Republic Hydrometeorlogical Service of Serbia
Kneza Viseslava 66
11000 Belgrade
Republic of Serbia

ANNUAL BULLETIN FOR SERBIA THE YEAR OF 2022

Belgrade, 18 January 2022

Division for Climate Monitoring and Climate Forecast
Department of National Center for Climate Change, Climate Model Development and Disaster Risk Assessment
web: http://www.hidmet.gov.rs
mail: office@hidmet.gov.rs

CONTENT

- ***The year of 2022 – 2nd warmest for Serbia since 1951, for Belgrade 2nd warmest since 1888***
- ***Warmest on record for Sombor and Negotin, 2nd warmest for Novi Sad, Zrenjanin, Kikinda, Valjevo, Palic, Crni Vrh and Zlatibor***
- ***Annual precipitation sums within the average in most of Serbia, below the average in the western and parts of eastern Serbia; 2nd driest year Valjevo, 4th driest for Pozega***
- ***3rd warmest summer for Serbia since 1951; warmest summer for Novi Sad, Kikinda, Banatski Karlovac and Palic; 2nd warmest summer for Zrenjanin, Veliko Gradiste and Pozega; 3rd warmest summer for Belgrade, Sombor, Cuprija, Crni Vrh; 2nd warmest summer for Serbia based on the minimum air temperature; record-breaking number of summer and tropical days in Kikinda, Banatski Karlovac and Veliko Gradiste, record-breaking number of tropical days in Zrenjanin, and record-breaking number of tropical nights in Sombor***
- ***Driest March on record for Novi Sad, 3rd driest for Nis and Vranje***
- ***3rd warmest May for Kopaonik, 4th warmest May for Belgrade, 2nd driest May for Sremska Mitrovica***
- ***4th warmest June for Serbia; 2nd warmest June for Sombor, Novi Sad, Zrenjanin, Kikinda, Banatski Karlovac and Palic; 3rd warmest for Loznica, Sremska Mitrovica, Belgrade and Sjenica; record-breaking number of summer days in June was registered in Zrenjanin, Kikinda, Banatski Karlovac, Belgrade, Veliko Gradiste and Krusevac; driest June for Zrenjanin, 3rd driest for Banatski Karlovac***
- ***5th warmest July for Serbia; 2nd warmest July for Sombor, 3rd warmest Novi Sad, Banatski Karlovac and Palic; mean maximum air temperature for July was exceeded in Novi Sad and Banatski Karlovac; record-breaking number of summer days in Zrenjanin, record-breaking number of tropical days and tropical nights in Sombor; driest July for Zrenjanin, 2nd driest for Pozega***
- ***3rd wettest August for Nis, 4th wettest for Cuprija***
- ***5th wettest September for Serbia; 2nd wettest for Novi Sad, Zrenjanin and Veliko Gradiste; 3rd wettest Banatski Karlovac, Loznica and Palic; 4th wettest for Sremska Mitrovica and Leskovac***
- ***2nd warmest October for Negotin; 2nd driest October for Pozega and Crni Crh***
- ***5th warmest November for Negotin; daily maximum air temperature for November was exceeded in Zajecar, Vranje and Crni Vrh; record-breaking number of summer days in Kraljevo and Kursumlija; 2nd wettest November for Kopaonik; daily maximum precipitation sum for November exceeded at Crni Vrh***
- ***2nd warmest and averagely rainy December for Serbia; warmest December for Zrenjanin, Banatski Karlovac, Sremska Mitrovica, Belgrade, Sjenica and Kopaonik; maximum daily air temperature for December exceeded in Kragujevac; daily precipitation maximum for December exceeded in Sombor and Veliko Gradiste***

Air temperature

The year of 2022, with the mean air temperature of 12.1 ºC, ranks as the 2nd warmest (Figure 1) in the period from 1951 up to now, and 2nd warmest for Belgrade with the mean air temperature of 14.5 ºC since the record-keeping began (1888). The year 2022 was the warmest on record for Negotin and Sombor since the record-keeping began. Mean annual air temperature ranged from 10.9 ºC in Pozega to 14.5 ºC in Belgrade, and on the mountains from 4.9 ºC at Kopaonik to 9.2 ºC at Zlatibor (Appendix, Figure 2).
Departure of the mean annual air temperature relative to the 1991-2020 base period ranged from 0.6 ºC in Leskovac to 1.4 ºC in Negotin and Novi Sad (Appendix, Figure 3). Based on the percentile distribution[1], 2022 was in the categories of very warm and extremely warm in most of Serbia (Appendix, Figure 4).

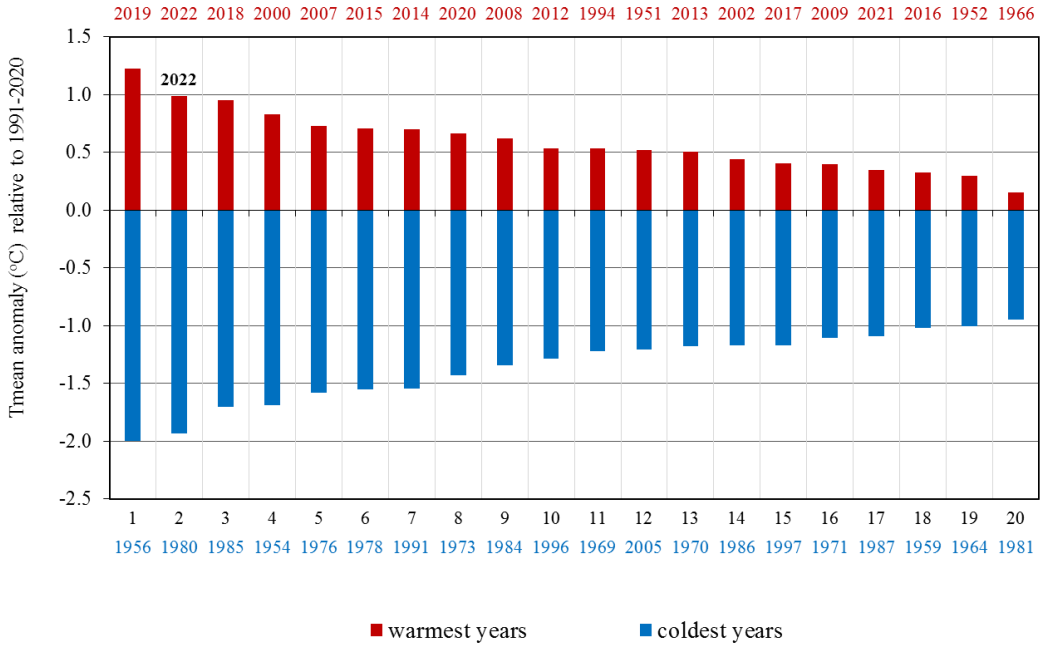

Figure 1. Rank of the warmest and coldest years for Serbia for the 1951-2022 period

In 2022, the highest daily air temperature of 40.6 ºC was measured in Smederevska Palanka on July 23. The highest number of tropical days[2], total of 72 days, was recorded in Veliko Gradiste and Leskovac. Most of Serbia recorded 40 to 70 tropical days which is five to 26 tropical days above the average for the 1991-2020 base period. Belgrade recorded 65 tropical days which is 25 days above the average for the 1991-2020 base period.

[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

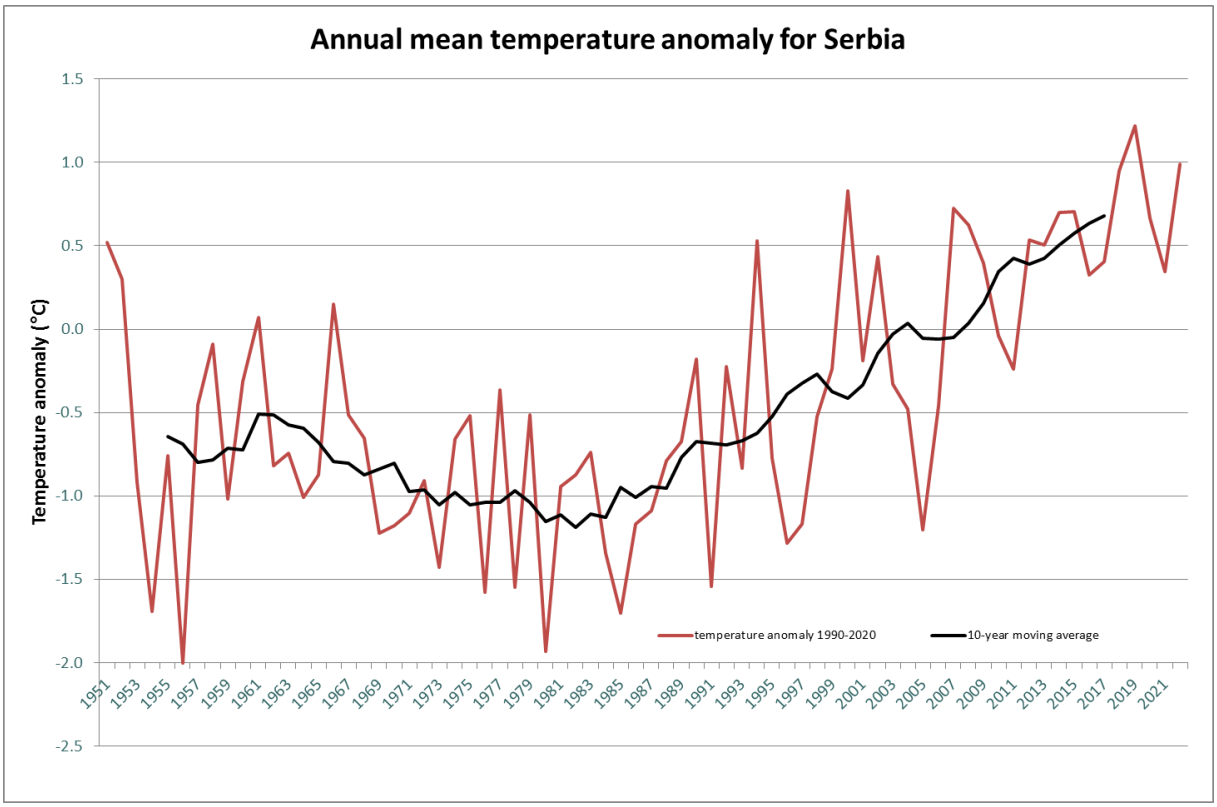

Figure 2. Trend of the mean annual air temperature anomaly for Serbia, 1951-2022 period

Belgrade observed 40 tropical nights[3], 14 nights above the average. Number of tropical nights was the following: Negotin – 20, Zrenjanin – 14, Palic – 13, Novi Sad – 12, Sombor – 11, elsewhere less than nine tropical nights were observed. Tropical nights were not recorded in the southeast and parts of western and central Serbia.

The lowest daily air temperature of -24.8 ºC was measured in Sjenica on January 25. On the mountains, number of days with severe frost ranged from six days at Crni Vrh to 30 days at Kopaonik. Pozega observed 10 days, elsewhere up to five days with severe frost were recorded. Belgrade as well as parts of western and eastern Serbia didn't record any days with severe frost.

In 2022, number of ice days[4] ranged from one in Sombor and Zajecar to eight days in Pozega, three days in Belgrade, in the upland from 28 days in Sjenica to 66 days at Kopaonik. Number of ice days was six to 16 days below the average.

