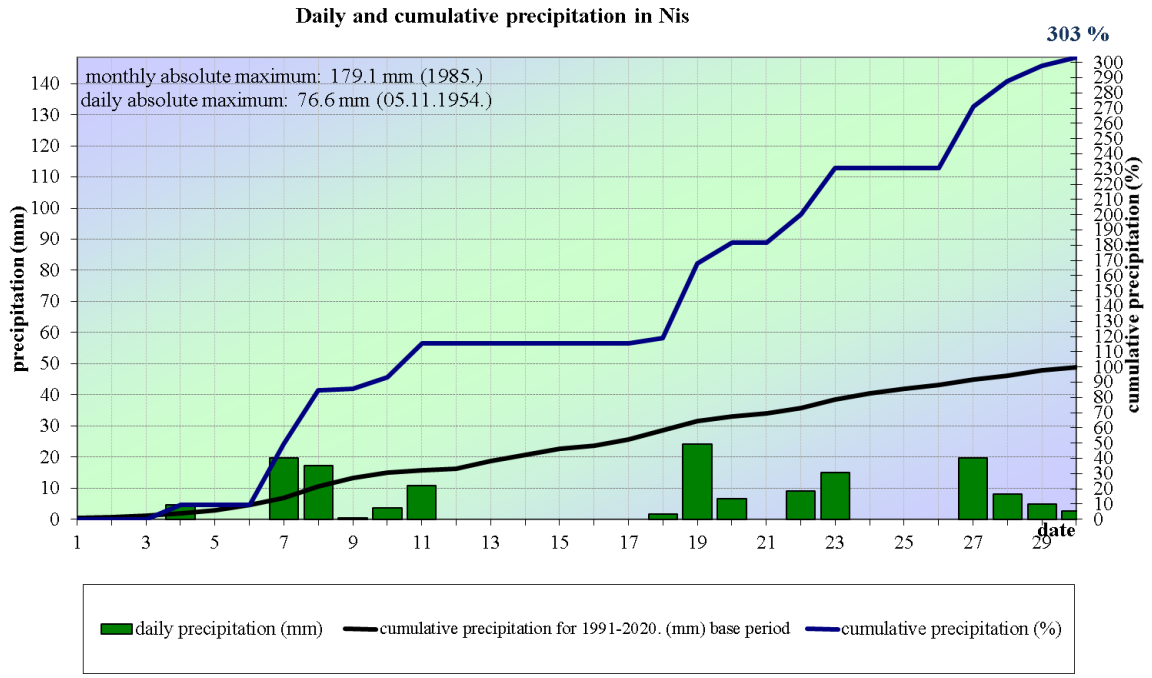
Appendix 35. Daily and cumulative precipitation sums for Kragujevac



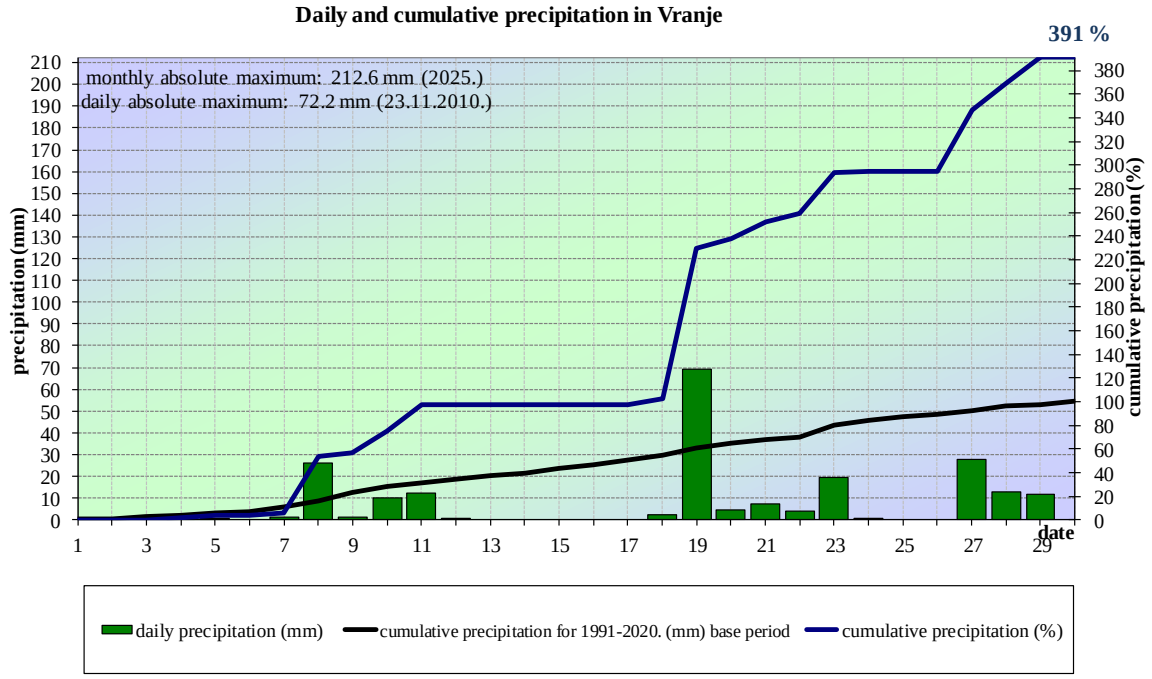
Appendix 36. Daily and cumulative precipitation sums for Negotin



Appendix 37. Daily and cumulative precipitation sums on Zlatibor



Appendix 38. Daily and cumulative precipitation sums for Nis



Appendix 39. Daily and cumulative precipitation sums for Vranje