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- ***Record-breaking maximum daily air temperature on July 26 at Krusevac (44°C) and Banatski Karlovac (42°C)***
- ***Significantly above the average number of tropical days and above average number of tropical nights***
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Air temperature

The year of 2025, with the mean annual air temperature of 12.4ºC, was the third warmest (Figure 1) **for Serbia in the period from 1951 up to day, and the fourth warmest at Belgrade, with the mean annual air temperature of 14.7ºC, since the record-keeping began in 1888** (Appendix, Figure 1). **Among the four warmest years on record for most meteorological stations** (Table 1).

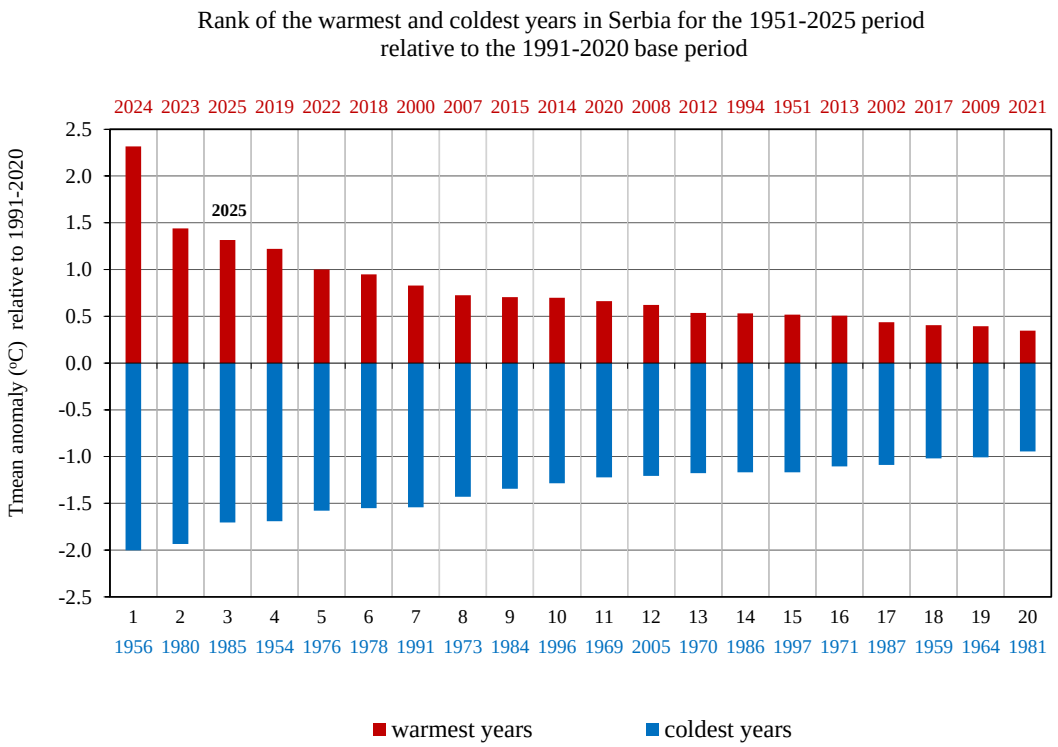


Figure 1. Rank of the warmest and coldest years for Serbia for the 1951-2025 period

Mean annual air temperature ranged from 11.2ºC at Pozega up to 14.7ºC at Belgrade, and on the mountains from 5.7ºC at Kopaonik (Appendix, Figure 4) to 9.5ºC at Zlatibor. Departure of the mean annual air temperature for the 1991-2020 base period ranged from +1.0ºC at Zajecar and Sremska Mitrovica to +1.6ºC at Cuprija and Crni Vrh (Appendix, Figure 5), with the anomaly of **+1.3ºC for the entire Serbia.** Based on the percentile method[1] 2025 was in the category of extremely warm in almost entire Serbia (Appendix, Figure 11).

Table 1. Rank of the 2025, mean air temperature, average and anomaly for the 1991-2020 period

STATION	historical period	Tmean (°C) 2025	reference period 1991-2020	anomaly (°C)	rank of the 2025
PALIC	1945-2024	12.9	11.8	1.1	6
SOMBOR	1942-2024	12.8	11.7	1.1	6
NOVI SAD	1948-2024	13.5	11.9	1.5	3
ZRENJANIN	1946-2024	13.3	12.1	1.2	6
KIKINDA	1948-2024	13.3	11.9	1.4	3
B. KARLOVAC	1986-2024	13.2	12.0	1.3	3
LOZNICA	1952-2024	13.4	12.2	1.2	4
S. MITROVICA	1925-2024	12.8	11.8	1.0	7
VALJEVO	1927-2024	13.3	12.0	1.3	4
BEOGRAD	1888-2024	14.7	13.2	1.5	4
KRAGUJEVAC	1925-2024	13.5	12.1	1.4	3
S. PALANKA	1939-2024	13.4	12.1	1.3	2
V. GRADISTE	1926-2024	13.1	11.8	1.3	3
C. VRH	1967-2024	8.8	7.2	1.6	2
NEGOTIN	1928-2024	13.8	12.4	1.3	5
ZLATIBOR	1951-2024	9.5	8.3	1.2	3
SJENICA	1947-2024	8.6	7.2	1.4	2
POZEGA	1952-2024	11.2	10.1	1.1	3
KRALJEVO	1927-2024	13.2	11.9	1.3	3
KOPAONIK	1950-2024	5.7	4.1	1.5	2
KURSUMLIJA	1952-2024	12.3	10.8	1.5	2
KRUSEVAC	1930-2024	13.3	11.9	1.4	2
CUPRIJA	1948-2024	13.3	11.7	1.6	3
NIS	1925-2024	13.8	12.4	1.4	2
LESKOVAC	1948-2024	12.7	11.6	1.2	4
ZAJECAR	1930-2024	12.3	11.4	1.0	5
DIMITROVGRAD	1945-2024	11.9	10.4	1.5	3
VRANJE	1926-2024	12.8	11.6	1.2	4

In 2025, the **highest daily air temperature of 44.0ºC was measured at Krusevac** on July 26, **breaking the previous record** of 43.7°C set on July 24, 2007). Also on July 26, **record-breaking maximum daily air temperature of 42.0°C was measured at Banatski Karlovac** (the previous record of 41.6°C was set on July 26, 2007). **Significantly above the average number of tropical days**[2] was recorded in most of Serbia. The highest number of tropical days, total of 89 days, was recorded at Cuprija and Leskovac. In most of Serbia, number of tropical days ranged from 54 to 85 days, which is 19 to 38 tropical days above the average for the 1991-2020 base period, in mountainous regions up to 16 tropical days, 9 above the average (at Zlatibor). Belgrade observed 71 tropical days, which is 26 days above the average.

[1] 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

[2] Tropical day is defined as the day with the maximum daily air temperature of 30°C and more

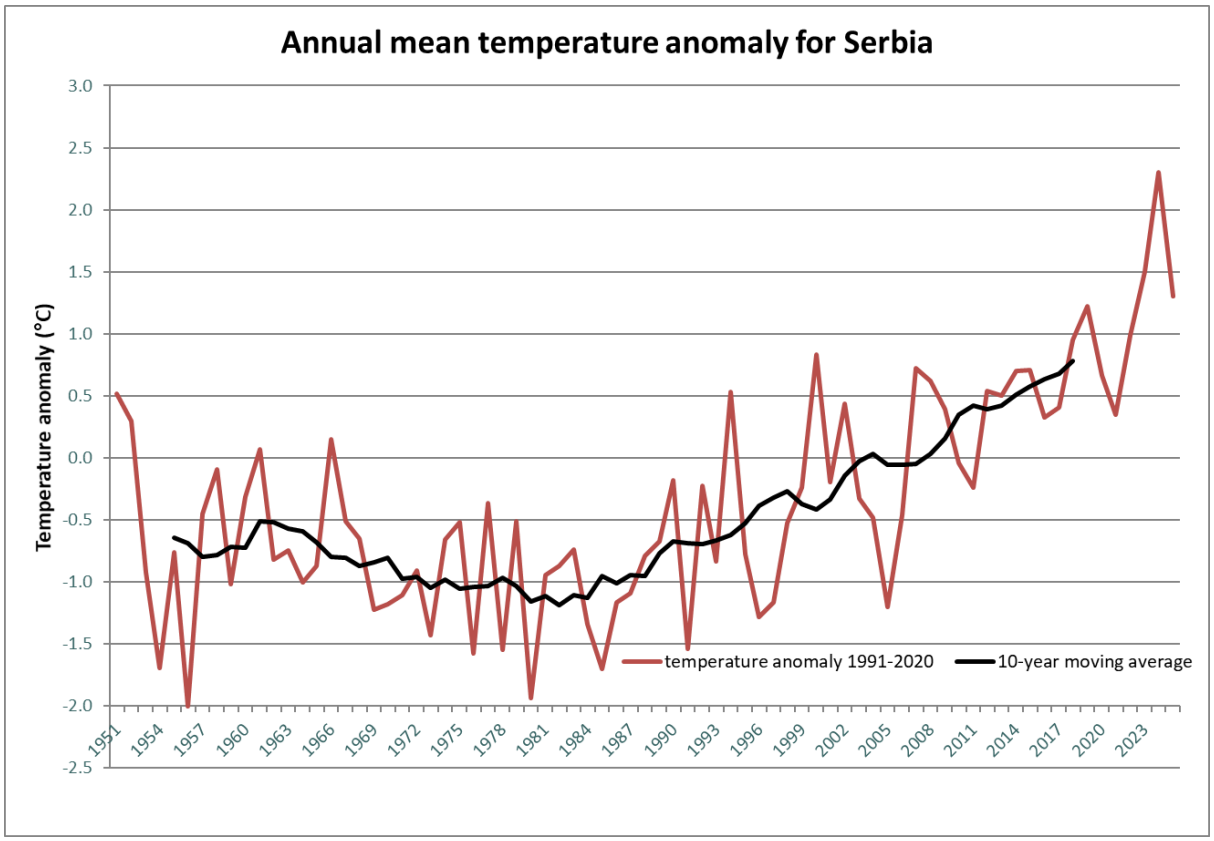


Figure 2. Trend of the mean annual air temperature anomaly for Serbia, 1951-2025 period

Above the average number of tropical nights[3] was recorded in most of Serbia. The highest number of 45 tropical nights was recorded at Belgrade, which is 19 above the average. Tropical nights were not recorded at Dimitrovgrad, Kursumlija, Sjenica and Kopaonik.

The lowest daily air temperature of –21.7ºC was measured at Sjenica on February 20. **Number of days with severe frost[4] was below the average in entire Serbia**, ranging on the mountains from 4 days at Zlatibor to 20 days at Kopaonik (14 days below the average), and elsewhere up to 7 days at Zajecar (3 days below the average). Days with severe frost were not recorded at Palic, Sombor, Novi Sad, Kikinda, Banatski Karlovac, Loznica, Valjevo, Kraljevo and Belgrade.

Number of ice days[5] ranged from 1 at Negotin to 9 at Zrenjanin, Novi Sad and Sremska Mitrovica. On the mountains, number of ice days ranged from 14 in Sjenica to 37 at Kopaonik. **Significantly below the average in entire Serbia, from 7 days less at Sremska Mitrovica and Smederevska Palanka up to 29 ice days less than average at Kopaonik.**

Number of frost days[6] ranged from 41 days at Belgrade to 92 days at Zajecar, and on the mountains from 92 at Crni Vrh to 133 at Kopaonik. **Number of frost days was below the average in entire Serbia**, from 2 days less at Vranje up to 30 frost days less than average at Kopaonik. **Record-breaking low number of frost days at Crni Vrh** (92 days) thereby besting the previous record low number of 94 frost days set in 2014.