Number of frost days[5] ranged from 31 days in Belgrade to 98 days in Pozega, and on the mountains from 101 days at Zlatibor to 151 days in Sjenica. Number of frost days was three to 21 days below the average in most of Serbia.

Distribution of mean annual minimum and mean annual maximum air temperatures and their accompanying terciles in Serbia for the period 1991-2022 are shown in Figure 3.

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

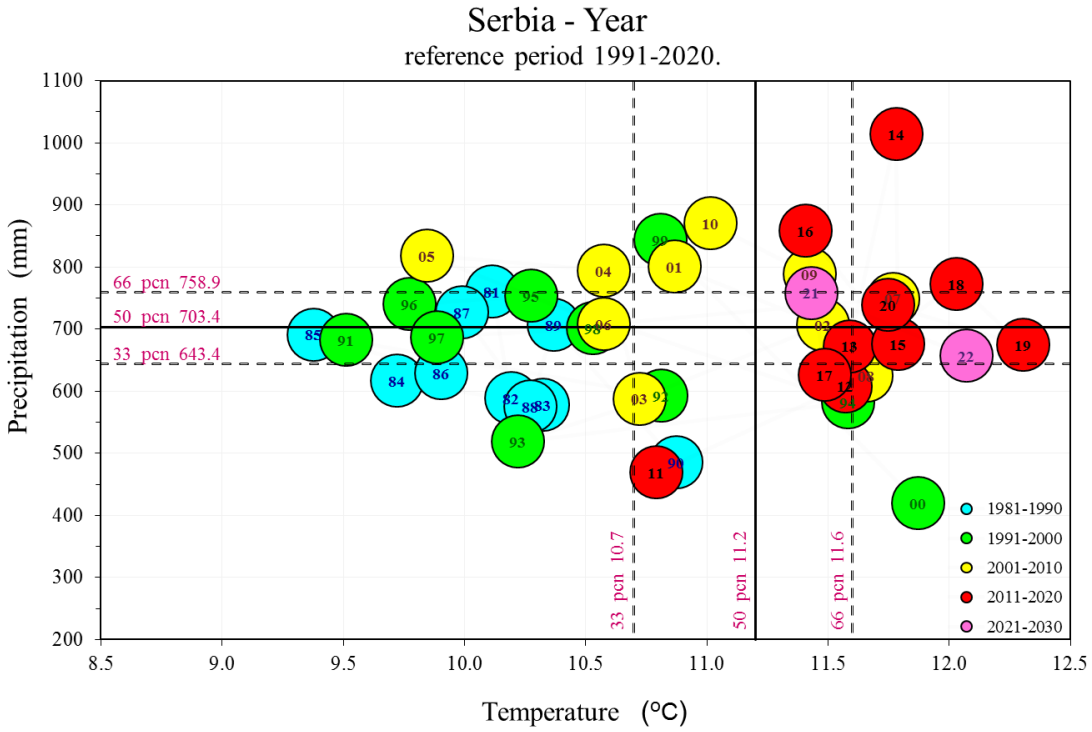

Figure 3. Mean minimum and mean maximum air temperature and their accompanying terciles for Serbia for the 1981-2022 period

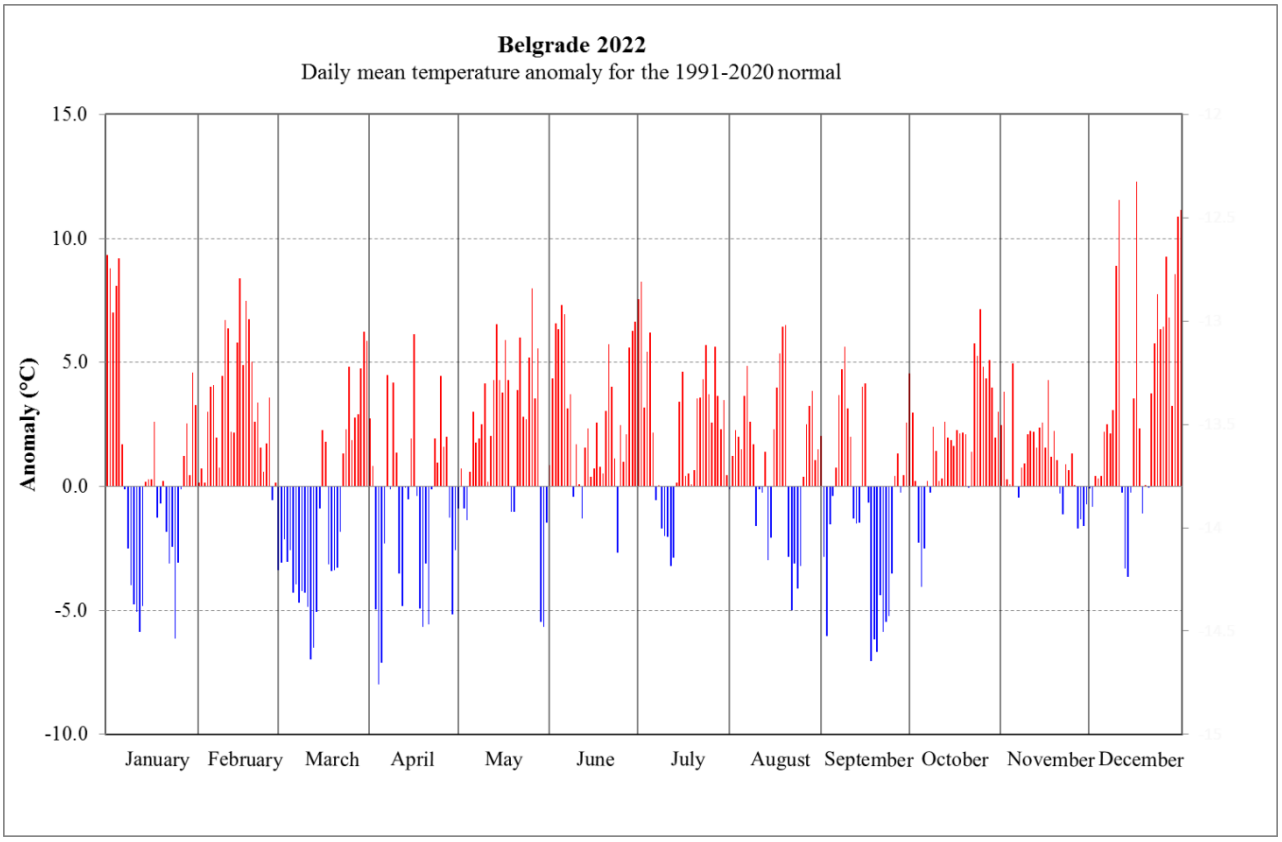

Figure 4. Daily mean air temperature anomaly from the normal 1991-2020 for Belgrade

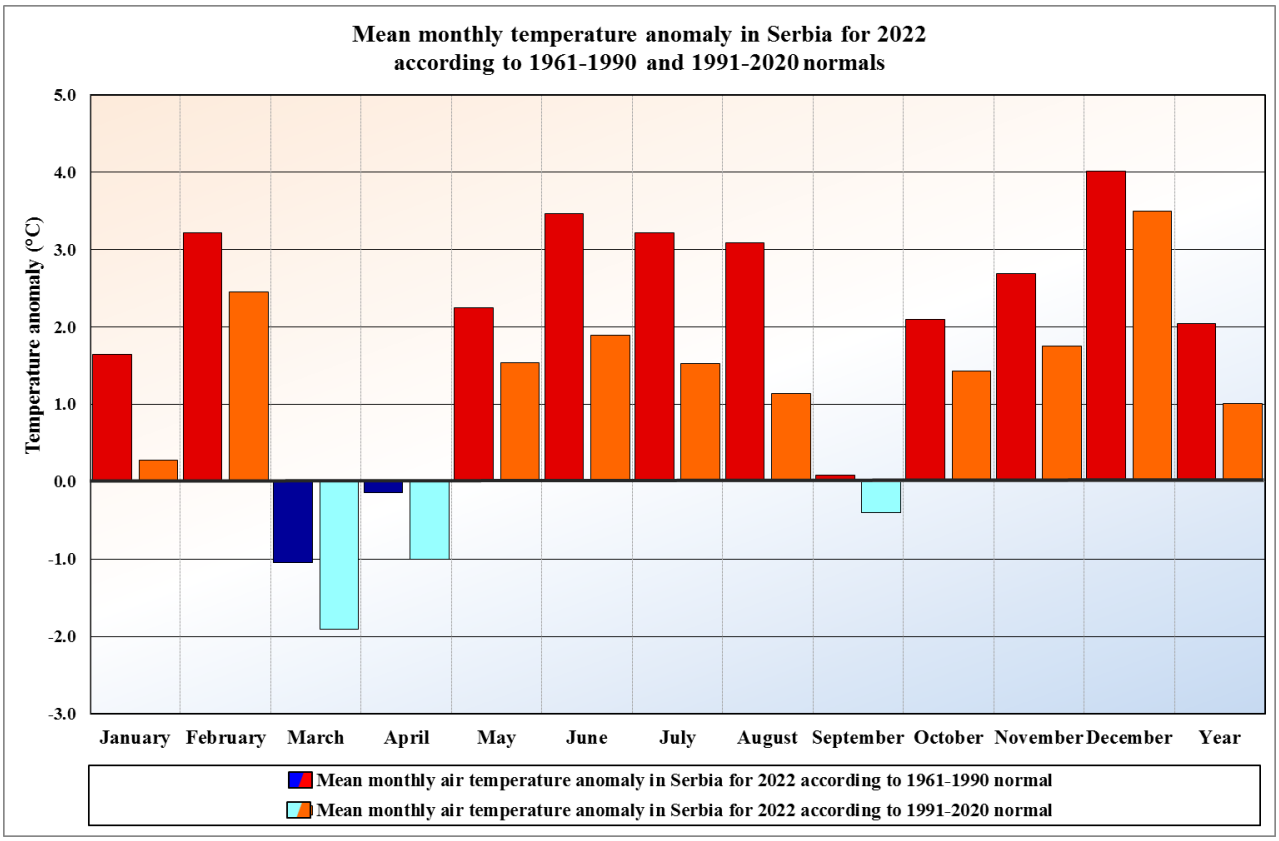

Figure 5. Mean monthly air temperature anomaly in Serbia for 2022 according to 1991-2022 and 1991-2020 normals

Precipitation

Annual precipitation sums were within the average in most of Serbia and below the average in the western and parts of eastern Serbia. It was rainy in Dimitrovgrad, Kopaonik and Smederevska Palanka, very dry in Pozega and extremely dry in Valjevo (Appendix, Figure 7). Annual precipitation sums ranged from 469.7 mm in Sombor to 918.4 mm in Loznica, and on the mountains from 694.6 mm at Crni Vrh to 1186.1 mm at Kopaonik (Appendix, Figure 5). Percentage of the precipitation sums relative to the normal 1991-2020 ranged from 44% in Leskovac to 88% in Smederevska Palanka (Appendix, Figure 6). The year 2022 ranks as **the 2nd driest** for Valjevo (Appendix, Figure 3) and **the 4th driest** for Pozega in the last 97 years. The highest daily precipitation sum of 76.4 mm was recorded in Loznica on June 11.

Number of rainy days, with the precipitation sums of 0.1 mm and above, ranged from 112 days on Palic to 143 days in Valjevo, and in the upland from 155 days at Crni Vrh to 176 days at Kopaonik.