[3] Tropical night is defined as the night with the minimum daily air temperature of 20°C and more
[4] Day with severe frost is defined as the day with the minimum daily air temperature below –10°C
[5] Ice day is defined as the day with the maximum daily air temperature below 0°C
[6] Frost day is defined as the day with the minimum daily air temperature below 0°C

Figure 3 shows distribution of yearly precipitation and yearly mean air temperature and their accompanying terciles for the period 1981-2025, relative to the 1991-2020 base period. **Based on precipitation 2025 was at the lower tercile threshold and by mean air temperature significantly above the upper tercile.**

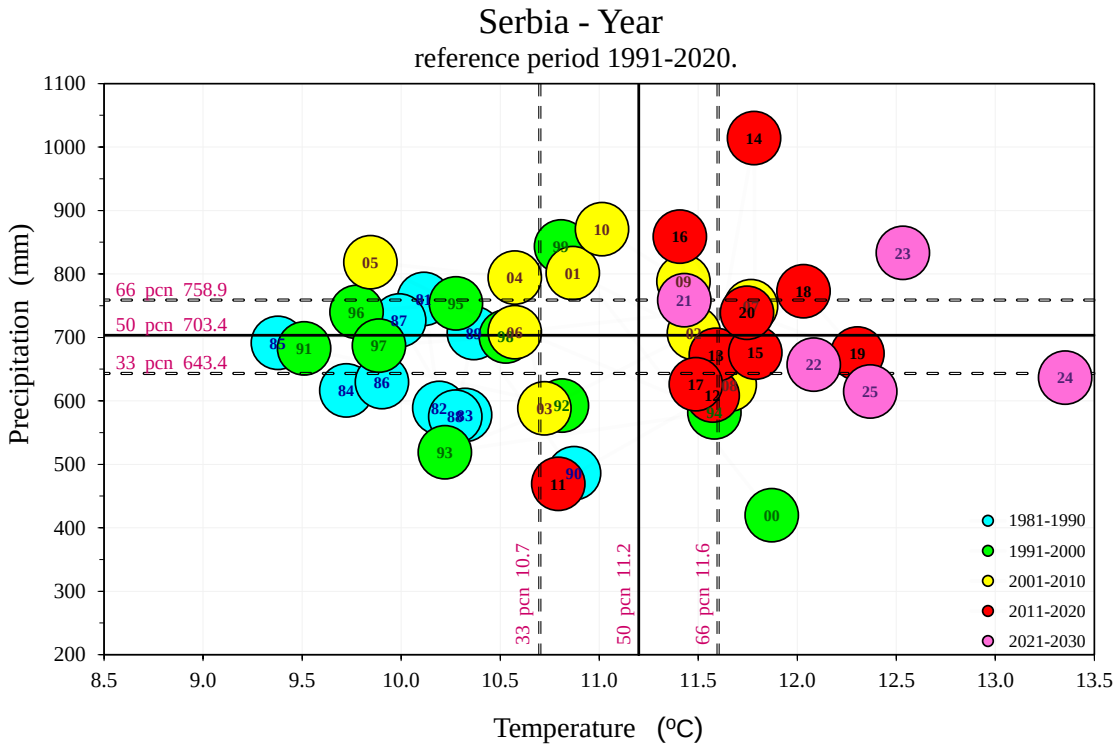


Figure 3. Precipitation and mean air temperature and their accompanying terciles for Serbia for the 1981-2025 period relative to the 1991-2020 base period

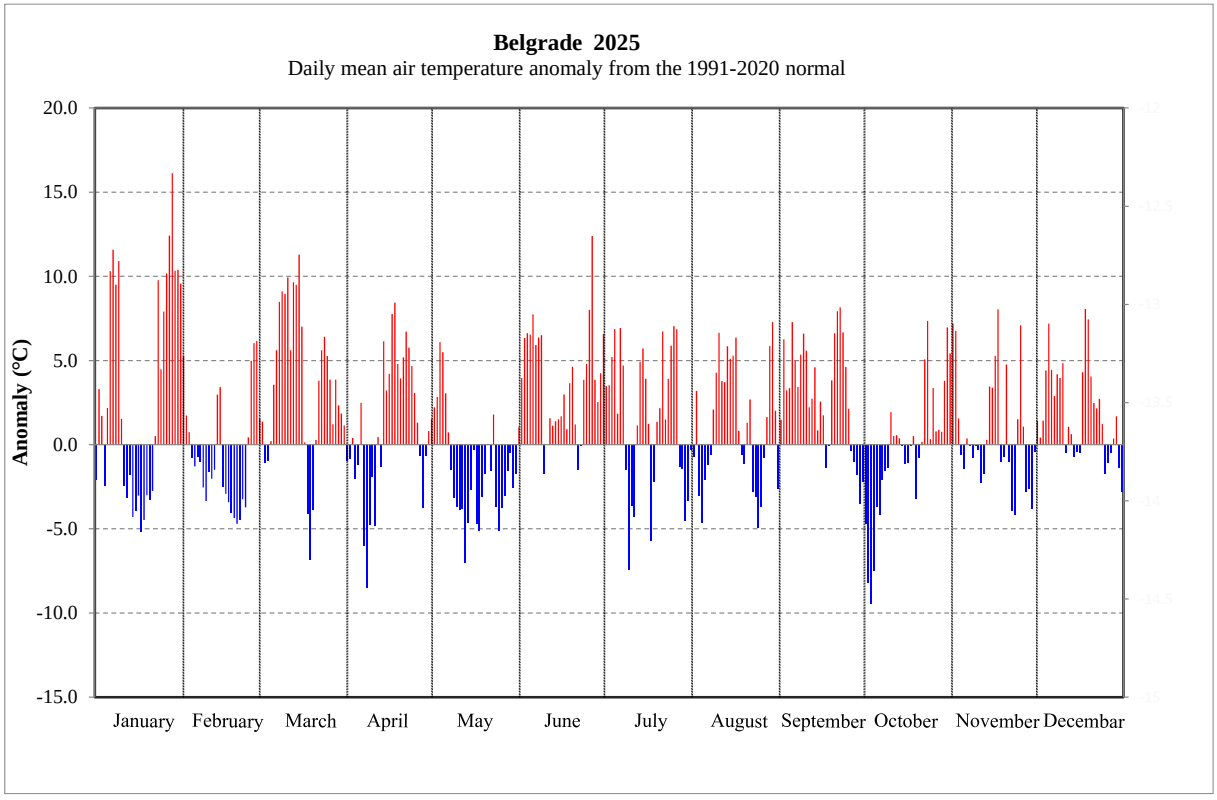


Figure 4. Daily mean air temperature anomaly from the 1991-2020 normal for Belgrade

Precipitation

The year of 2025 was the 20th driest for Serbia since 1951 (Figure 5). Annual precipitation sums ranged from 408.1 mm at Kikinda (Appendix, Figure 7) to 784.9 mm at Dimitrovgrad, and on the mountains from 716.5 mm at Sjenica to 949.2 mm at Kopaonik. Precipitation sums compared to the 1991-2020 normal ranged from 67% at Banatski Karlovac to 118% at Dimitrovgrad (Appendix, Figure 8).

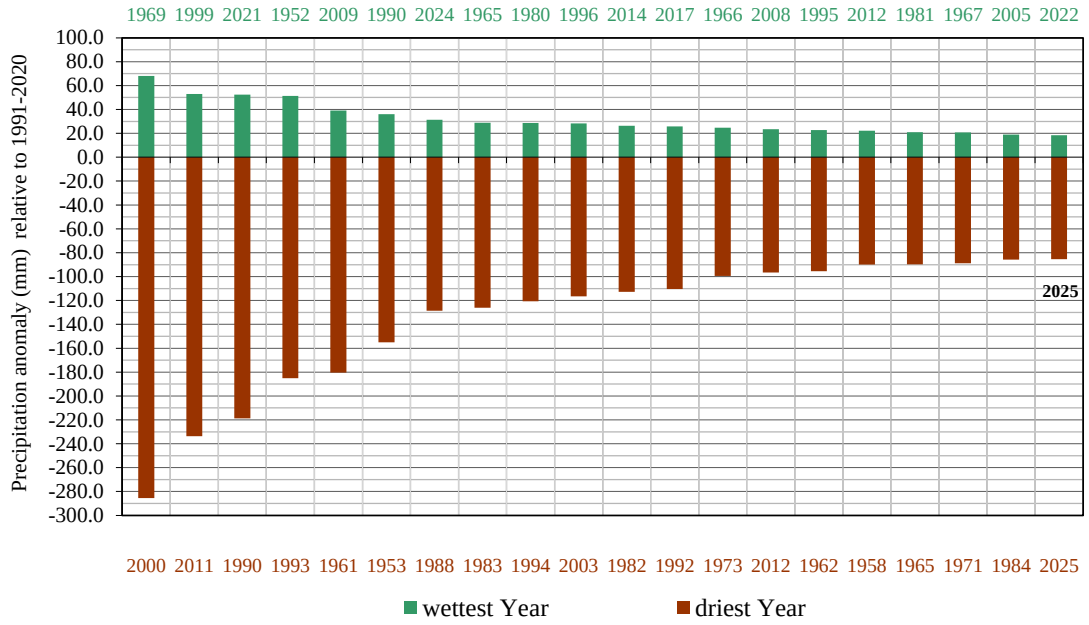


Figure 5. Rank of the wettest and driest years for Serbia for the 1951-2025 period

Annual precipitation sums were within the average in most parts of western, central and southern Serbia, in dry category in northern, eastern and some parts of western and central Serbia, in very dry category at Kikinda, Novi Sad, Banatski Karlovac and Belgrade, and in wet category at Leskovac, Dimitrovgrad and Vranje (Appendix, Figure 14).

The highest daily precipitation sum of 69.2 mm was measured at Vranje on September 19.

Number of rainy days, with the precipitation sums 0.1 mm and above, ranged from 106 at Palic to 138 at Cuprija, and in the upland from, 139 at Crni Vrh to 155 rainy days at Kopaonik.

Number of days with precipitation sums of 20 mm and above ranged from not any at Kikinda, to 10 at Loznica and Dimitrovgrad, and on the mountains from 4 at Sjenica to 11 at Crni Vrh.

Extremely low number of days with snow cover in entire Serbia, from none at Palic to 20 at Kursumlija, and in the upland from 52 at Sjenica to 133 days at Kopaonik. Anomaly ranged from 23 days below the average at Kursumlija to 58 days below the average at Crni Vrh. **Record low number of 55 days with snow cover was registered at Crni Vrh** (previously 74 days in 2023 and 2024), **Loznica 6 days** (previously 8 days in 1974, 1989 and 2020)**, Banatski Karlovac 1 day** (previously 3 days in 2020) **and Palic none** (previously 2 days in 1949 and 2024). The highest snow depth of 59 cm was recorded at Kopaonik on October 4. In the lowlands, the highest snow depth of 13 cm was registered at Kursumlija on February 17. The **absolute lowest snow depth of 1 cm was measured at Banatski Karlovac** (on December 26) **and Veliko Gradiste** (on January 22).

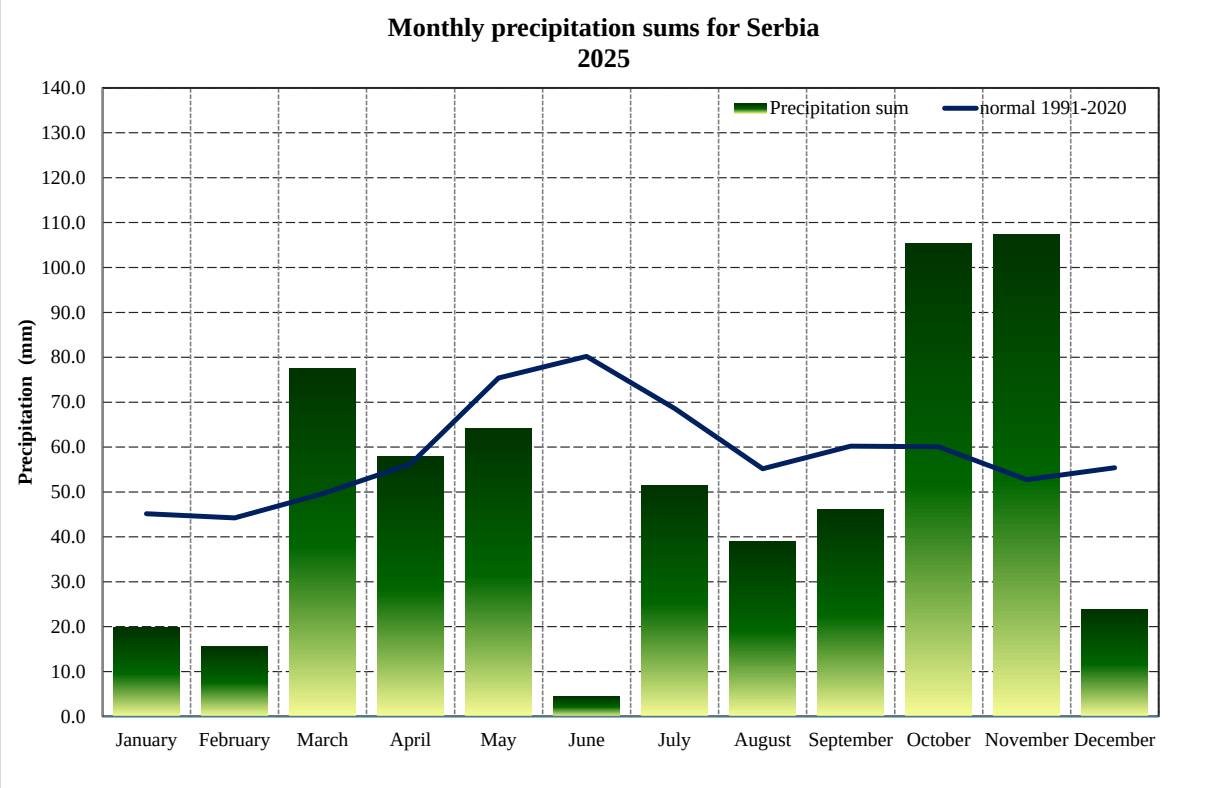


Figure 6. Monthly precipitation sums for Serbia (mean monthly sum per station)

Heat and cold waves

During winter 2024/2025, there were 3 heat waves[7]. The first heat wave was recorded at Negotin and Zajecar, lasting from December 30 to January 3, the second heat wave was registered at Kikinda, Belgrade and Nis lasting from 6 to 10 January, and the third heat wave lasted from January 25 to 31 affecting most of Serbia apart from Loznica and Vranje. Dimitrovgrad observed 2 cold waves[8] lasting from 8 to 12 February, and then from 19 to 23 February corresponding with the cold wave observed at Zajecar.