Number of days with precipitation sums of 20 mm and above ranged from two days in Sombor to 12 days in Loznica, and on the mountains from three days at Zlatibor to nine days at Kopaonik. Kopaonik recorded three days with precipitation sums of 50 mm and above, two days were registered in Loznica and Smederevska Palanka, one day in Novi Sad, Kragujevac, Veliko Gradiste, Sjenica and Zlatibor.

Number of days with snow cover ranged from four days in Sombor to 44 days in Pozega, and on the mountains from 77 days in Sjenica to 140 days at Kopaonik. The highest snow depth of

152 cm was measured at Kopaonik on March 11 and 12. In the lowland, the highest snow depth of 35 cm was recorded in Kragujevac on January 11.

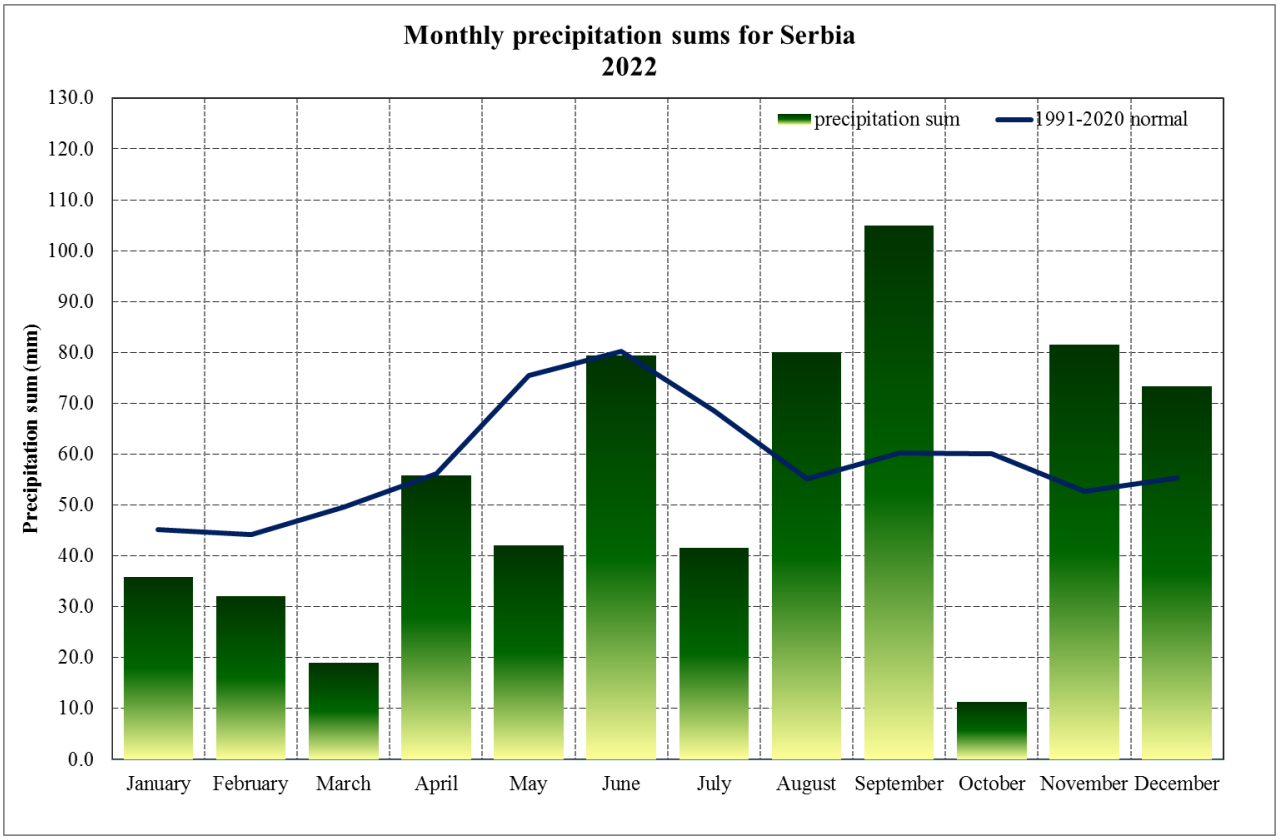

Figure 6. Monthly precipitation sums for Serbia (mean monthly sum per station)

Heat waves and cold waves

During winter 2021/22, cold wave[6] was recorded in the period from January 10 to 15 in Smederevska Palanka and January 22 to 27 in Pozega. One heat wave[7] was registered in most of Serbia in the period from December 31 to January 6.

In March, two cold waves were observed, lasting from March 11 to 15, and from March 18 to 26 in the parts of northern, central and southeastern Serbia. In April, cold waves were observed in Pozega (11-15) and Crni Vrh (17-21). Heat waves were recorded during May, the first one in the north (12-17) and the second (24-28) in parts of central, southern, western and southeastern Serbia.

Four heat waves were recorded across Serbia during summer 2022. The first heat wave was observed in southern, eastern and central parts of Serbia lasting from June 1 to 6. The second heat wave was recorded in the north and parts of eastern Serbia in the period from June 27 to July 5. Third heat wave was recorded in the period from July 20 to 27 in central and

[6] Cold wave, based on the percentile method, is defined as the period during which the minimum daily air temperature falls under the very cold and extremely cold category for five consecutive days and longer

[7] Heat wave, based on the percentile method, is defined as the period during which the maximum daily air temperature falls under the very warm and extremely warm category for five consecutive days and longer

southwestern parts of Serbia. The fourth heat wave was recorded only in Novi Sad, lasting from August 15 to 19.

In autumn, one heat wave was recorded at the end of October and beginning of November in Negotin, Vranje, Sjenica and Kopaonik, whilst at the same period in Zajecar two heat waves were observed. Cold wave was recorded at the end of second and beginning of third decade of September in Belgrade, Zlatibor, Crni Vrh and Kopaonik.

Monthly and seasonal overview of the climate characteristics and record-breaking values of temperature and precipitation in 2022

January – Averagely cold and wet January. 4th warmest January for Negotin since 1927. 4th wettest January for Sombor since 1931. Maximum January insolation hours were exceeded in Sremska Mitrovica and Pozega. The minimum number of cloudy days in January was exceeded in Loznica.

February – Warm February in most of Serbia. Averagely wet February, dry in northernmost areas, eastern and southern Serbia. 8th warmest February on Palic since 1945. 10th driest February for Negotin since 1941. Minimum number of cloudy days was exceed on Palic.

March – 18th coldest March for Serbia, 4th coldest for Kopaonik. Two heat waves were observed. 8th driest March for Serbia in the period from 1951 to 2022. March was driest on record for Novi Sad, 3rd driest for Nis and Vranje since the record-keeping began.

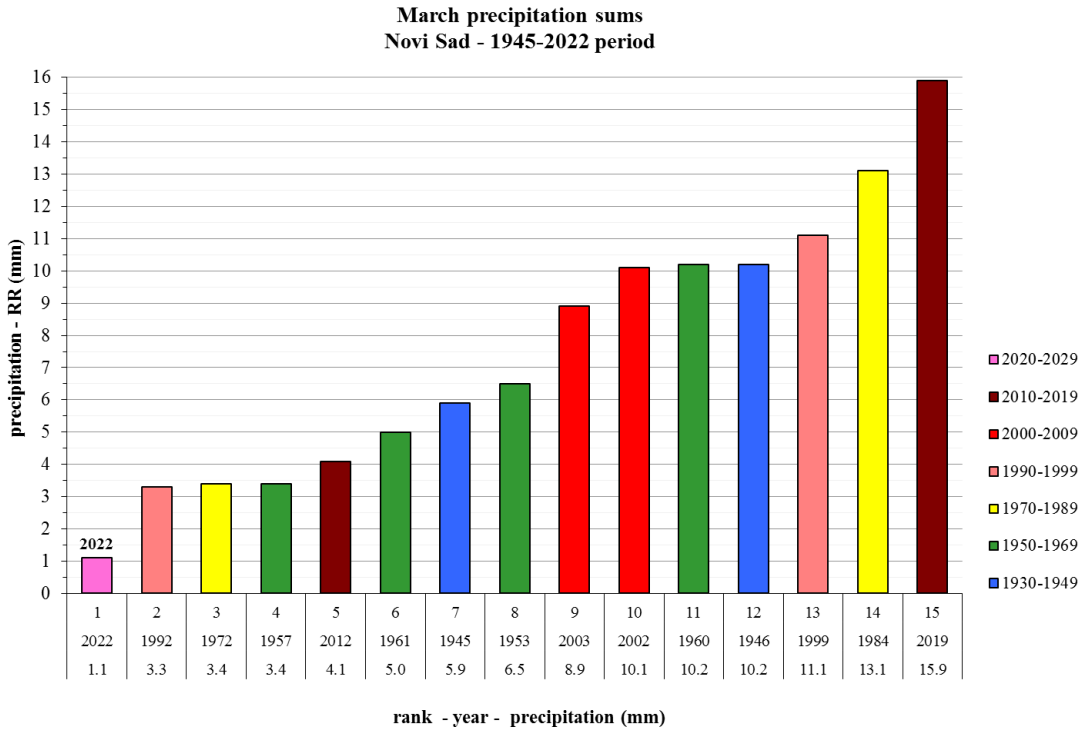

Figure 7. The lowest March precipitation in Novi Sad

April – Cold and averagely wet April. The maximum number of fog days was exceeded in Sjenica.

May – 7th warmest and 10th driest May for Serbia. March ranks as the 3rd warmest for Kopaonik and 4th warmest for Belgrade. 2nd driest May for Sremska Mitrovica. Two heat waves were observed across small areas of the country.

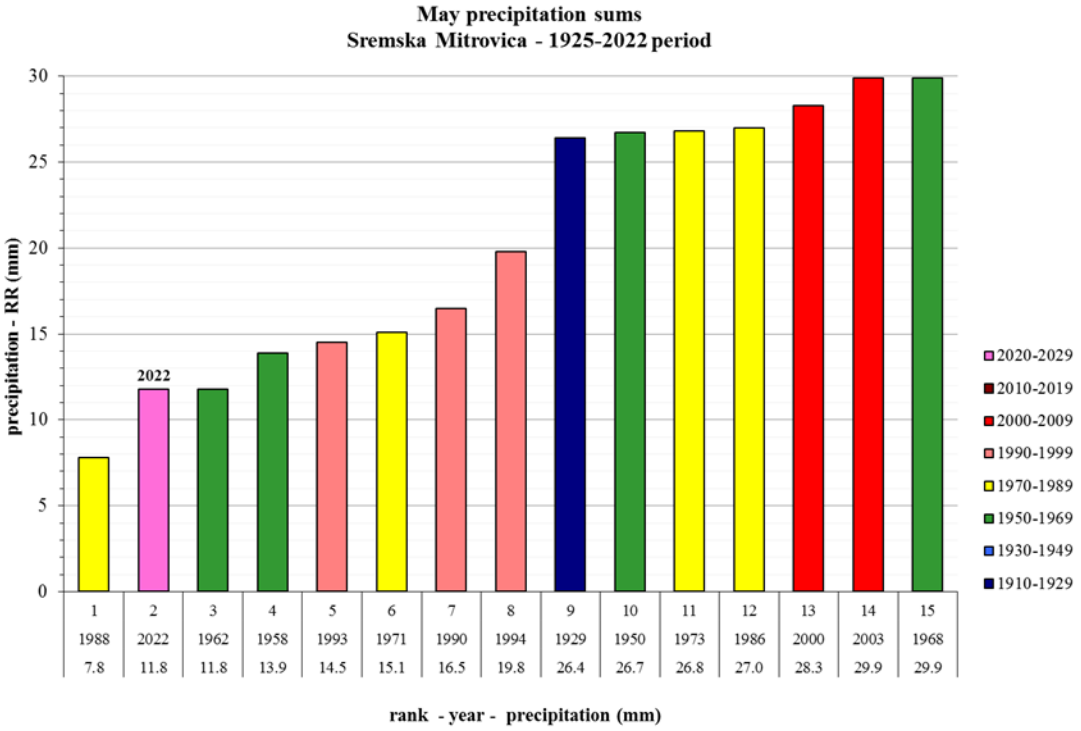

Figure 8. The lowest May precipitation in Sremska Mitrovica

June – 4th warmest June for Serbia. 2nd warmest June for Palic, Sombor, Novi Sad, Zrenjanin, Kikinda and Banatski Karlovac. 3rd warmest for Loznica, Sremska Mitrovica, Belgrade and Sjenica. Maximum number of summer days in June was exceeded in Zrenjanin, Kikinda, Banatski Karlovac, Belgrade, Veliko Gradiste and Krusevac. June was driest on record for Zrenjanin, 3rd driest for Banatski Karlovac, 7th wettest for Zajecar. Two heat waves were observed.