In spring, one heat wave was observed in all of Serbia apart from Loznica. It lasted from the middle of the first until the middle of the second decade of March at most stations. The longest lasting heat wave lasted for 12 days, from 5 to 16 March at Crni vrh, Vranje and Dimitrovgrad. There were 2 cold waves. The first cold wave lasted from 6 to 11 April at Vranje and from 7 to 11 April at Zrenjanin, Veliko Gradiste, Smederevska Palanka, Banatski Karlovac and Zajecar. The second heat wave was observed in the middle of May in most of Serbia. The longest cold wave lasted for 7 days at Sremska Mitrovica, from 9 to 15 May, and at Vranje from 14 to 20 May.

During summer, there were 5 heat waves lasting from 2 to 8 June across entire Serbia apart from Palic, second and third heat wave were registered from 23 June to 8 July in parts of central, eastern and southern Serbia, the fourth lasted from 20 to 27 July in the eastern, southern and parts of central Serbia, and the fifth in the period from 8 to 16 August in certain parts of central and southern Serbia. Two cold waves were recorded from 12 to 16 June at Veliko Gradiste and Cuprija, as well as from 23 to 29 August at Zajecar.

There were 2 heat waves during autumn. The first heat wave was registered from 2 to 9 Sptember at Kikinda and Negotin, from 5 to 9 September at Veliko Gradiste and Pozega and from 5 to 10 September at Cuprija, Leskovac and Vranje. The second heat wave was recorded in most parts of Serbia in the period from 19 to 24 September. Heat wave was registered from October 29 to November 3 at Novi Sad and Veliko Gradiste, as well as from 13 to 18 November at Crni Vrh.

[7] Heat wave, according to the percentile method, is a period of minimum five days with maximum daily air temperature is in the very warm and extremely warm categories

[8] Cold wave, according to the percentile method, is a period of minimum five days with minimum daily air temperature is in the very cold and extremely cold categories

Monthly and seasonal overview of the climate characteristics and record values of temperatures and precipitation recorded in 2025

January – The 4th warmest and 10th driest January for Serbia since 1951. The 2nd warmest January at Crni Vrh, Kopaonik and Kursumlija. Daily maximum air temperature for January was exceeded at 10 meteorological stations (Table 2). Record low number of frost days at Crni Vrh (16 days) and Kopaonik (22 days) ever recorded. Three heat waves were registered. The 2nd driest January at Crni Vrh (12.1 mm, 25% of normal) and Negotin (3.8 mm, 8% of normal).

Table 2. Absolute daily maximum air temperature surpassed in January

STATION	2025		exceeded absolute Tmax	date absolute Tmax
	Tmax January 2025	date Tmax		
KRAGUJEVAC	21.8	28	20.6	31. I 2002.
S.PALANKA	21.8	28	20.6	31/21. I 2002/2007.
S.MITROVICA	19.9	28	18.8	31. I 1965.
V.GRADISTE	18.8	8	17.8	18. I 2023.
ZRENjANIN	18.6	28	17.7	7. I 2001.
BELGRADE	21.4	28	20.7	7. I 2001.
KIKINDA	17.7	28	17.1	29. I 2002.
CUPRIJA	20.7	28	20.6	31. I 2002.
KRALjEVO	20.1	28	20.0	19. I 2007.
NOVI SAD	18.9	28	18.8	18. I 2014.

February – The 7th driest and averagely warm February for Serbia. Two cold waves at Dimitrovgrad and one at Zajecar. The 3rd driest February at Kraljevo and Crni Vrh and the 4th driest at Negotin (Table 3).

Table 3. Ranking of February 2025 in terms of precipitation, average and percentage of the 1991-2020 normal

STATION	historical period	∑RR for February 2025 (mm)	normal for February 1991-2020	percentage (%) from normal	ranking for February 2025 (ascending RR)
CRNI VRH	1967-2024	8.2	46.6	18	3
KRALJEVO	1926-2024	10.2	47.0	22	3
NEGOTIN	1941-2024	4.3	46.7	9	4
KRAGUJEVAC	1925-2024	10.0	40.2	25	5
CUPRIJA	1926-2024	11.0	47.8	23	5
ZAJECAR	1925-2024	5.7	40.4	14	6
V.GRADISTE	1926-2024	6.4	41.6	15	6
VRANJE	1926-2024	7.1	41.0	17	6
LOZNICA	1925-2024	12.6	54.5	23	6
ZLATIBOR	1950-2024	21.8	71.2	31	7

March – The 3rd warmest and 9th wettest March for Serbia since 1951. The warmest March at Crni Vrh, 2nd warmest fat Dimitrovgrad, Cuprija, Leskovac and Kopaonik. Record-breaking mean monthly maximum air temperature (Table 4) at Crni Vrh, Cuprija and Dimitrovgrad. Tropical day was recorded for the 2nd time in history at Krusevac. Heat wave was recorded at all stations apart from Loznica. The highest mean minimum air temperature since record keeping began at Crni Vrh (2.7ºC). Record low number of frost days at Crni Vrh (8 days) and

Kopaonik (12 days). The wettest March at Crni Vrh (107.4 mm, 204% of normal). Absolute daily March maximum precipitation sum was recorded at Kopaonik (47.9 mm).

Table 4. Surpassed values of mean monthly maximum air temperature

STATION	Tmeanmax March 2025	Previous record Tmeanmax entire set	Year of previous record Tmeanmax
CUPRIJA	17.9	17.6	2001
DIMITROVGRAD	17.4	16.9	1947
CRNI VRH	10.8	10.3	1990

April – Warm and averagely rainy April in most of Serbia. The wettest April at Zrenjanin (124 mm, 302% of normal) and 3rd wettest at Valjevo (132.2 mm, 222% of normal). The 3rd driest April at Kikinda (9.6 mm, 23% of normal). Absolute daily precipitation maximum for April was surpassed at Zrenjanin (43.7 mm).

May – Cold and averagely rainy May in most of Serbia. The 6th coldest May at Banatski Karlovac. Cold wave in mid-May in most of Serbia lasted up to 7 days. The 6th driest May at Pozega (35 mm, 43% of normal).

June – The warmest (Figure 7) and the driest (Figure 8) June for Serbia since 1951. Absolute daily maximum air temperature for June was exceeded on June 26 at eight stations in Serbia, at Sjenica, the previous record from June 2024 was equalled. Record-breaking number of summer days and tropical days at most stations (Table 5). Record-breaking number of 8 days with the maximum air temperature above 35 °C at Negotin, Nis and Cuprija. Two heat waves at the beginning and third decade of the month. Precipitation was not recorded at 8 stations. Record low number of days with precipitation in most of Serbia. Record-breaking number of insolation hours in most of Serbia.

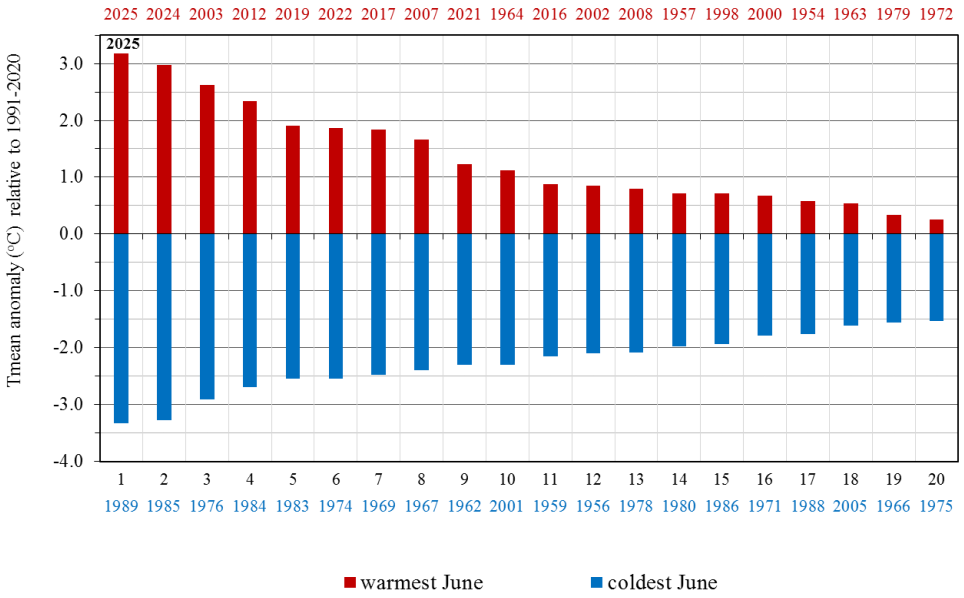


Figure 7. Rank of the warmest and coldest June in Serbia for the period from 1951 to 2025

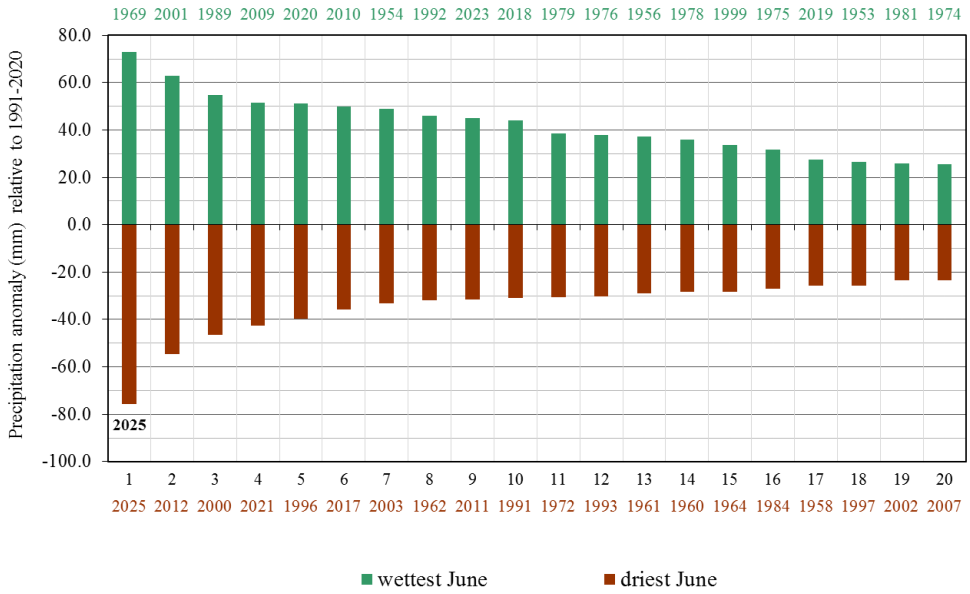


Figure 8. Rank of the wettest and driest June in Serbia for the period from 1951 to 2025

Table 5. Record-breaking number of summer days and tropical days for June

STATION	Number of summer days June 2025	The previous record of sumer days	Year of the previous record	Number of tropical days June 2025	The previous record of tropical days	Year of the previous record
SOMBOR	29	-	-	18	equal	2003
KIKINDA	29	-	-	19	17	2024
B.KARLOVAC	30	equal	2022	17	-	-
VALjEVO	30	28	2003/2022/2024	15	-	-
BELGRADE	30	29	2022	17	-	-
KRAGUJEVAC	30	29	2024	17	-	-
S.PALANKA	30	28	2003/2022/2024	17	-	-
V.GRADISTE	30	equal	2022	25	20	2003/2022
CRNI VRH	16	14	2024	2	equal	2000
NEGOTIN	30	equal	1927/2022	25	-	-
SJENICA	19	18	2024	2	-	-
POZEGA	29	28	2003	14	equal	2012/2019
KRALjEVO	30	28	2003/2024	20	17	2024
KURSUMLIJA	30	29	2024	16	-	-
KRUSEVAC	30	29	2022/2024	20	19	2003/2012/2024
CUPRIJA	30	equal	2024	27	21	2003
NIS	30	29	2012/2022/2024	21	equal	2003
LESKOVAC	30	29	2012/2024	24	21	2024
ZAJECAR	30	equal	2024	22	21	2024
DIMITROVGRAD	30	29	2024	18	-	-
VRANjE	30	29	2024	18	-	-

July – The 5th warmest and averagely rainy July in Serbia. Absolute maximum daily air temperature was exceeded at Krusevac (44ºC) and Banatski Karlovac (42ºC) on July 26, and July maximum was surpassed on the same day at Sjenica (34.9ºC). Record-breaking number of 14 days with the maximum air temperature of 35°C and above at Vranje and Dimitrovgrad. Two heat waves at the beginning and middle of the month.

August – Averagely warm and averagely rainy August in Serbia. The 6th warmest August at Nis. Heat wave in mid-month at 6 stations. Record low minimum daily air temperature for August at Zajecar (4.1ºC) and Sremska Mitrovica (5.5ºC). Maximum number of days with precipitation of 50 mm and above exceeded at Dimitrovgrad (2 days).