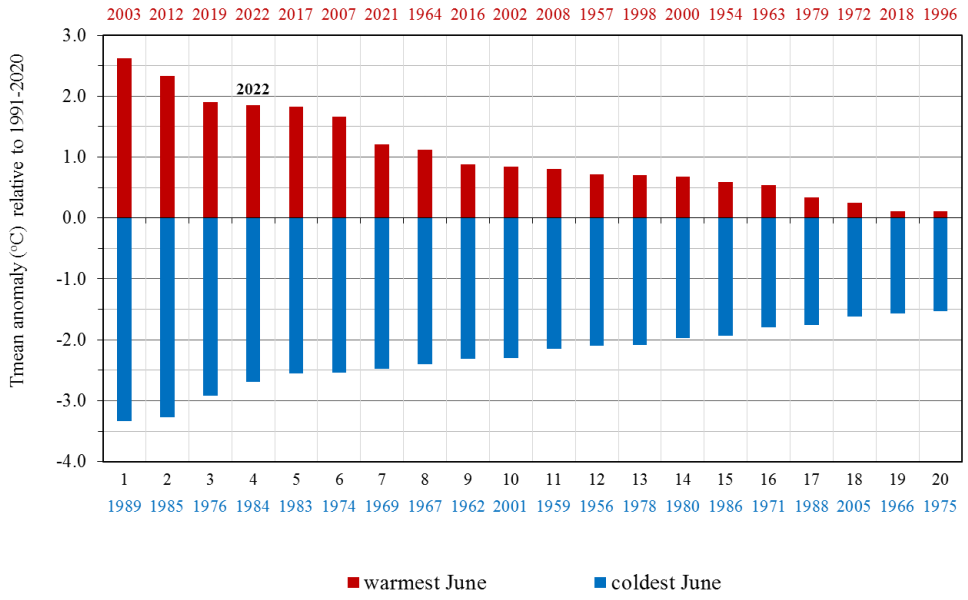

Figure 9. Rank of the warmest and coldest June in serbia for 1951-2022 period

July – 5th warmest July for Serbia. 2nd warmest July for Sombor, 3rd warmest for Palic, Novi Sad and Banatski Karlovac. Mean maximum air temperature in July was exceeded in Novi Sad and Banatski Karlovac. Maximum number of summer days was exceeded in Zrenjanin. Maximum number of tropical days and tropical nights was exceeded in Sombor. Two heat waves were registered. July was driest for Zrenjanin, 2nd driest for Pozega.

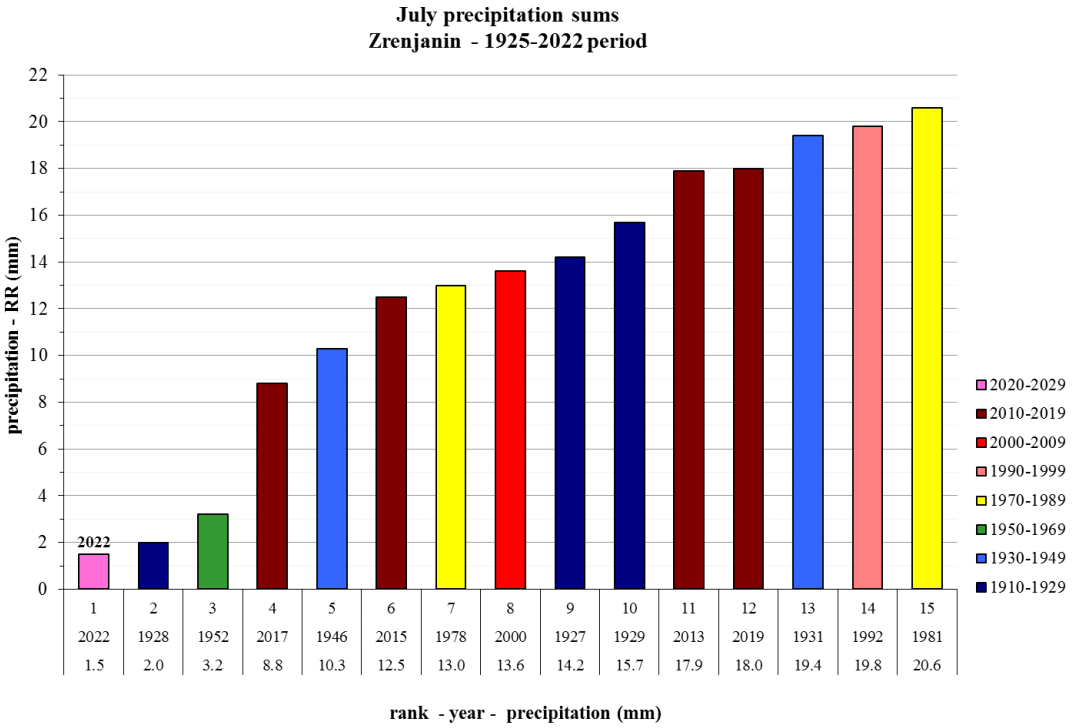

Figure 10. The lowest June precipitation for Zrenjan

August – Warm August in northern and eastern Serbia. Rainy August in most of the country. 3rd wettest August for Nis, 4th wettest for Cuprija since the record-keeping began. Dry August for Pozega. Novi Sad observed record-breaking precipitation sums.

September – 5th wettest and averagely warm September for Serbia. 2nd wettest for Novi Sad, Zrenjanin and Veliko Gradiste; 3rd wettest for Palic, Banatski Karlovac and Loznica; 4th wettest for Sremska Mitrovica and Leskovac. One cold wave was registered in Belgrade, Crni Vrh, Zlatibor and Kopaonik.

October – 4th driest and 10th warmest October for Serbia. 2nd warmest October for Negotin. 2nd driest October for Pozega and Crni Vrh. Two heat waves were registered in Zajecar, one in Negotin, Vranje, Sjenica and Kopaonik. Minimum number of cloudy days as well as fog days was exceeded in Banatski Karlovac.

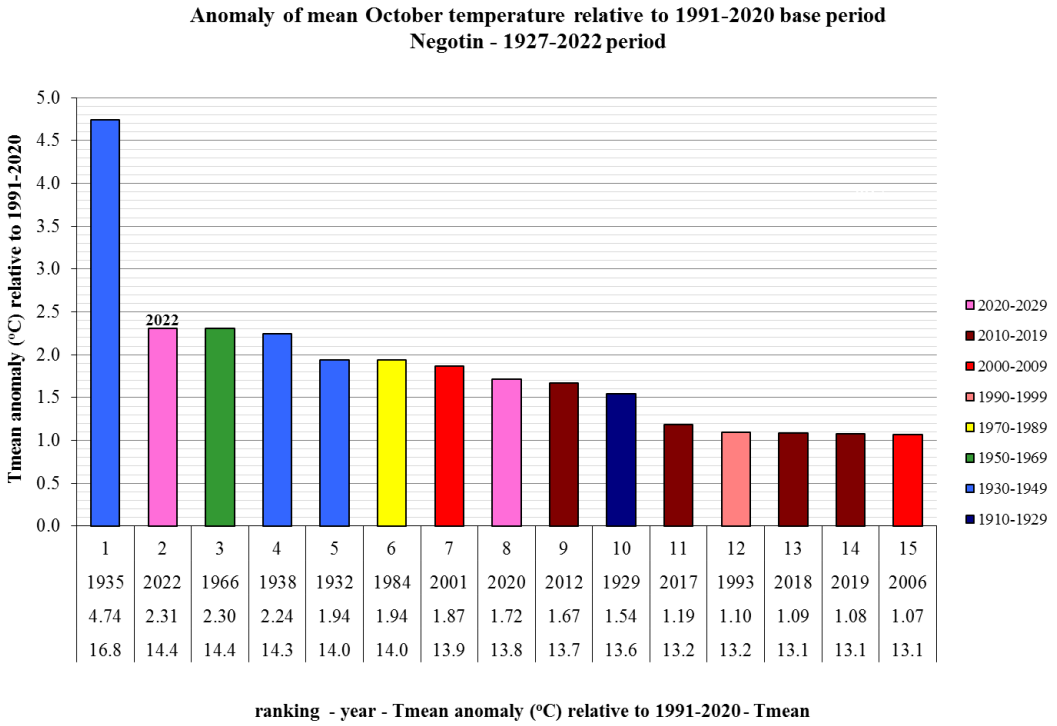

Figure 11. The warmest October in Negotin

November – 9th wettest and 20th warmest November for Serbia. 5th warmest November for Negotin. Record-breaking daily air temperature was observed in Zajecar, Vranje and Crni Vrh. Record-breaking number of summer days was exceeded in Kraljevo and Kursumlija. 2nd wettest November for Kopaonik. Record-breaking precipitation sums were observed at Crni Vrh. Cuprija registered record-breaking number of fog days.