September – The 6th warmest and averagely rainy September for Serbia. The warmest September at Kikinda and Banatski Karlovac since the record keeping began. Record-breaking number of tropical days (Table 6) at Novi Sad, Zrenjanin, Kikinda, Banatski Karlovac, Kursumlija, Krusevac and Leskovac. Two heat waves were recorded. The 6th wettest September at Kragujevac. Absolute daily precipitation maximum sum for September was surpassed on September 4, at Kragujevac (59.4 mm) registering for the first time a day with precipitation of 50 mm and more.

Table 6. Record-breaking number of tropical days for September

STATION	Number of tropical days September 2025	Previous record	Year of the previous record
LESKOVAC	**18**	17	2011
KRUŠEVAC	**16**	14	1932/1946/2011/2012
KURŠUMLIJA	**15**	14	1994
NOVI SAD	**15**	14	2023
ZRENjANIN	**14**	12	1994/2012
B.KARLOVAC	**14**	12	1994
KIKINDA	**13**	10	1994/2011/2020

October – The 5th wettest October for Serbia and averagely warm in most of the country. The wettest October at Krusevac, Leskovac, Dimitrovgrad, Kragujevac and Kopaonik (Table 7). Absolute daily precipitation maximum for October was surpassed on October 3 at Krusevac (68.6 mm), Kursumlija (56.6 mm) and Zajecar (47.9 mm). Record-breaking October snow cover (Figure 9) at Kopaonik (59 cm) and Zlatibor (35 cm). The earliest onset of snow cover on record was registered at Kursumlija, Dimitrovgrad, Vranje and Crni Vrh on October 3.

Table 7. Ranking of October 2025 in terms of precipitation, average, and percentage of the 1991-2020 normal

STATION	historical period	∑RR for October 2025 (mm)	normal for October 1991-2020	percentage (%) from normal	ranking for October 2025 (descending RR)
KRUSEVAC	1925-2024	179.7	55.4	324	1
LESKOVAC	1925-2024	183.2	60.7	302	1
DIMITROVGRAD	1926-2024	161.1	59.6	270	1
KOPAONIK	1949-2024	192.9	82.0	235	1
KRAGUJEVAC	1925-2024	127.4	54.2	235	1
KURSUMLIJA	1925-2024	167.2	57.1	293	2
NIS	1925-2024	131.9	55.8	236	2
CUPRIJA	1926-2024	111.3	57.4	194	3
ZLATIBOR	1950-2024	152.7	81.4	187	4
VRANJE	1926-2024	131.9	60.2	219	6
NEGOTIN	1941-2024	120.5	57.2	211	7
ZAJECAR	1925-2024	109.4	53.5	204	7
S.PALANKA	1926-2024	110.4	57.3	193	9
V.GRADISTE	1926-2024	103.5	54.3	191	10
KRALJEVO	1926-2024	109.7	62.9	174	10

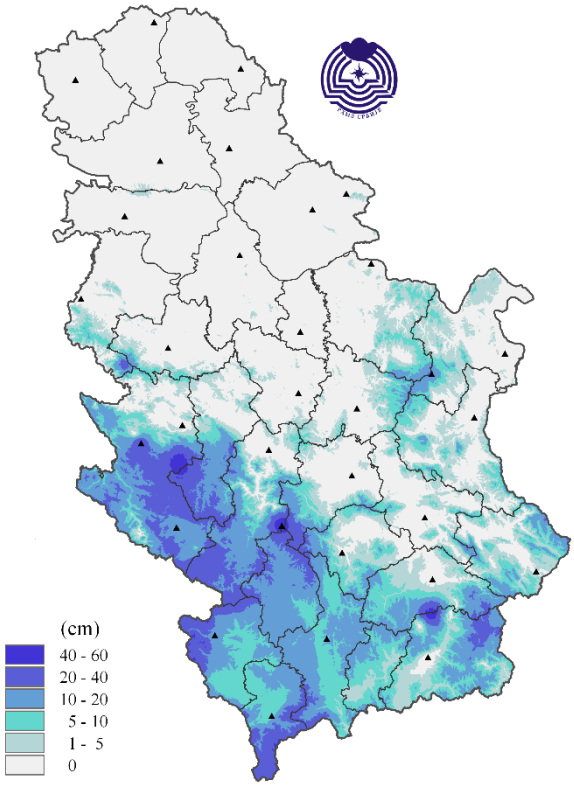


Figure 9. Snow cover height (cm) in Serbia at 8 a.m. on October 4, 2025

November – The 5th wettest and averagely warm November in Serbia. The wettest November at Leskovac (243.1 mm, 438% of normal) and Vranje (212.6 mm, 391% of normal) since the record keeping began. Heat wave was recorded at the beginning of the month at Novi Sad and Veliko Gradiste, and mid-month at Crni vrh.

December – The 8th driest and warm December in most of Serbia.

Winter 2024/2025 – Warm winter for Serbia as well as dry in most of the country. Three heat waves; the first was recorded at Negotin and Zajecar, the second at Kikinda, Belgrade and Nis, and the third in most of Serbia. Two cold waves at Dimitrovgrad, and 1 at Zajecar. Number of days with snow cover significantly below the normal (Figure 10) in the low-lying areas of Serbia, from 15 days below the average at Loznica to 33 days below the average at Negotin. Snow cover was not recorded at all at Palic and Sremska Mitrovica.

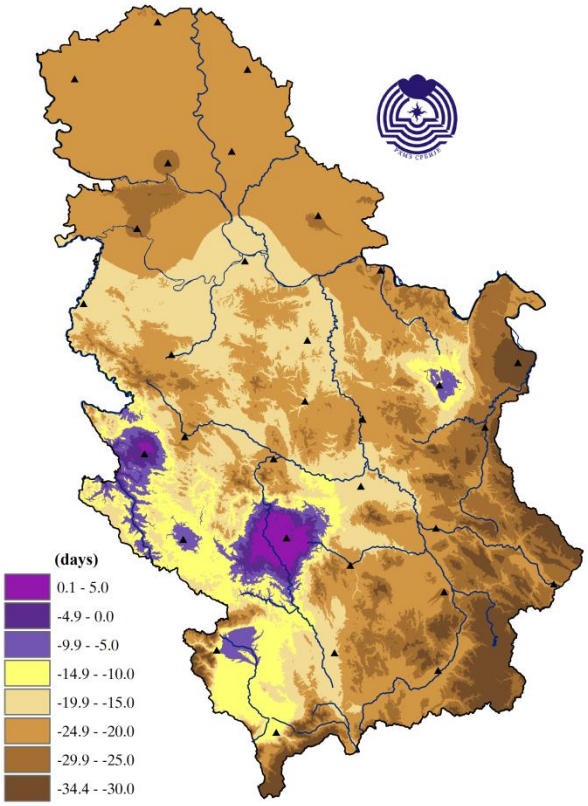


Figure 10. Deviation of number of days with snow cover from the normal

Spring 2025. – The 8th warmest and 19th wettest spring for Serbia since 1951. One heat wave and two cold waves. The 5th wettest spring for Zrenjanin, Valjevo and Zlatibor (Table 8). Record-breaking low number of days with snow cover at Crni vrh (only 4 days).

Table 8. Ranking of spring 2025 in terms of precipitation, average and percentage of the 1991-2020 normal

STATION	historical period	∑RR for Spring 2025 (mm)	normal for Spring 1991-2020	percentage (%) from normal	ranking for Spring 2025 (descending RR)
ZRENJANIN	1925-2024	237.9	137.4	173	5
VALJEVO	1926-2024	323.5	210.7	154	5
ZLATIBOR	1950-2024	350.0	268.1	131	5

Summer 2025 – The 3rd warmest and 4th driest summer for Serbia since 1951 (Figure 11). New absolute maximum of the daily air temperature for Krusevac (44ºC) and Banatski Karlovac (42ºC). The driest summer for Negotin (24.1 mm, 15% of normal, Figure 12). Kikinda recorded the maximum number of summer insolation hours (1049 hours). Exceeded minimum number of thunder days at Negotin (8 days), Pozega (12 days), Palic (9 days) and Kopaonik (9 days).

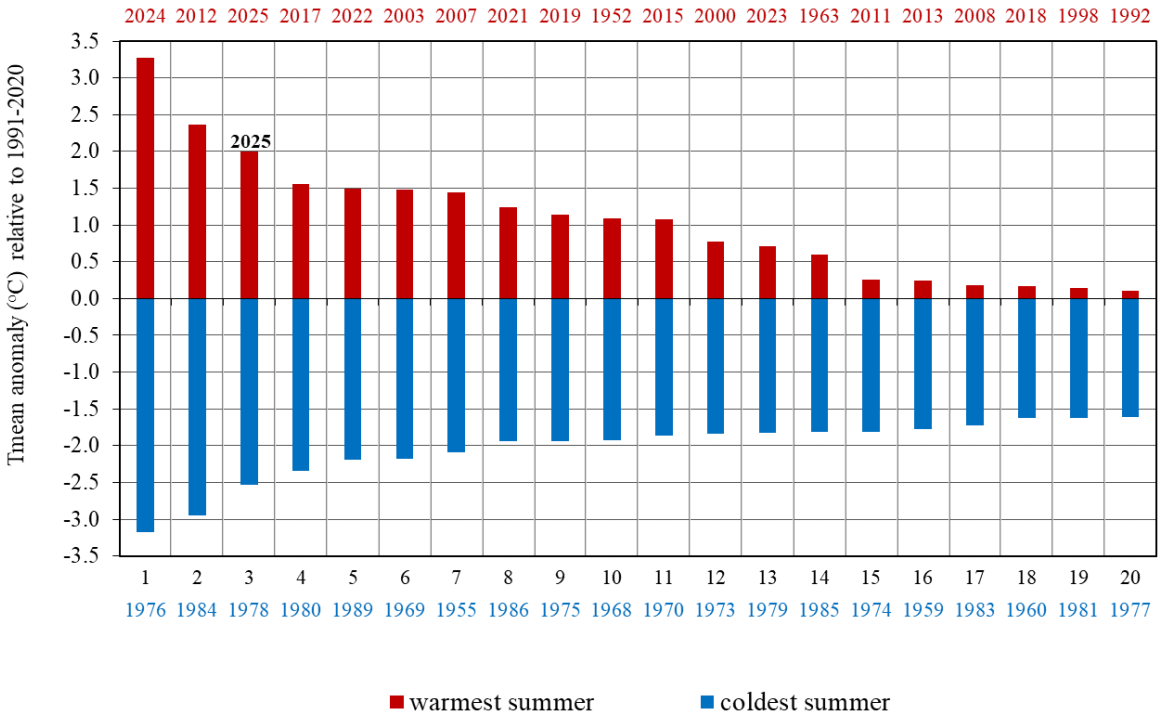


Figure 11. Rank of twenty warmest and coldest summers in Serbia for the 1951-2025 period

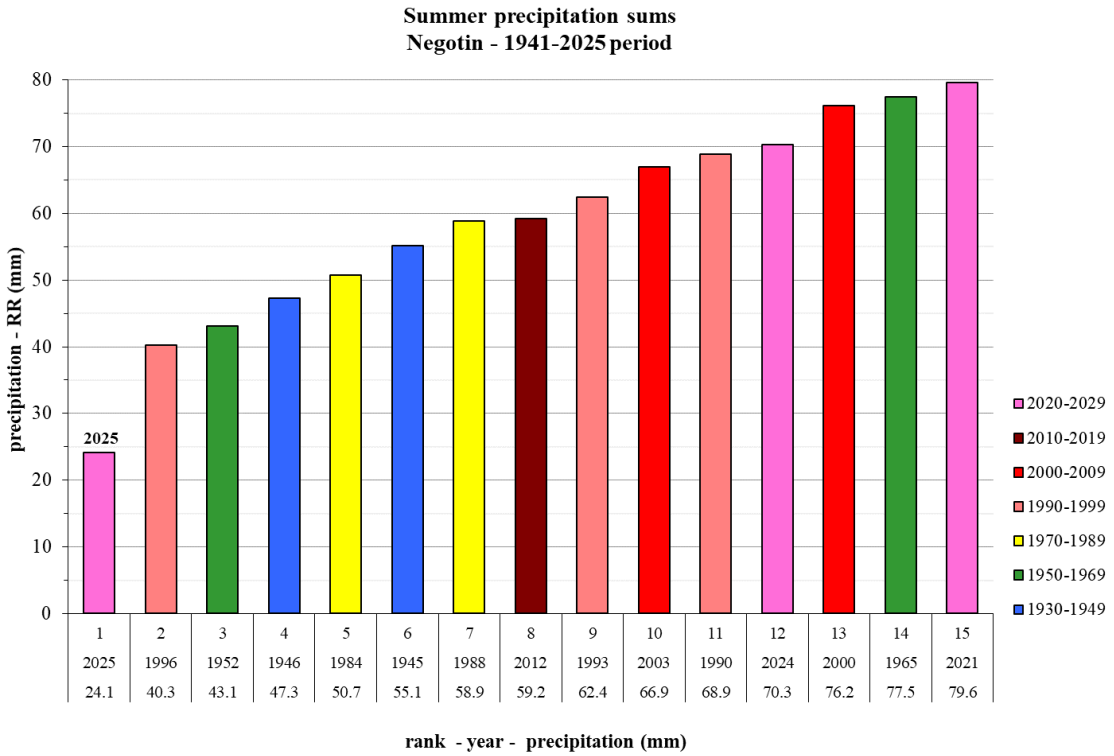


Figure 12. Rank of the driest summers at Negotin

Autumn 2025 – The 4th driest and 10th warmest autumn for Serbia since 1951. Record-breaking maximum number of tropical days at Novi Sad (15 days), Zrenjanun (14 days), Kikinda (13 days), Banatski Karlovac (14 days), Leskovac (18 days) and Kursumlija (15 days). The wettest autumn for the last 100 years at Leskovac (466.6 mm, 277% of normal, Figure 13), Vranje (394.6 mm, 240% of normal), Dimitrovgrad (362 mm, 222% of normal), Kragujevac (332 mm, 218% of normal) and Nis (321 mm, 209% of normal). Absolute maximum of daily precipitation sum for autumn recorded at Kragujevac (59.4 mm). Absolute minimum autumn number of hours of insolation was surpassed at Leskovac (303.7 hours).