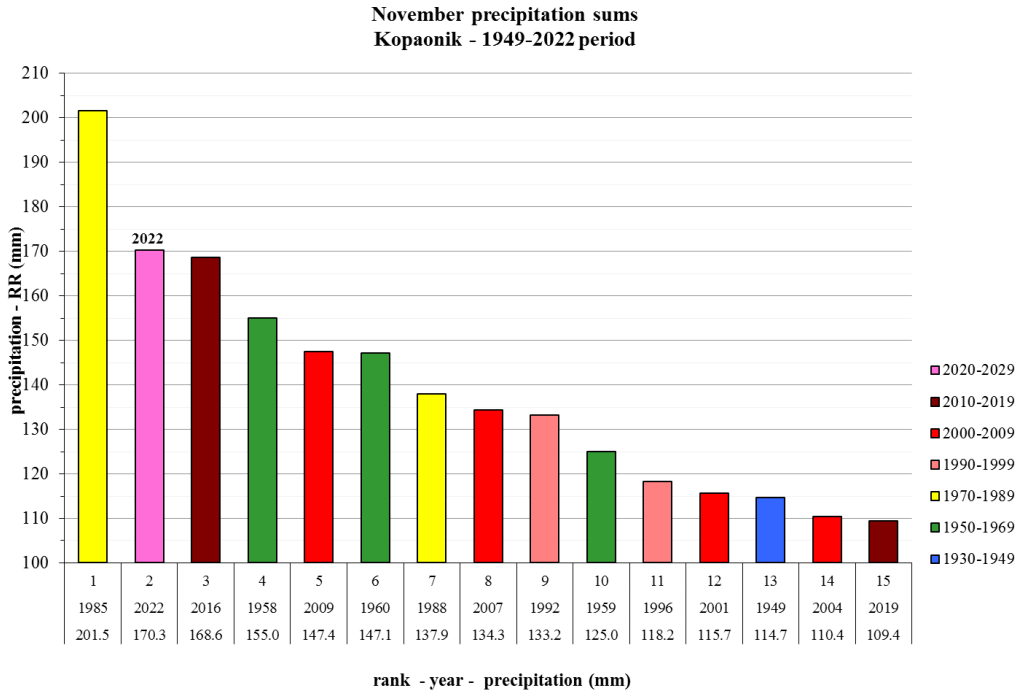

Figure 12. The highest November precipitation for Kopaonik

December – 2nd warmest and averagely rainy December for Serbia. Warmest on record for Zrenjanin, Banatski Karlovac, Sremska Mitrovica, Belgrade, Sjenica and Kopaonik. Record-breaking daily air temperature was observed in Kragujevac, Heat wave was recorded at the end of first decade in southern parts, and at the end of the month in most of the country. Record-breaking precipitation sums were observed in Sombor and Veliko Gradiste.

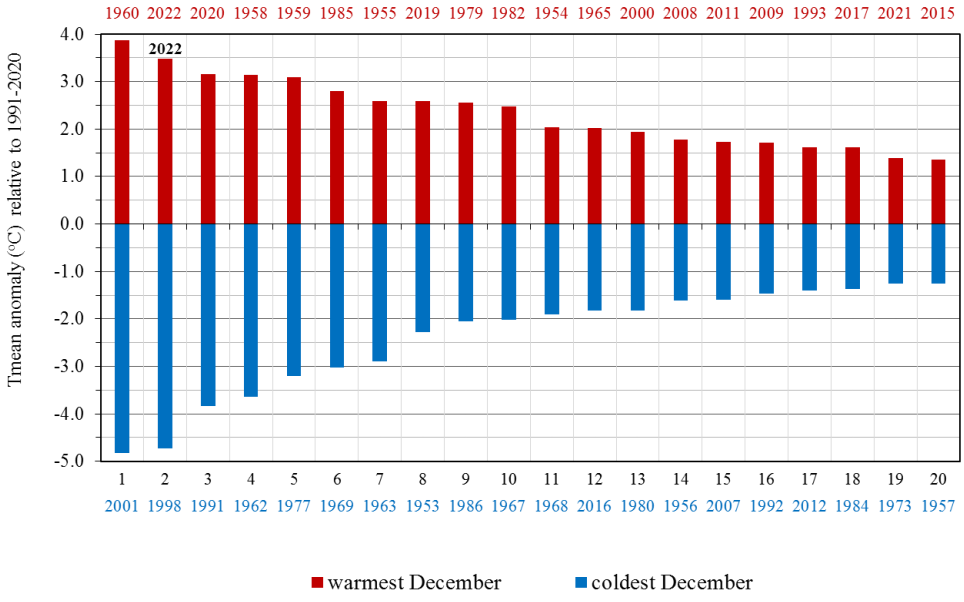

Figure 13. Rank of the warmest and coldest December in Serbia for the 1951-2022 period

Table 1. Record values of mean monthly air temperature

MMS	Tsr December 2022 (ºC)	Previous record Tsr (ºC)	Year of the previous record Tsr
ZRENJANIN	5.49	5.46	1960
B.KARLOVAC	5.4	5.1	2020
S.MITROVICA	5.2	5.1	1960
BELGRADE	7.0	6.6	1985
SJENICA	3.0	2.7	1950
KOPAONIK	1.0	-0.2	2020

Winter 2021/2022 – 12th warmest winter for Serbia since 1951, 13th warmest for Belgrade since 1888, 3rd warmest for Negotin since 1928, 5th warmest for Zajecar since 1939. It ranks as 17th wettest for Serbia since 1951, and wettest on record for Kopaonik.

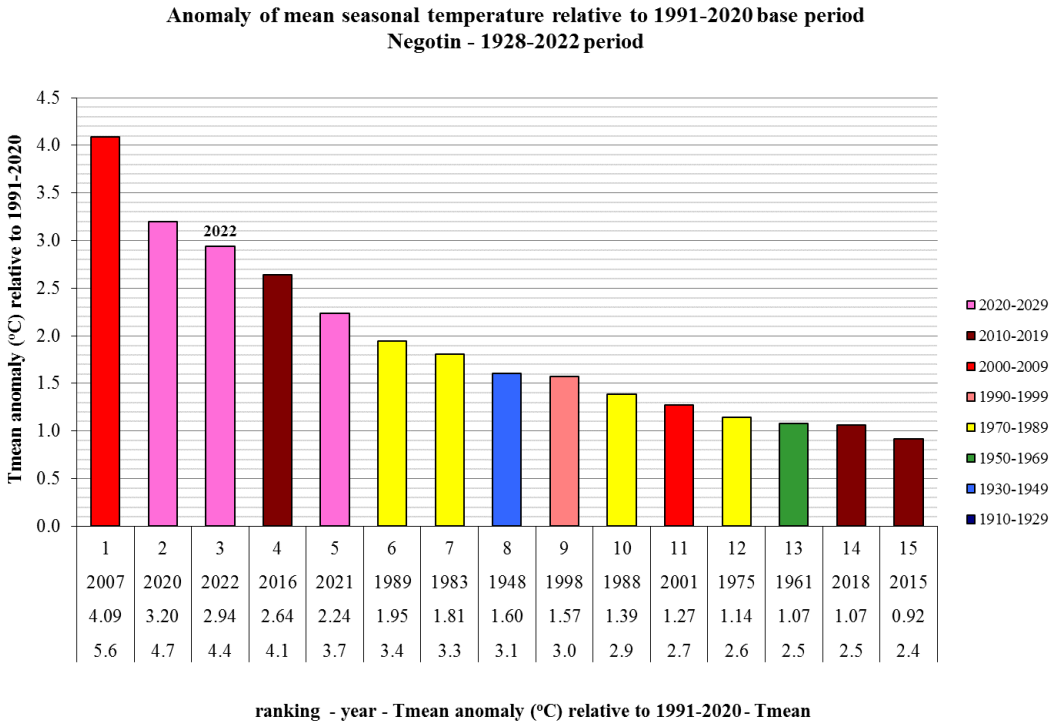

Figure 14. Rank of the warmest winters in Negotin

Spring 2022 – Dry spring with below-average air temperature. It ranks as 8th driest for Serbia since 1951, 4th driest for Krusevac and 5th driest for Zrenjanin since 1925. Record-breaking number of frost days in spring for Banatski Karlovac, Veliko Gradiste, Pozega, Leskovac and Zajecar. The maximum number of spring days with severe frost was reached in Zajecar. Negotin and Dimitrovgrad registered record-breaking spring insolation values. The maximum number of bright days in spring was exceeded in Loznica, Kragujevac, Veliko Gradiste, Pozega, Kraljeo, Nis, Sjenica and Zlatibor, and reached at Kopaonik. The minimum spring cloud cover values was exceeded in Belgrade, Kragujevac, Sjenica, Kraljevo, Nis and Crni Vrh.

Summer 2022 – 3rd warmest summer for Serbia since 1951. The warmest on record for Palic, Novi Sad, Kikinda and Banatski Karlovac. The 2nd warmest summer for Zrenjanin, Veliko Gradiste and Pozega. The 3rd warmest summer for Belgrade, Sombor, Cuprija and Crni Vrh. The 2nd warmest summer for Serbia based on the minimum air temperature. The maximum number of summer and tropical days was surpassed in Kikinda, Banatski Karlovac and Veliko Gradiste. Record-breaking number of tropical days and nights was surpassed in Zrenjanin and Sombor, respectively. Dry summer in parts of northern and western Serbia, rainy in parts of central and southeastern Serbia, within the average elsewhere, The 5th wettest summer in Dimitrovgrad, 7th driest for Sombor. Two days with precipitation sums of 50 mm and above are recorded in Loznica, one day in Novi Sad, Kragujevac, Smederevska Palanka and Zlatibor.

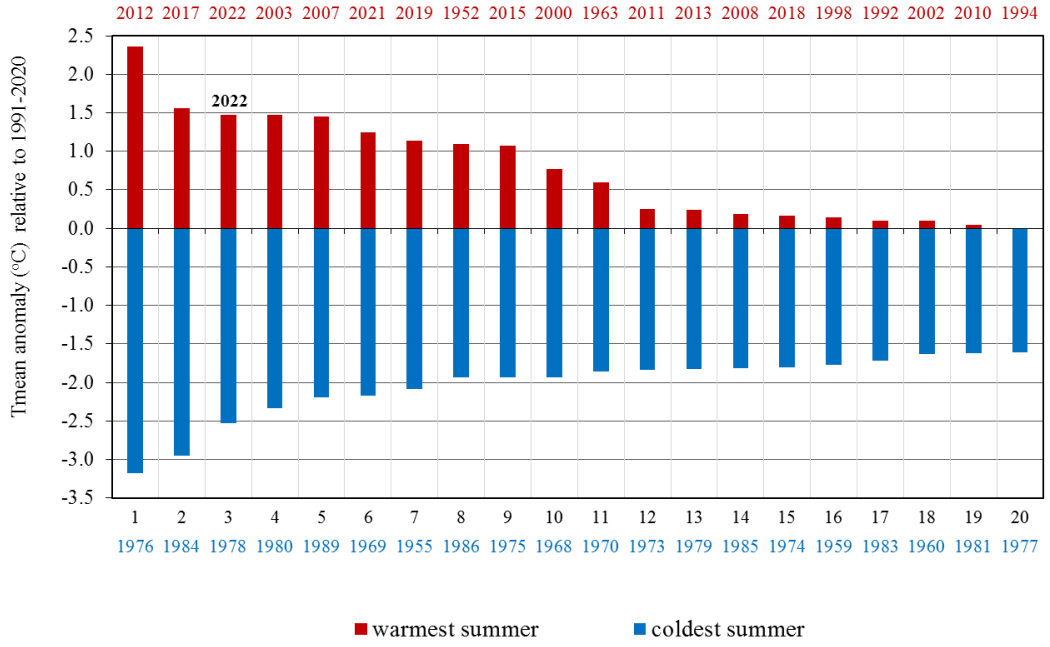

Figure 15. Rank of the warmest and coldest summer seasons in Serbia for the 1951-2022 period