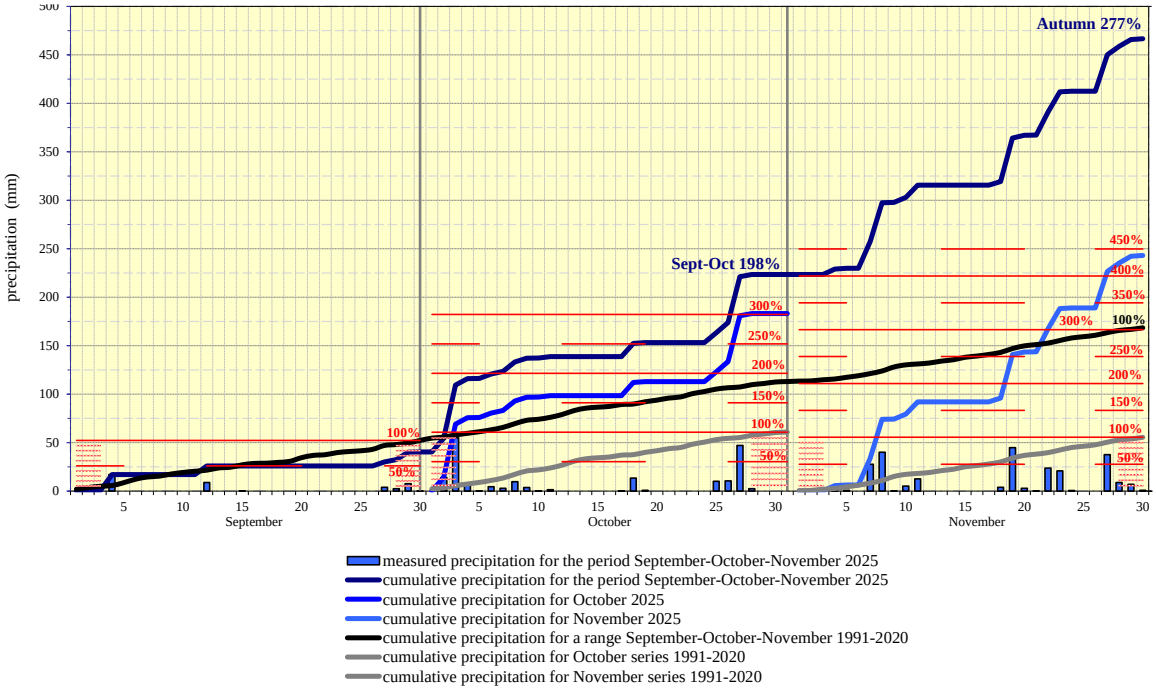


Figure 13. Cumulative precipitation sums for September, October, November and autumn at Leskovac

Note: The climatological analysis of meteorological elements was conducted based on preliminary data from 28 main meteorological stations

Appendix

Table 1.

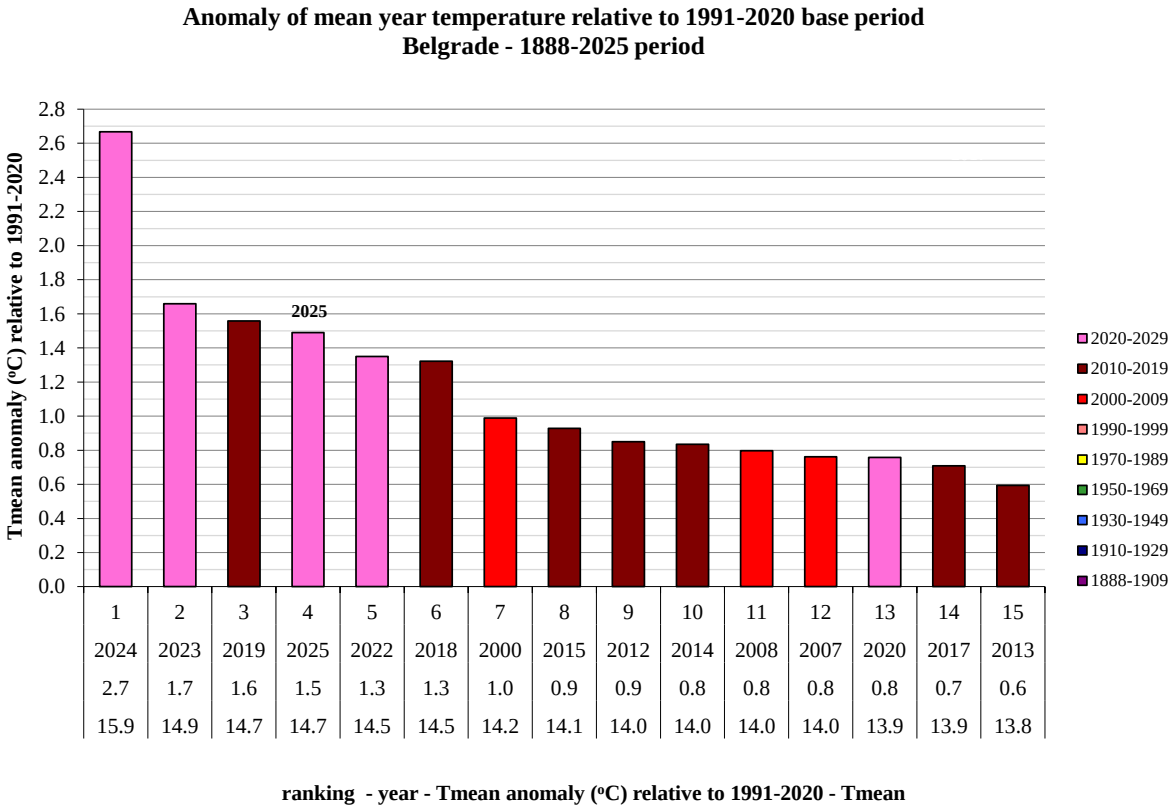
MEAN MONTHLY AND ANNUAL AIR TEMPERATURE (°C)													
station/month	January	February	March	April	May	June	July	August	September	October	November	December	Year
PALIC	2.8	1.2	8.7	13.7	14.8	24.3	24.1	23.4	20.0	11.1	6.7	3.7	12.9
SOMBOR	2.8	1.4	8.7	13.9	15.4	23.6	23.4	22.8	19.7	11.4	6.7	3.7	12.8
NOVI SAD	3.6	2.1	9.7	13.8	15.6	24.4	24.1	23.8	20.6	12.1	7.7	3.8	13.5
ZRENJANIN	3.4	1.7	9.6	13.7	15.2	24.0	23.9	23.6	20.7	11.8	7.9	4.0	13.3
KIKINDA	3.3	1.6	9.4	13.8	15.4	24.3	24.3	23.7	20.8	11.7	7.4	3.9	13.3
B.KARLOVAC	3.7	1.4	9.6	13.4	15.3	24.0	23.7	23.1	20.6	11.6	8.0	4.3	13.2
LOZNICA	4.2	2.4	10.2	14.2	15.6	23.9	23.9	22.5	19.8	12.2	7.9	4.0	13.4
S.MITROVICA	2.9	1.9	9.4	13.4	15.1	23.2	23.1	22.3	19.6	11.5	7.1	3.6	12.8
VALJEVO	3.7	2.3	10.3	13.4	15.7	24.3	24.3	22.9	19.8	11.5	7.5	3.8	13.3
BELGRADE	5.2	3.3	11.8	14.7	16.6	25.7	25.4	24.9	21.6	13.0	8.9	5.0	14.7
KRAGUJEVAC	4.0	2.0	10.5	13.2	15.7	24.3	24.8	23.3	19.6	11.4	8.2	4.4	13.5
S.PALANKA	4.3	2.0	10.5	13.2	15.3	24.1	24.5	23.0	19.7	11.5	8.1	4.0	13.4
V.GRADISTE	3.2	1.6	9.8	13.1	15.4	24.2	23.9	22.9	19.6	10.7	8.0	4.5	13.1
CRNI VRH	1.7	-4.1	5.9	7.5	10.2	19.5	20.0	19.0	14.9	6.2	4.3	0.4	8.8
NEGOTIN	2.5	0.9	9.9	13.7	16.5	26.0	26.5	24.8	21.0	11.7	7.7	3.8	13.8
ZLATIBOR	1.0	-0.6	6.5	8.6	11.2	19.8	20.1	19.0	15.8	7.4	4.6	0.7	9.5
SJENICA	-0.2	-1.2	5.6	7.9	10.6	18.0	18.8	17.7	14.4	6.6	4.8	-0.2	8.6
POZEGA	1.0	0.5	8.6	11.7	14.3	21.5	22.0	20.4	17.5	9.4	5.7	1.7	11.2
KRALJEVO	3.0	2.1	10.8	13.0	15.7	24.2	24.9	23.5	19.5	10.7	7.5	3.5	13.2
KOPAONIK	-1.0	-4.1	1.9	3.5	6.0	14.8	15.4	14.7	11.8	2.9	2.6	-0.5	5.7
KURSUMLIJA	4.1	0.9	9.6	11.4	14.4	22.3	23.3	21.9	18.4	10.2	8.1	3.1	12.3
KRUSEVAC	3.0	1.8	10.8	12.9	15.9	24.2	25.0	23.7	19.9	10.9	8.2	3.6	13.3
CUPRIJA	3.7	1.8	10.3	12.7	15.5	24.5	25.0	23.7	19.8	11.0	8.0	3.9	13.3
NIS	4.0	2.3	10.8	13.0	15.8	24.4	25.8	25.2	20.8	11.2	8.6	3.9	13.8
LESKOVAC	3.1	1.2	9.7	12.3	15.2	23.2	24.8	23.1	19.0	10.3	7.8	3.0	12.7
ZAJECAR	2.8	0.1	8.9	11.9	14.9	23.2	24.3	22.2	18.8	10.2	7.3	3.0	12.3
DIMITROVGRAD	3.0	0.4	9.5	10.6	14.0	21.8	23.7	21.1	17.7	9.6	8.0	3.4	11.9
VRANJE	1.9	2.0	9.9	11.8	14.6	23.1	25.2	23.5	19.7	10.2	8.2	3.3	12.8

exstremely cold | very cold | cold | normal | warm | very warm | extremely warm

Table 2.

MONTHLY AND ANNUAL PRECIPITATION SUM (mm)													
station/month	January	February	March	April	May	June	July	August	September	October	November	December	Year
PALIC	16.6	32.7	83.3	48.6	69.4	1.2	34.9	57.8	15.5	30.9	42.9	13.4	447.4
SOMBOR	23.1	37.2	86.4	45.9	65.1	16.9	29.8	44.1	16.1	48.3	56.4	15.2	484.5
NOVI SAD	18.1	23.6	73.7	43.0	93.2	1.8	60.2	26.2	26.4	31.9	51.2	16.5	465.8
ZRENJANIN	21.5	18.3	53.1	124.0	57.8	0.7	59.7	8.9	18.9	30.8	43.4	19.1	459.2
KIKINDA	27.8	19.6	75.2	9.6	70.9	7.7	37.3	26.6	34.9	27.7	50.5	16.9	408.1
B.KARLOVAC	11.0	14.0	54.1	33.4	57.3	4.6	54.6	21.8	17.2	73.2	66.3	15.8	424.4
LOZNICA	21.1	12.6	117.7	69.7	99.2	1.2	70.5	108.2	29.0	81.4	94.7	17.4	725.7
S.MITROVICA	12.9	11.8	57.5	74.3	70.8	1.0	43.6	22.6	73.3	47.0	57.8	8.6	482
VALJEVO	18.3	19.8	102.9	132.2	84.6	0.0	64.1	37.6	53.1	114.1	75.6	17.6	723.7
BELGRADE	14.3	9.6	64.8	48.1	101.7	0.1	78.5	14.0	26.3	88.0	65.0	15.4	519
KRAGUJEVAC	12.1	10.0	106.2	37.1	31.8	0.0	52.2	39.4	106.9	127.4	97.7	19.1	642.3
S.PALANKA	17.4	15.8	83.4	61.3	90.6	0.1	77.8	42.1	53.8	110.4	92.6	25.3	674.5
V.GRADISTE	22.8	6.4	60.9	29.0	63.9	0.1	95.6	32.5	54.6	103.5	98.8	11.6	579.8
CRNI VRH	12.1	8.2	107.4	84.6	50.3	0.2	42.6	38.1	62.4	100.5	148.3	78.2	733.6
NEGOTIN	3.8	4.3	61.9	50.6	63.3	0.0	15.5	8.6	31.7	120.5	99.4	77.7	537.3
ZLATIBOR	34.2	21.8	184.9	100.4	52.5	4.1	85.2	70.6	46.5	152.7	130.1	22.2	917.4
SJENICA	52.1	15.6	89.4	56.7	54.7	45.2	64.1	39.1	58.8	99.4	121.9	13	716.5
POZEGA	18.8	17.6	113.2	76.6	30.6	0.0	73.8	35.4	63.1	83.7	104.9	25.1	647.2
KRALJEVO	26.7	10.2	82.7	78.3	33.3	0.0	48.5	57.2	94.5	109.7	104.4	22.7	672
KOPAONIK	42.9	31.4	117.6	104.0	56.2	14.4	69.2	32.1	40.1	192.9	199.0	32.9	949.2
KURSUMLIJA	15.9	17.6	40.7	31.2	38.2	0.0	41.8	17.3	51.4	167.2	131.8	29	582.6
KRUSEVAC	21.4	14.0	50.0	41.1	45.4	12.1	52.4	33.0	31.9	179.7	113.0	14.1	609.5
CUPRIJA	18.6	11.0	58.2	21.0	68.0	0.0	47.7	30.7	47.1	111.3	112.4	26.3	561.3
NIS	14.1	12.3	40.7	32.4	50.8	4.1	15.6	20.7	40.6	131.9	148.5	13.5	525.9
LESKOVAC	16.6	15.0	49.0	40.0	68.2	0.0	21.0	53.0	40.3	183.2	243.1	19	750.4
ZAJECAR	7.5	5.7	29.4	45.5	39.4	4.5	50.7	24.9	35.6	109.4	112.5	40.7	506.2
DIMITROVGRAD	10.9	12.3	60.8	56.9	98.2	2.8	41.3	111.4	68.2	161.1	132.7	28.2	784.9
VRANJE	19.1	7.1	65.2	46.4	89.6	1.8	12.4	39.5	50.1	131.9	212.6	13	688.9

extremely dry | very dry | dry | normal | wet | very wet | extremely wet



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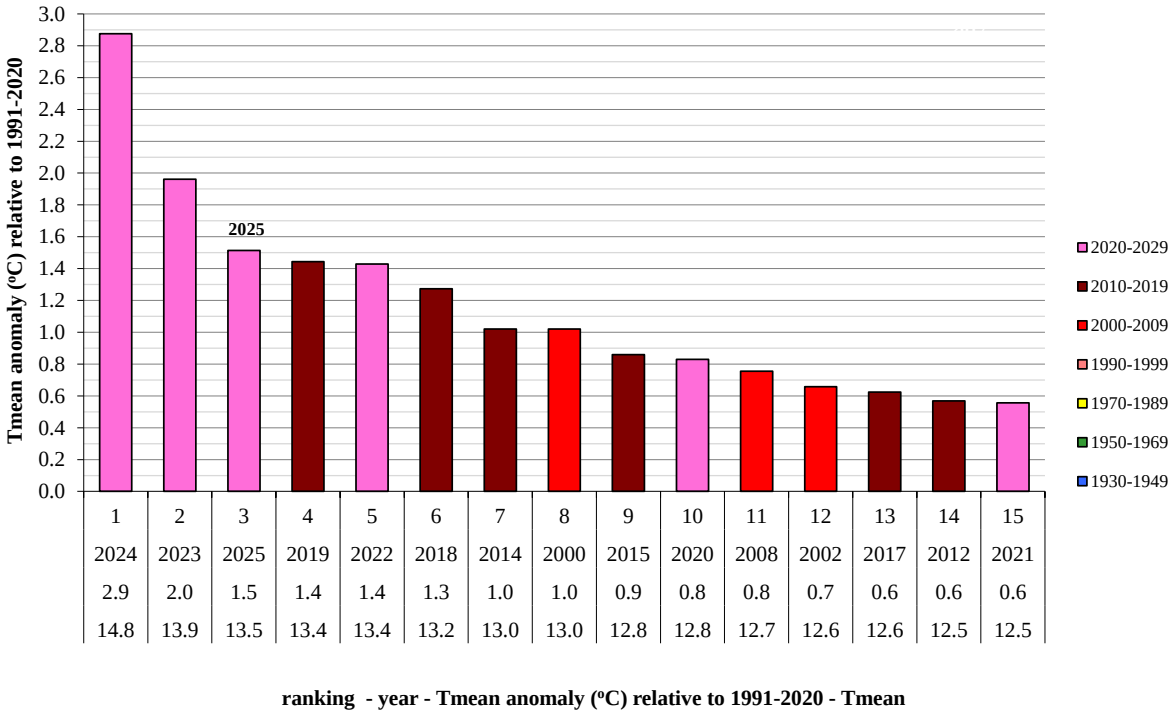
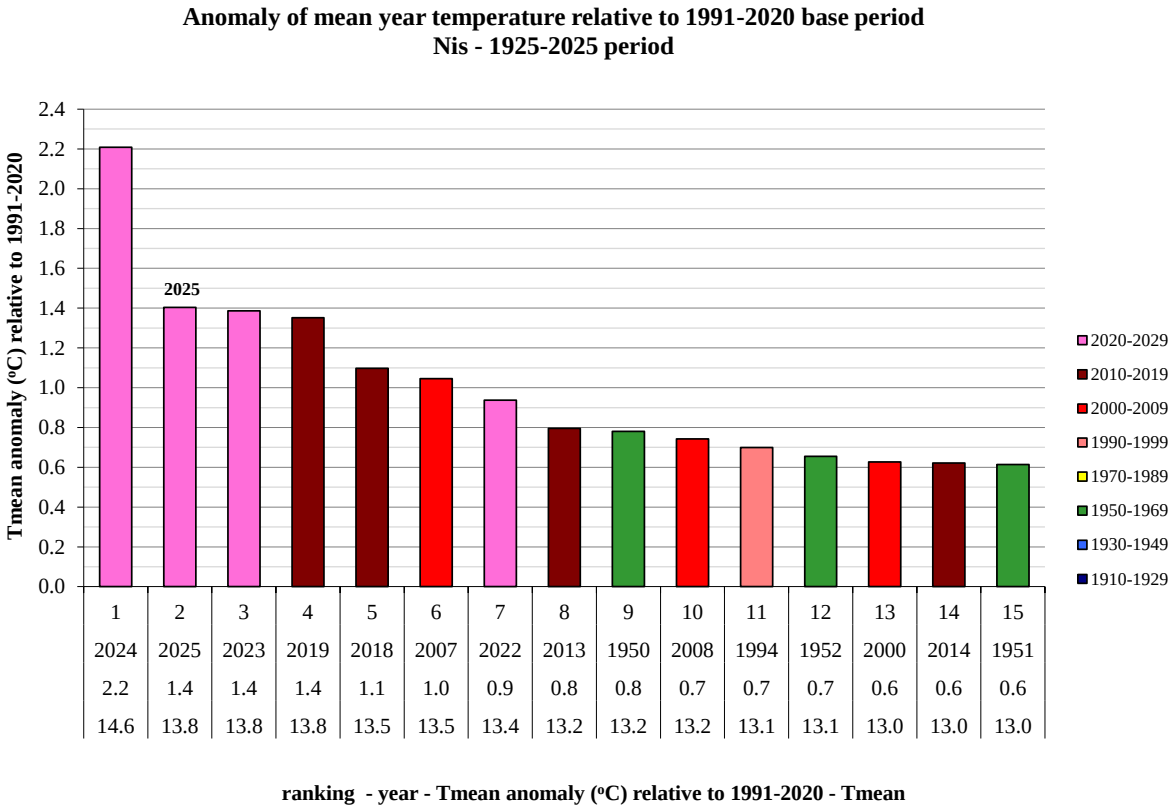
2.7	1.7	1.6	1.5	1.3	1.3	1.0	0.9	0.9	0.8	0.8	0.8	0.8	0.7	0.6
15.9	14.9	14.7	14.7	14.5	14.5	14.2	14.1	14.0	14.0	14.0	14.0	13.9	13.9	13.8

Figure 1. Rank of the warmest years at Belgrade



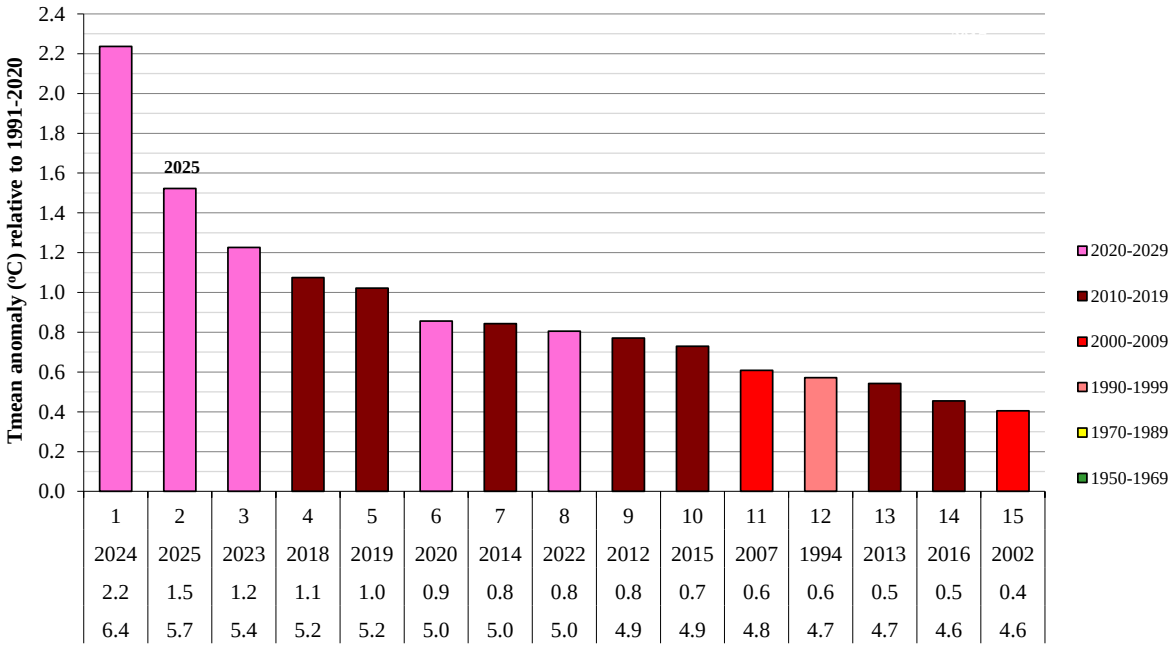
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2024	2023	2025	2019	2022	2018	2014	2000	2015	2020	2008	2002	2017	2012	2021
2.9	2.0	1.5	1.4	1.4	1.3	1.0	1.0	0.9	0.8	0.8	0.7	0.6	0.6	0.6
14.8	13.9	13.5	13.4	13.4	13.2	13.0	13.0	12.8	12.8	12.7	12.6	12.6	12.5	12.5