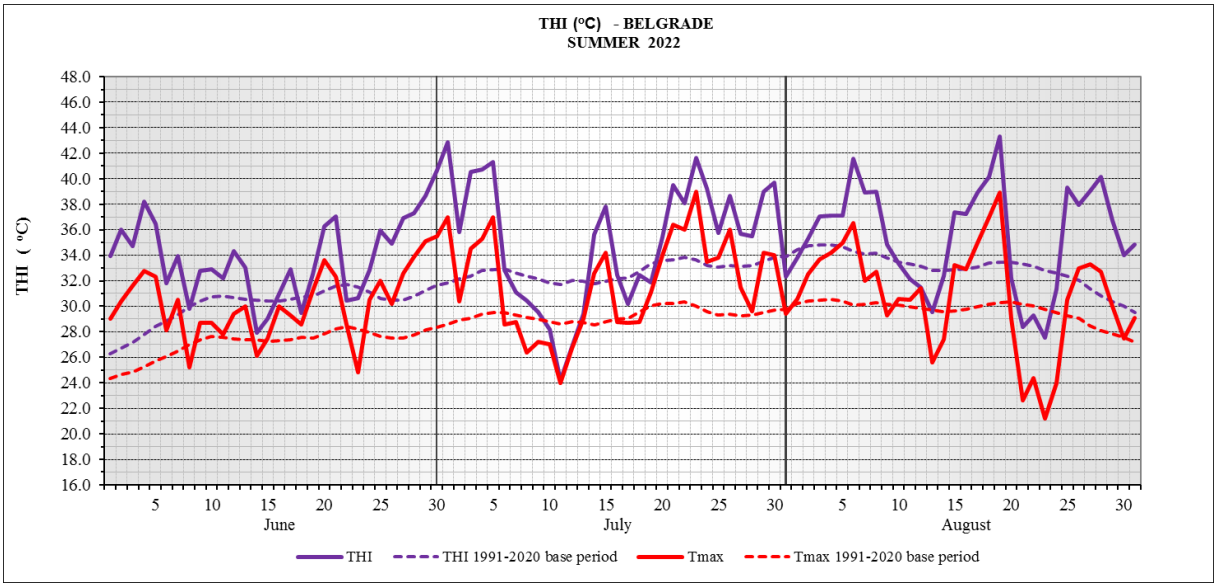

Figure 16. Temperature humidity index and daily maximum air temperature for Belgrade

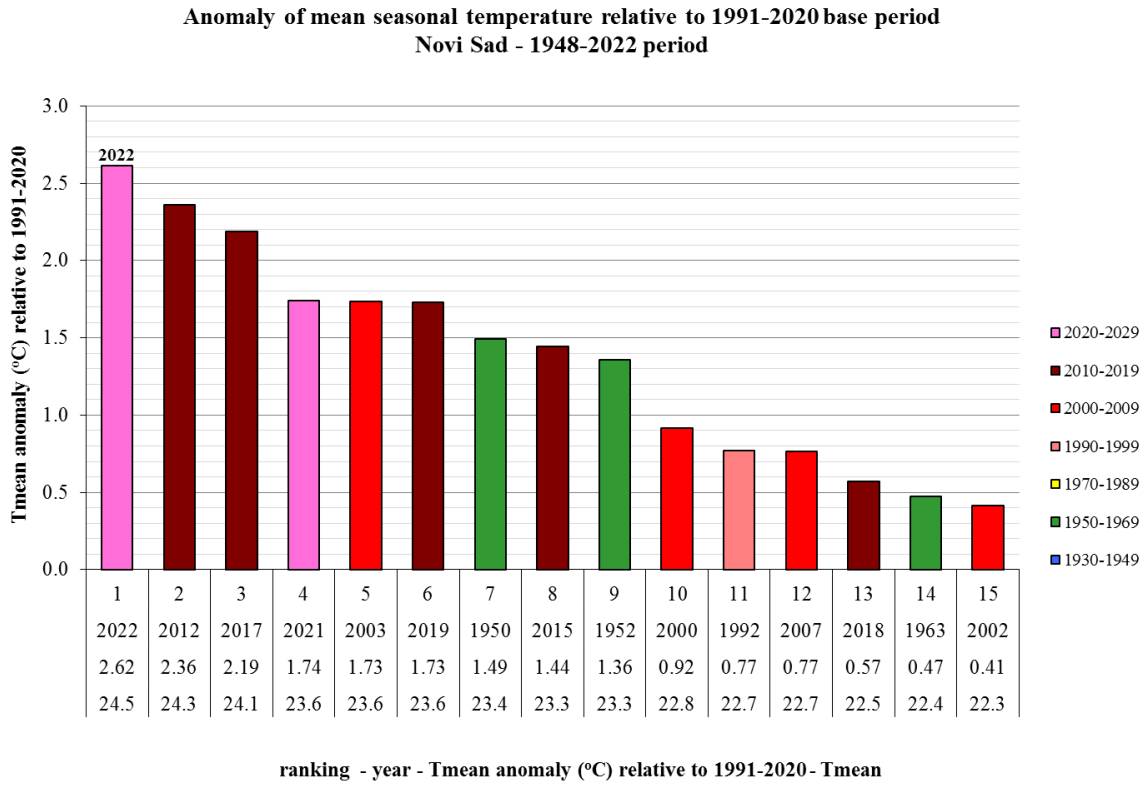

Figure 17. Rank of the warmest summer seasons for Novi Sad

Autumnm 2022 – Warm and rainy autumn in most of Serbia. The 9th warmest autumn for Serbia; 4th warmest for Crni Vrh, 5th warmest for Negotin, Sjenica and Zlatibor, 6th warmest for Valjevo. The 6th wettest autumn for Banatski Karlovac, 7th wettest for Novi Sad. The observed heat wave at the end of October and beginning of November was recorded in Negotin, Vranje, Sjenica and Kopaonik, 2 heat waves in Zajecar in the same period. Cold wave was recorded at the end of second and beginning of third decade of September in Belgrade, Zlatibor, Crni Vrh and Kopaonik. Novi Sad observed the record-breaking number of fog days.

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

Appendix

Table 1.

station/month	January	February	March	April	May	June	July	August	September	October	November	December	Year
PALIC	1.4	5.3	5.7	10.3	18.8	23.6	24.9	24.3	16.4	13.3	7.6	4.0	13.0
SOMBOR	1.7	5.2	5.4	10.6	18.9	23.3	24.5	23.9	16.4	13.1	7.6	4.4	12.9
NOVI SAD	1.5	5.7	5.5	10.9	19.1	23.9	25.1	24.6	16.8	13.7	7.9	5.5	13.4
ZRENJANIN	1.2	5.6	5.3	10.9	19.4	24.0	25.3	24.7	17.1	13.8	8.3	5.5	13.4
KIKINDA	0.9	5.3	5.6	10.9	19.1	23.7	24.8	24.5	16.9	13.8	8.0	4.8	13.2
B.KARLOVAC	0.6	5.0	5.2	10.8	18.7	23.1	24.5	24.0	17.1	13.3	8.5	5.4	13.0
LOZNICA	2.1	5.9	5.8	11.3	18.7	23.1	23.9	23.3	17.0	14.1	8.5	5.9	13.3
S.MITROVICA	1.2	5.1	5.0	10.8	18.9	22.9	23.5	23.0	16.2	13.5	8.0	5.2	12.8
VALJEVO	1.7	5.2	5.6	11.4	18.6	23.0	24.6	23.5	17.1	14.0	8.7	5.6	13.2
BELGRADE	2.4	6.8	7.1	12.3	20.3	24.8	25.8	25.0	18.0	15.5	9.3	7.0	14.5
KRAGUJEVAC	1.1	5.4	4.8	11.2	18.3	22.3	23.9	23.2	17.0	13.0	8.8	6.3	12.9
S.PALANKA	0.7	5.5	5.1	11.2	18.5	22.2	23.8	23.2	16.8	13.2	8.7	5.9	12.9
V.GRADISTE	0.1	4.6	4.7	11.0	18.2	22.6	24.4	23.8	16.7	13.1	8.9	4.7	12.7
CRNI VRH	-3.0	0.4	0.1	6.2	13.5	17.4	19.3	19.4	12.6	10.4	4.7	0.8	8.5
NEGOTIN	3.5	5.5	5.7	12.3	19.2	23.8	26.3	25.4	18.1	14.4	9.2	3.6	13.9
ZLATIBOR	-2.7	1.1	1.0	6.9	14.1	18.3	19.5	18.8	12.9	11.7	5.9	3.3	9.2
SJENICA	-4.3	-0.2	-0.6	6.3	12.8	17.2	17.8	17.5	12.3	9.0	5.3	3.0	8.0
POZEGA	-1.8	2.5	3.4	10.0	16.1	20.5	21.5	21.3	15.1	11.5	6.9	3.1	10.9
KRALJEVO	0.8	4.7	5.1	11.7	18.3	21.9	23.9	23.0	16.5	13.2	8.9	5.2	12.8
KOPAONIK	-5.8	-3.3	-4.6	1.9	9.6	13.2	14.6	14.1	8.5	7.6	2.4	1.0	4.9
KURSUMLIJA	0.2	4.4	3.4	10.4	16.3	20.3	21.6	21.5	15.5	11.8	8.4	5.1	11.6
KRUSEVAC	0.5	4.8	5.0	11.6	18.1	22.2	23.9	23.3	16.4	12.7	8.9	5.2	12.7
CUPRIJA	0.6	4.8	4.6	11.5	18.6	22.6	24.3	23.7	16.9	12.9	9.0	5.5	12.9
NIS	1.1	5.6	5.5	11.8	19.0	22.8	24.5	23.5	17.3	13.6	9.3	6.1	13.3
LESKOVAC	0.3	4.3	4.7	10.9	17.9	21.6	23.2	22.4	16.3	11.4	8.0	5.1	12.2
ZAJECAR	2.2	4.2	3.9	11.2	17.7	21.7	23.2	22.9	16.3	12.0	8.1	3.3	12.2
DIMITROVGRAD	-0.1	3.8	2.9	9.8	16.7	20.0	21.4	20.6	15.0	11.3	8.5	4.8	11.2
VRANJE	0.0	4.4	4.7	11.2	17.7	21.4	23.2	22.7	16.3	13.0	9.0	5.5	12.4