Figure 2. Rank of the warmest years at Novi Sad



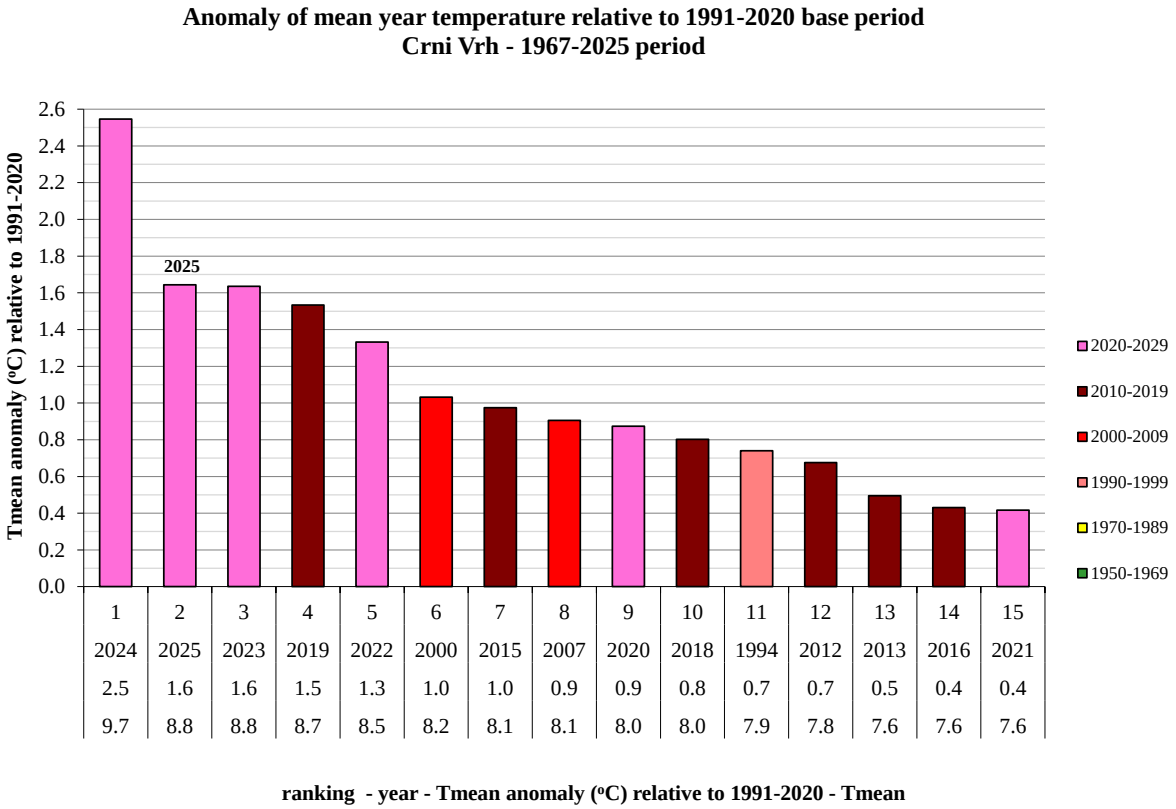
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2024	2025	2023	2019	2018	2007	2022	2013	1950	2008	1994	1952	2000	2014	1951
2.2	1.4	1.4	1.4	1.1	1.0	0.9	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.6
14.6	13.8	13.8	13.8	13.5	13.5	13.4	13.2	13.2	13.2	13.1	13.1	13.0	13.0	13.0

Figure 3. Rank of the warmest years at Nis



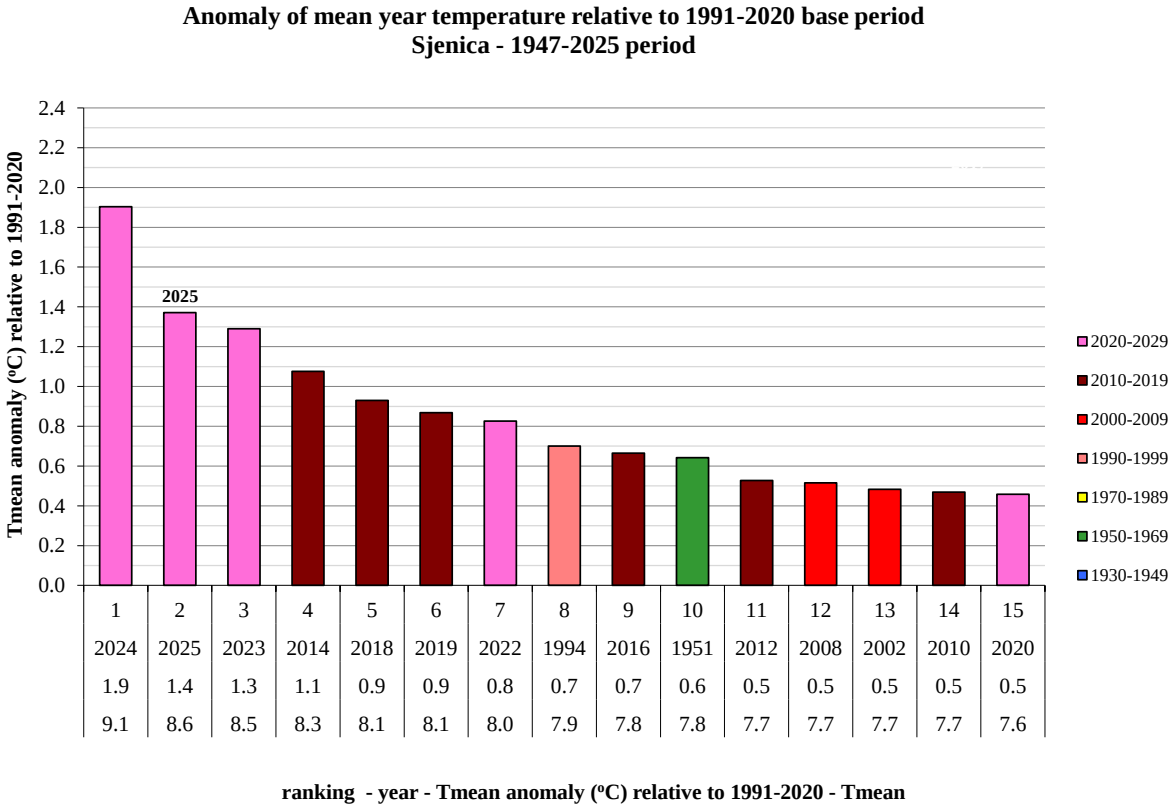
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2024	2025	2023	2018	2019	2020	2014	2022	2012	2015	2007	1994	2013	2016	2002
2.2	1.5	1.2	1.1	1.0	0.9	0.8	0.8	0.8	0.7	0.6	0.6	0.5	0.5	0.4
6.4	5.7	5.4	5.2	5.2	5.0	5.0	5.0	4.9	4.9	4.8	4.7	4.7	4.6	4.6

Figure 4. Rank of the warmest years at Kopaonik



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2024	2025	2023	2019	2022	2000	2015	2007	2020	2018	1994	2012	2013	2016	2021
2.5	1.6	1.6	1.5	1.3	1.0	1.0	0.9	0.9	0.8	0.7	0.7	0.5	0.4	0.4
9.7	8.8	8.8	8.7	8.5	8.2	8.1	8.1	8.0	8.0	7.9	7.8	7.6	7.6	7.6

Figure 5. Rank of the warmest years at Crni Vrh



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2024	2025	2023	2014	2018	2019	2022	1994	2016	1951	2012	2008	2002	2010	2020
1.9	1.4	1.3	1.1	0.9	0.9	0.8	0.7	0.7	0.6	0.5	0.5	0.5	0.5	0.5
9.1	8.6	8.5	8.3	8.1	8.1	8.0	7.9	7.8	7.8	7.7	7.7	7.7	7.7	7.6

Figure 6. Rank of the warmest years at Sjenica

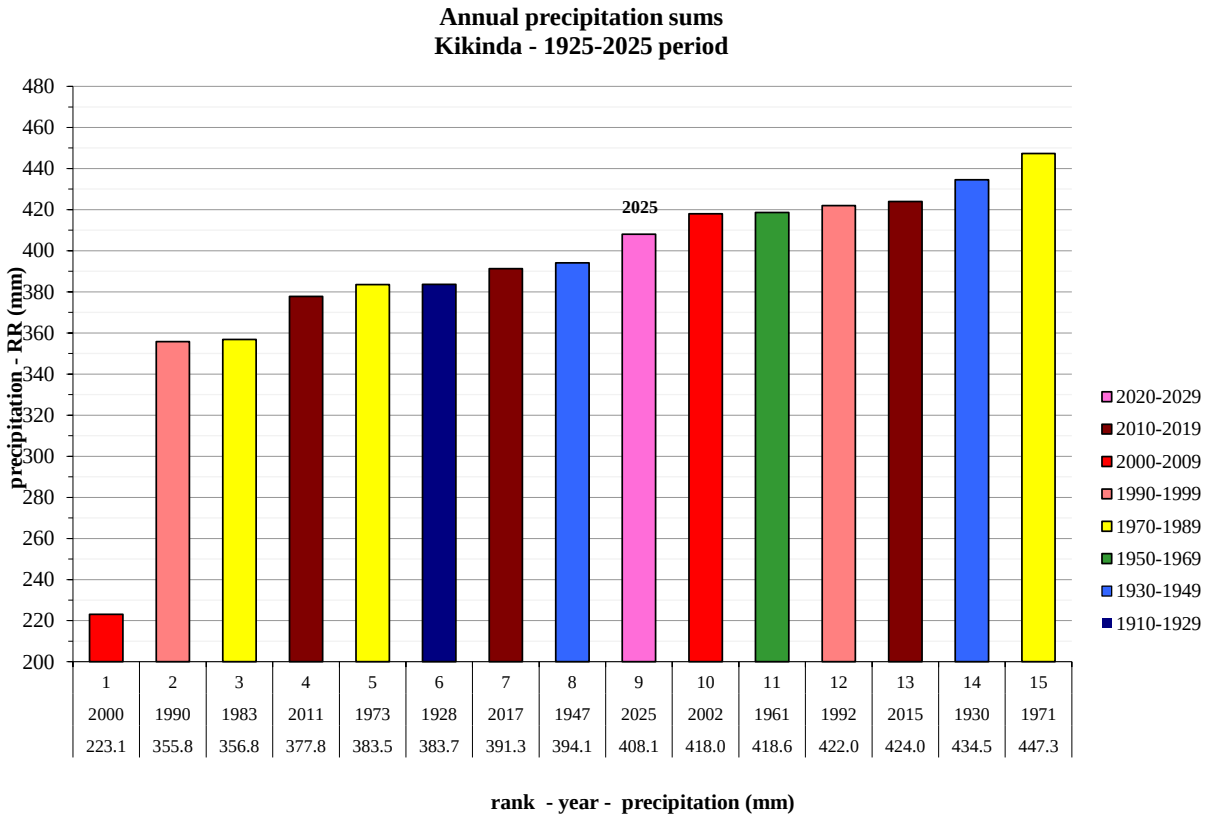


Figure 7. Rank of the driest years at Kikinda

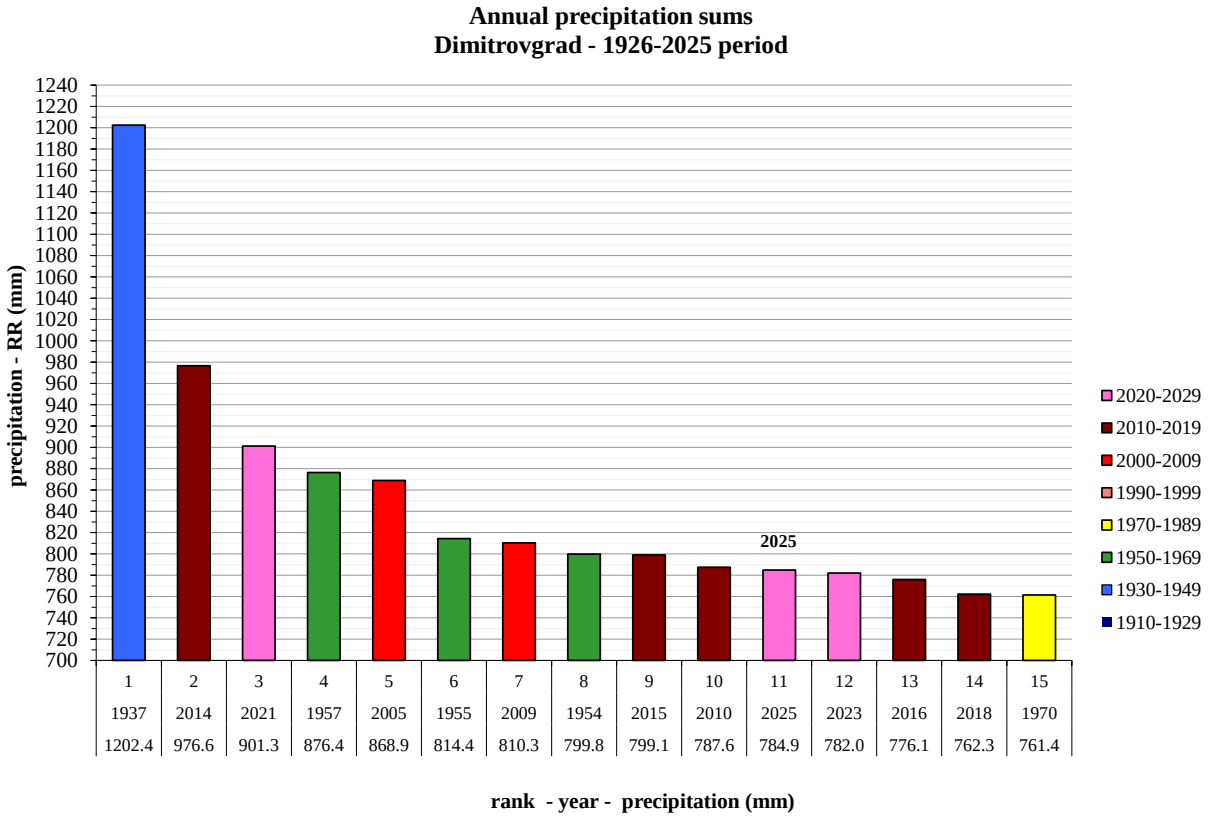


Figure 8. Rank of the wettest years at Dimitrovgrad

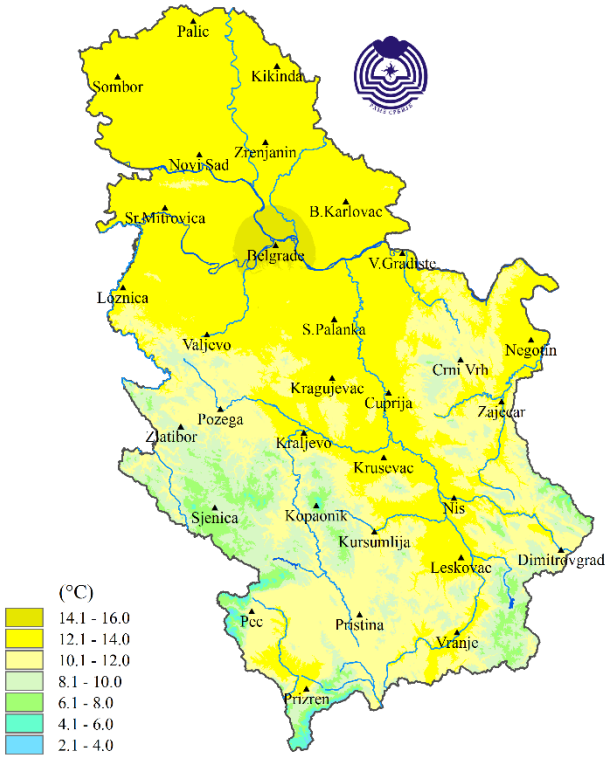


Figure 9. Spatial distribution of mean annual air temperature expressed in (°C)

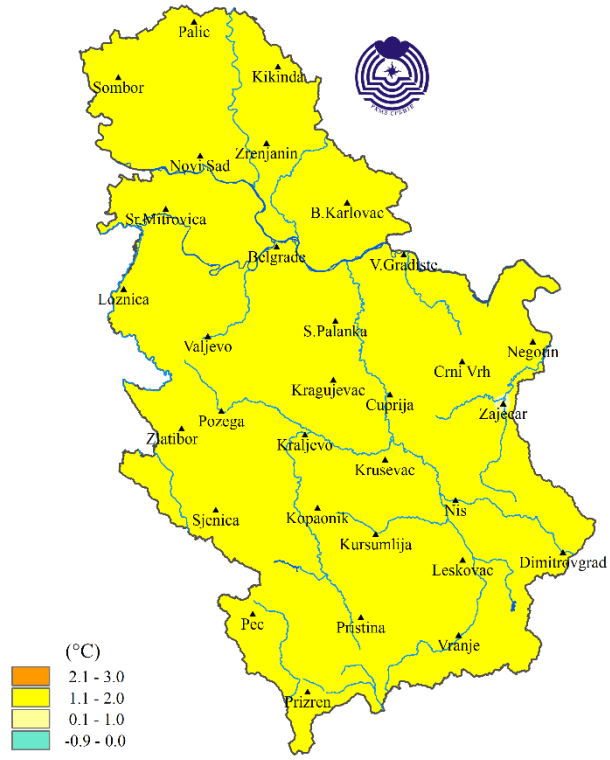


Figure 10. Spatial distribution of mean annual air temperature anomaly expressed in (°C)

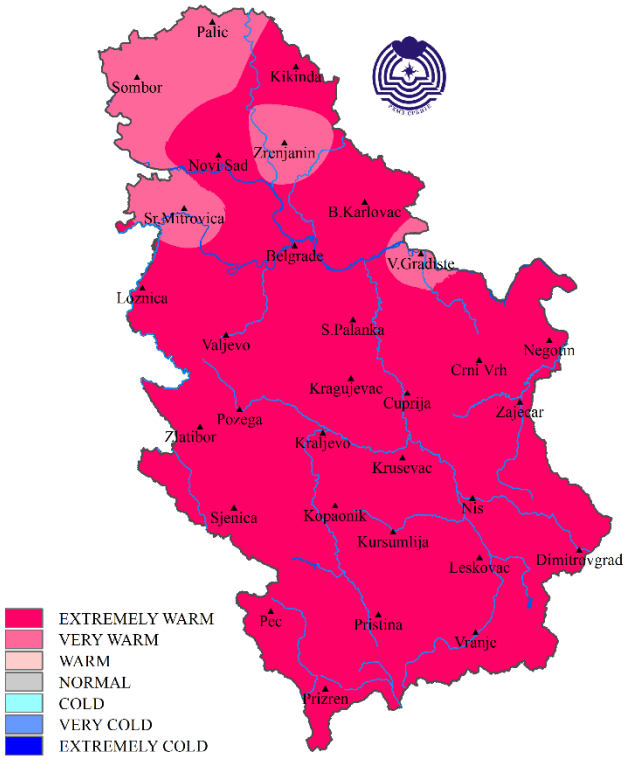


Figure 11. Spatial distribution of mean annual air temperature based on percentile method

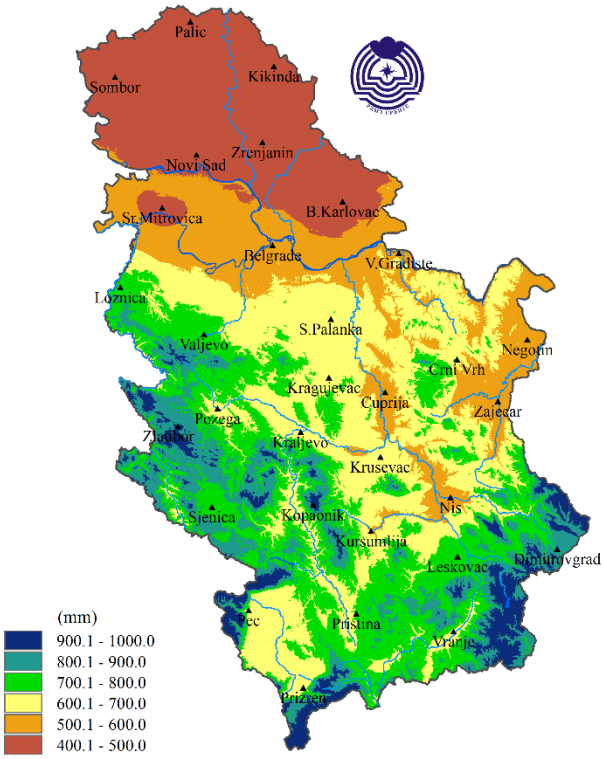


Figure 12. Spatial distribution of annual precipitation totals expressed in mm

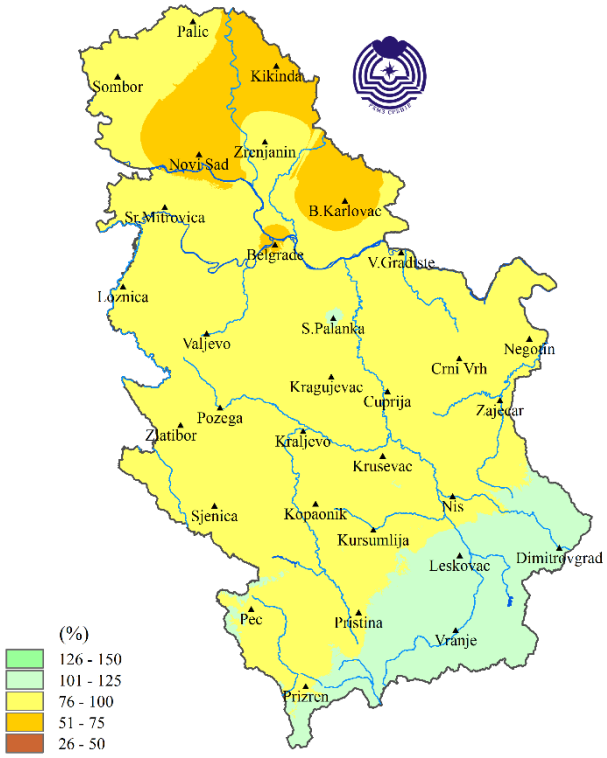


Figure 13. Spatial distribution of annual precipitation totals expressed in percentages of normal for the 1991-2020 base period

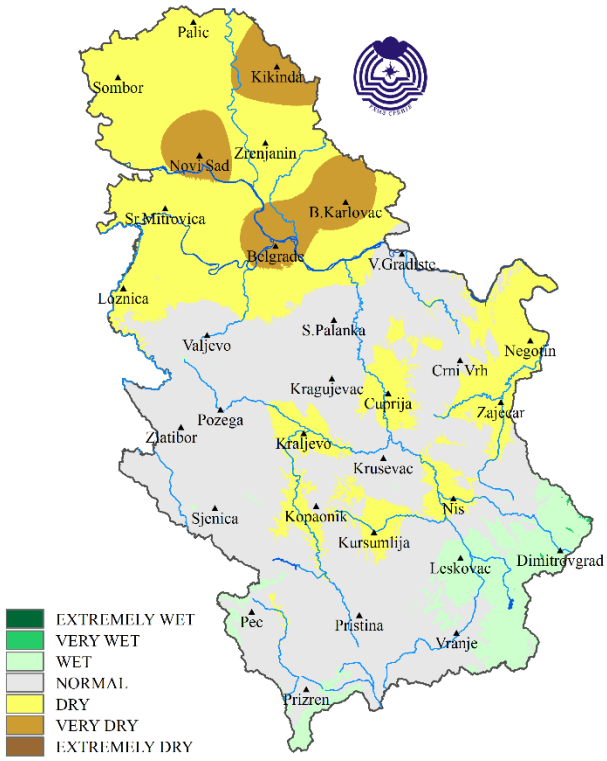


Figure 14. Spatial distribution on annual precipitation totals based on percentile method

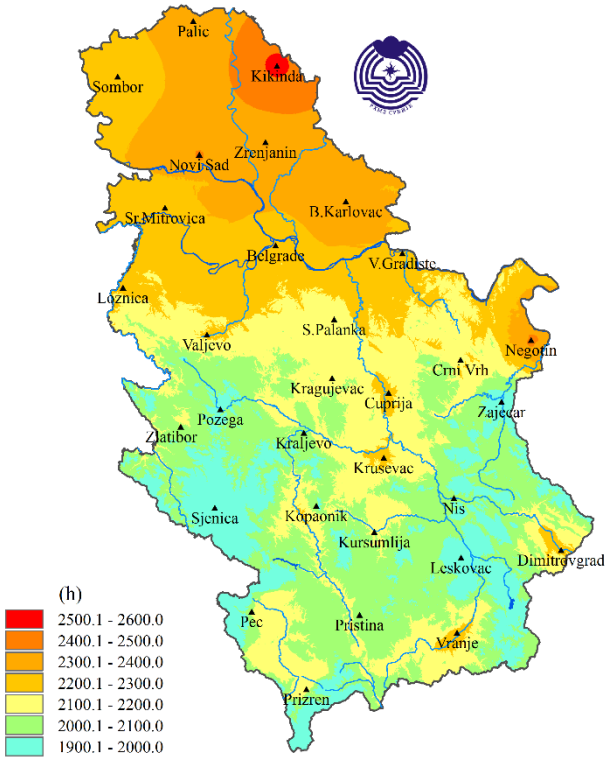


Figure 15. Insolation expressed in hours

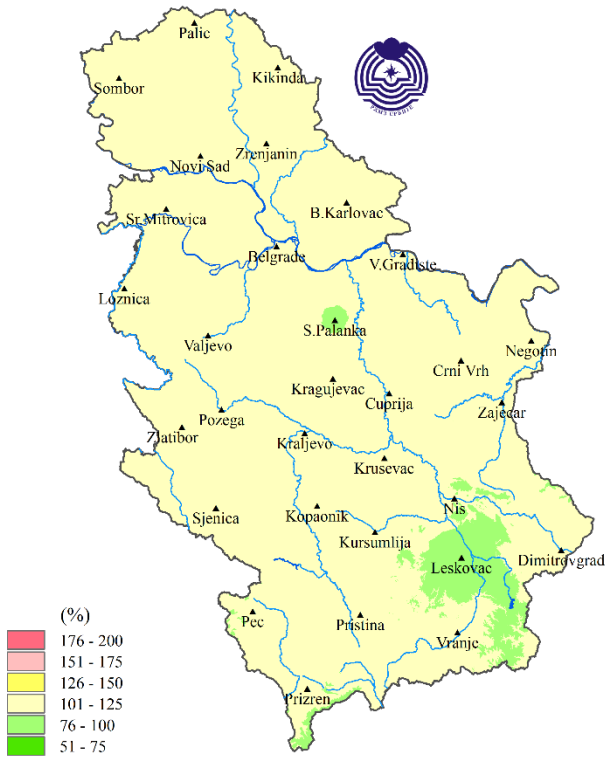


Figure 16. Insolation expressed in percentages of normal for the 1991-2020 base period