	extremely 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	11.1	12.1	3.2	33.5	35.3	68.6	14.2	73.5	126.3	13.2	42.9	62.5	496.4
SOMBOR	8.5	19	3.9	35.6	56.4	36.1	19.6	39	112.1	20.1	56.8	62.6	469.7
NOVI SAD	11.6	23.7	1.1	54.5	17.9	43.6	13.8	103.9	159	31	58.7	44.7	563.5
ZRENJANIN	16.6	28.5	4.9	45.1	25	19.9	1.5	87.4	132.9	28.4	58.3	46.4	494.9
KIKINDA	13.7	12.5	5.2	37.7	53.2	61.5	10	80.7	60.2	19.3	44.3	74.3	472.6
B.KARLOVAC	28.9	24.5	4.7	68.1	18.1	17.4	24.3	78.4	157.5	24.2	61.2	56.4	563.7
LOZNICA	26.5	55.6	25.6	57.6	31.2	171.5	68.2	122.9	167	5.4	83.6	103.3	918.4
S.MITROVICA	15	35.9	6.9	65.5	11.8	42.8	12.4	129	134.4	11.4	46.1	55.4	566.6
VALJEVO	34.5	56.8	25.3	42.7	32.8	94.2	24.6	42.6	64.2	7.9	58.2	68.4	552.2
BELGRADE	45.7	22.2	10.5	80.1	32.2	43.3	63.9	89.7	98	13.1	64.9	76.1	639.7
KRAGUJEVAC	58.5	35.9	29.9	35.6	77.6	103.3	66.3	66.2	56.9	7.3	72.5	60.2	670.2
S.PALANKA	55.1	33.1	13.9	75.4	62.4	120.9	79.3	99.3	108.6	9	61.2	89.5	807.7
V.GRADISTE	32.9	25.1	9.7	81.7	42.1	38.9	42.2	54.4	160.7	10.8	68.5	102.9	669.9
CRNI VRH	44	30.1	38	48.9	58.7	55.9	69.4	75.5	84.4	4.7	117.3	67.7	694.6
NEGOTIN	43.8	8	23.5	70	33.7	47.2	44.1	61.5	40.2	1.5	101	84.7	559.2
ZLATIBOR	72.9	90.2	45.4	66.9	61	126.7	26.3	44.7	94.3	11.9	94.5	116.1	850.9
SJENICA	37.4	37.9	34.1	55.7	75.9	76.4	63.4	52.1	96.3	11.3	120.8	96.4	757.7
POZEGA	47.2	43.6	23.6	38.2	45.9	92.9	8.5	30.6	59.8	1.8	59.2	84.6	535.9
KRALJEVO	49.8	45.6	35.4	41.7	32.1	127.5	38.1	124.9	99.3	5.7	78.6	64.6	743.3
KOPAONIK	90.4	79.9	53.7	105.4	78.6	133	106.6	118.3	156.5	7.1	170.3	86.3	1186.1
KURSUMLIJA	30.8	30.5	46.8	52.5	22.1	84.3	30.1	85.8	107.6	5.4	114.4	86.2	696.5
KRUSEVAC	55.6	27.1	22.2	40.1	28.9	93.3	53.3	102.2	119.8	3.6	95.6	50.8	692.5
CUPRIJA	45.1	36.2	9.9	37.8	50.6	83.3	18.7	101.6	99.5	3	98.7	70	654.4
NIS	22	15.6	5.2	58.1	23	43.5	58.6	119.2	67.9	3.5	87.1	64.8	568.5
LESKOVAC	25.6	18.4	8.6	67.9	47.1	82.2	35.9	83	122.3	5	103.4	74.8	674.2
ZAJECAR	31	9.9	17.4	38.3	36.2	124.7	44.1	24.2	54.3	2.1	88.2	64.2	534.6
DIMITROVGRAD	23	18.1	18	73	52.7	111.1	81.7	111.8	96.3	24.8	86	63.4	759.9
VRANJE	25.1	21.7	5	55	35.6	81.5	43.5	38.9	100.1	24.2	88.7	78.5	597.8

	extremely dry		very dry		dry		normal		wet		very wet		extremely wet

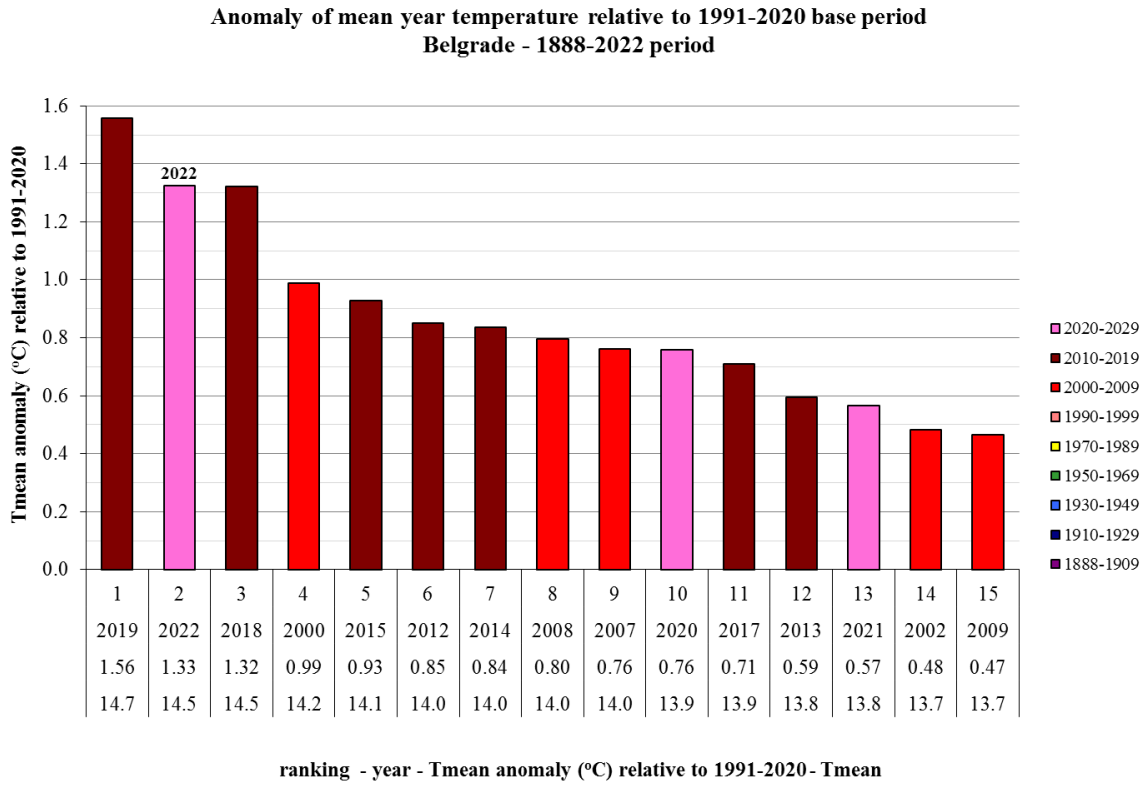

Figure 1. Rank of the warmest years in Belgrade

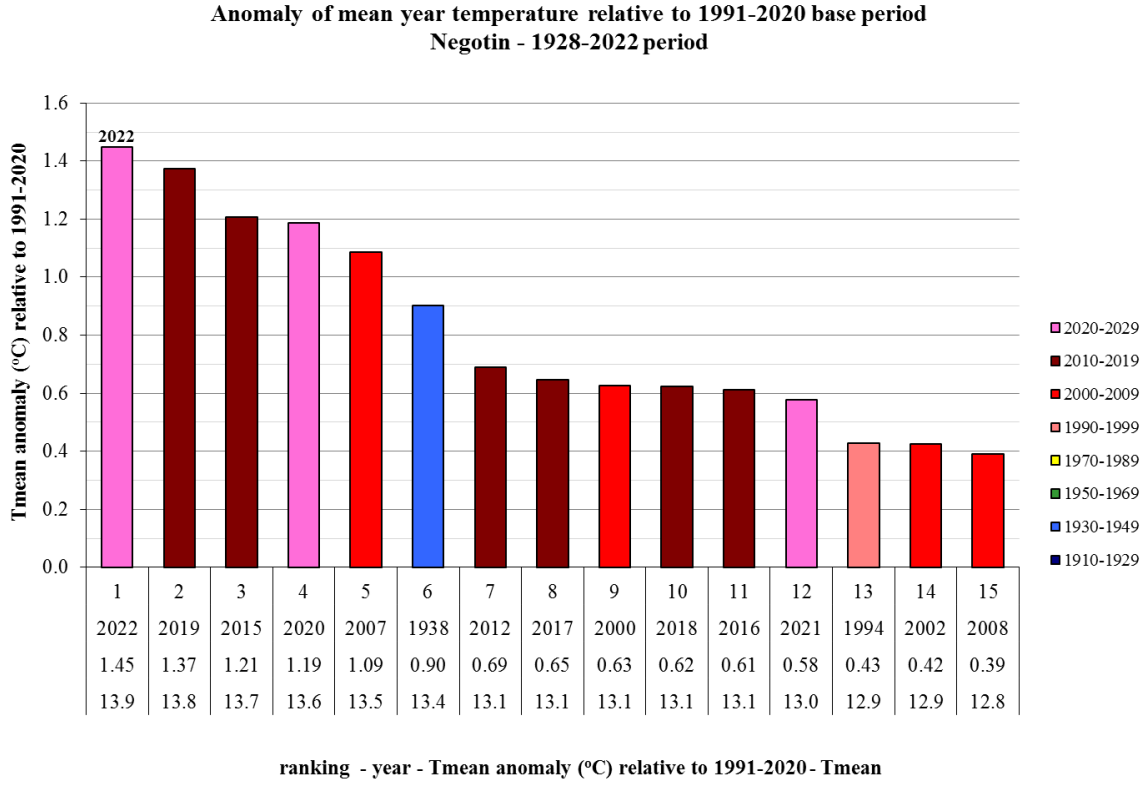

Figure 2. Rank of the warmest years in Negotin

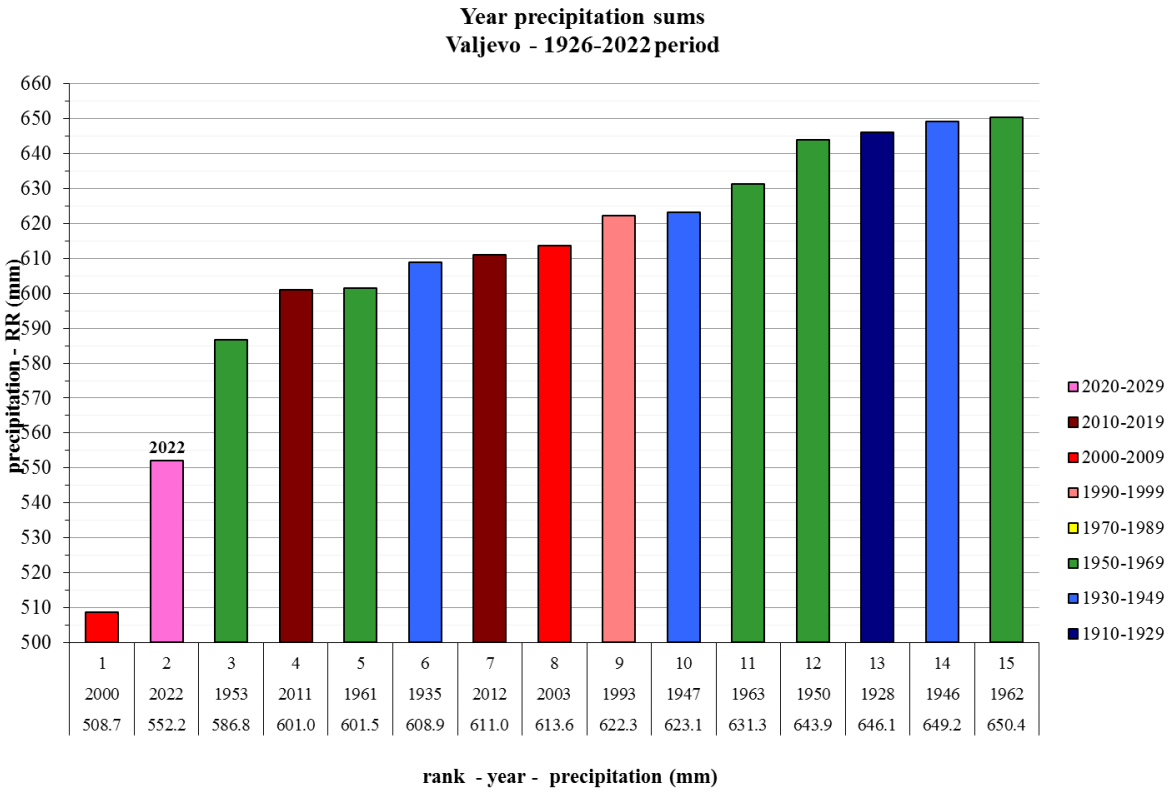

Figure 3. Rank of the driest years in Valjevo

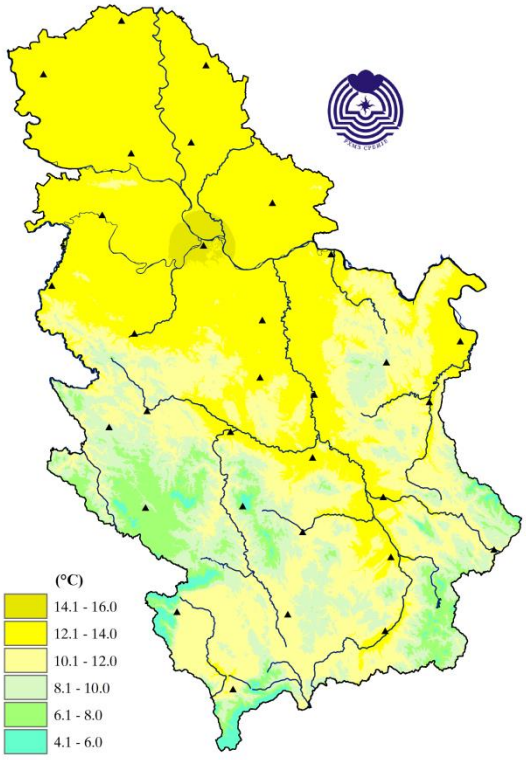

Figure 4. Spatial distribution of mean annual air temperature expressed in (°C)

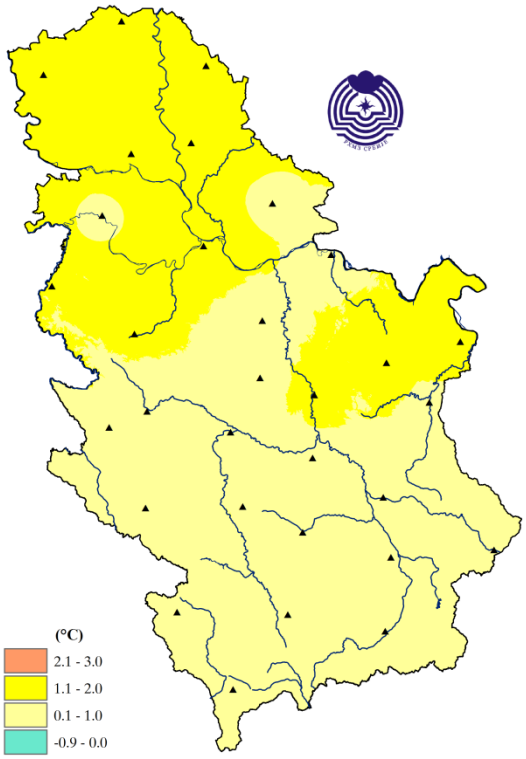

Figure 5. Spatial distribution of mean annual air temperature anomaly expressed in (°C)

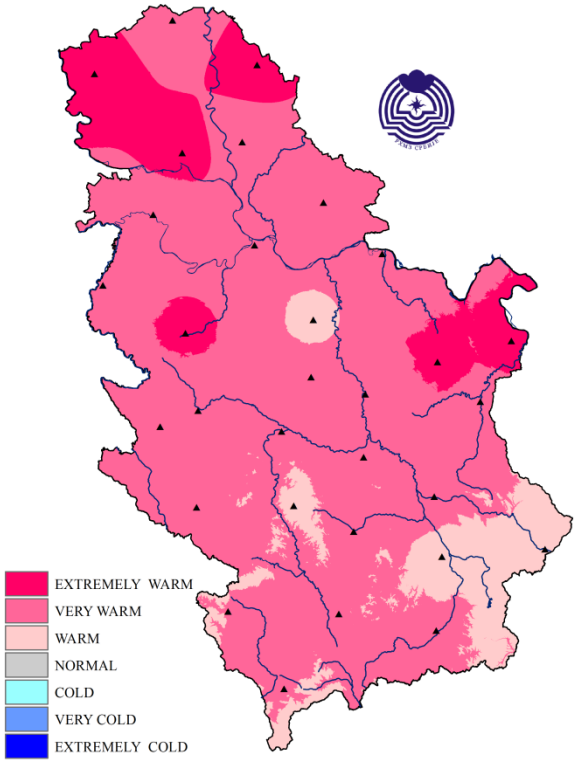

Figure 6. Spatial distribution of mean annual air temperature based on percentile method

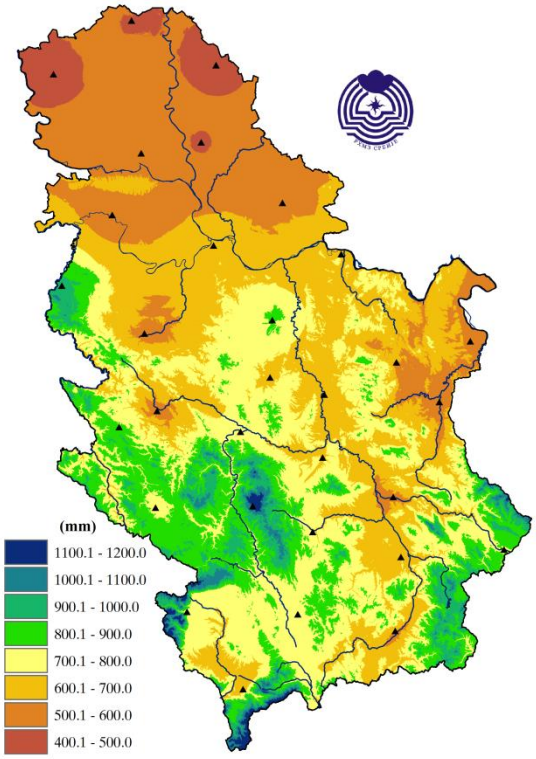

Figure 7. Spatial distribution of annual precipitation totals expressed in mm

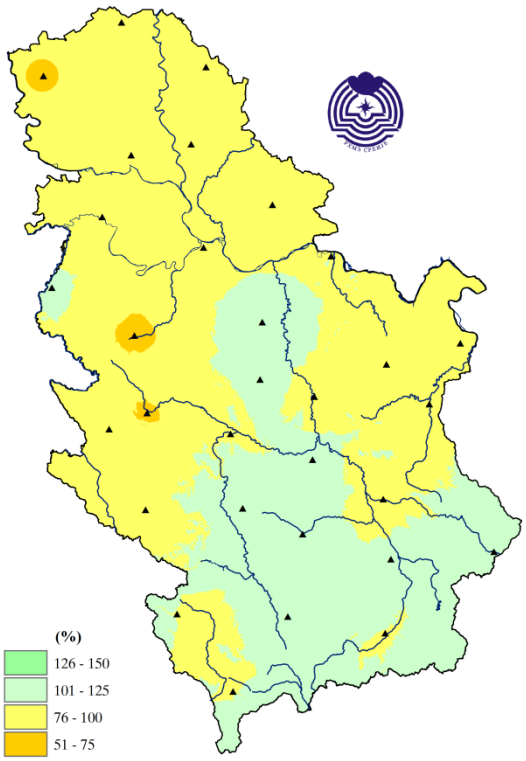

Figure 8. Spatial distribution of annual precipitation totals expressed in percentages of normal for the 1991-2020 base period

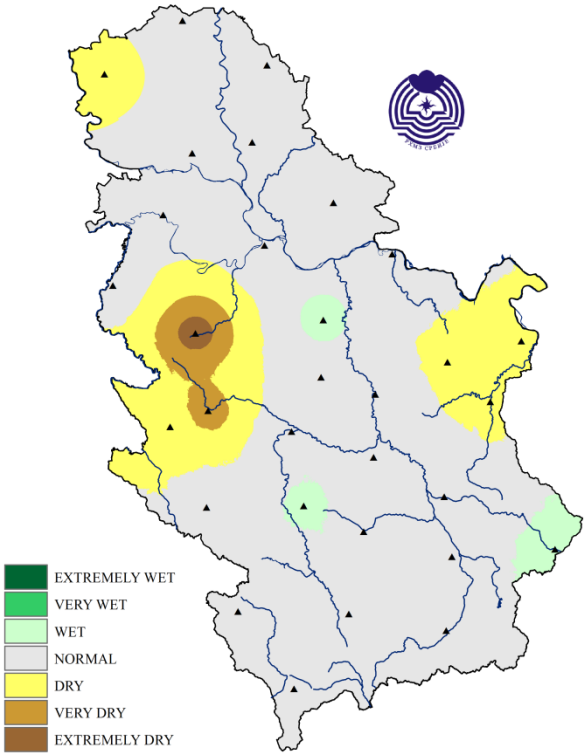

Figure 9. Spatial distribution on annual precipitation totals based on percentile method

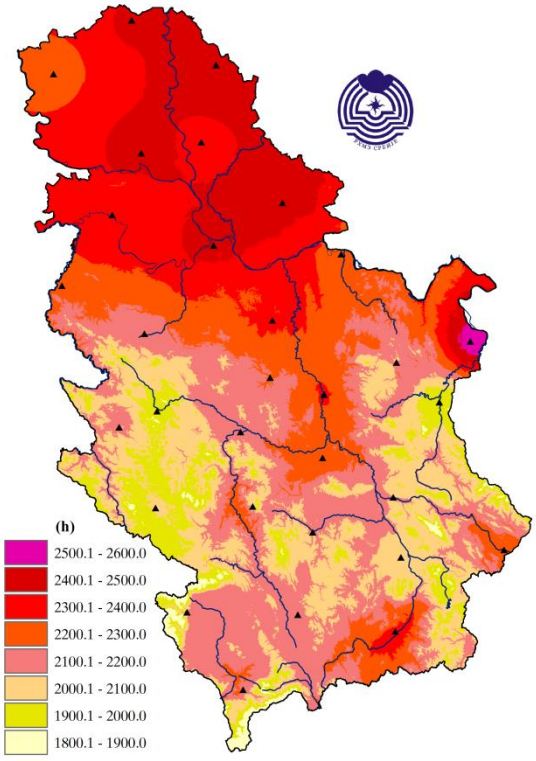

Figure 10. Insolation expressed in hours

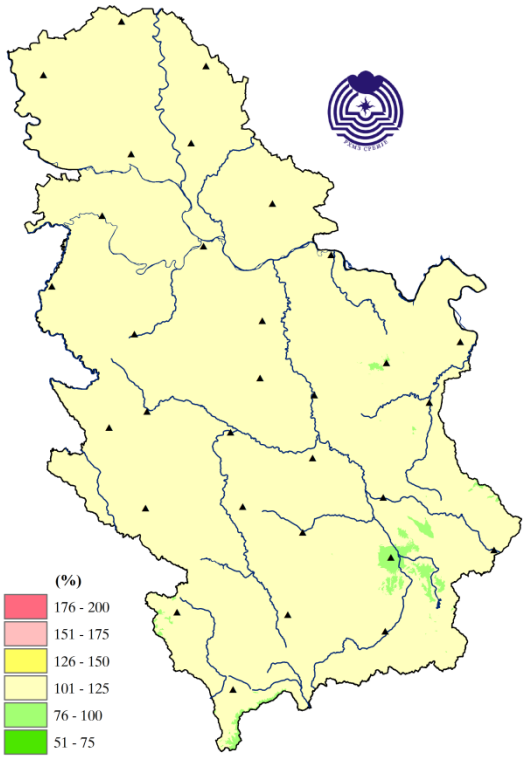

Figure 11. Insolation expressed in percentages of normal for the 1991-2020 base period