The State of Israel
Ministry of Transport
The Israel Meteorological Service

01 March 2023

Monthly Weather Summary – February 2023

February was, in general, colder and rainier than average, but there were noticeable differences between parts of the month. Until February 8th, large amounts of rain fell and it was colder than normal. Later on, until the 16th, it continued to be cold, but with little rainfall. In the last part of the month, there was no rainfall at all and it became warmer, with a heatwave at the end of the month.

Rainfall totals in February were larger than average, especially in the northern and central mountains and the southern coastal plain, so that the large deficit of accumulated rainfall, which existed at the end of January, was reduced early in the month. However, the deficit reemerged as the month continued, so the cumulative rain amounts since the start of the season until the end of February reached approximately 75% of the average for the period.

Rainfall amounts

Despite the cessation in rainfall in the second half of the month, rainfall amounts in February were above average in the northeast of the country, in Samaria, the Judean Mountains and the southern coastal plain. In the northern Golan Heights and the eastern Upper Galilee 200 to 250 mm fell, which constitute approximately 120% to 130% of the monthly average. In Samaria and Judea rain amounts reached 130% to 160% of average (180% in Jerusalem). Monthly amounts east of mountain ridge and in the Jordan Valley even reached twice the average. The coastal plain area from Rishon LeZion and southward was rainy as well (120% to 150% of average), and in its southern part and the Gaza Envelope amounts reached 150% to 180% of the monthly average. The northern Negev was rainier than average as well (Figure 1).

In other parts of the northern and central Israel, rainfall amounts were smaller – in the northern coastal plain and the Sharon, amounts in February were approximately 80% to 90% of average and in the central coastal plain they were near average. In the central and western Galilee, in the Jezreel Valley and around the Sea of Galilee, rainfall totals reached approximately 80% to 100% of average. In the southern parts of the country (the central Negev and the Arava) there was very little rainfall. Table 1 presents rainfall data for February compared to the average at several stations.

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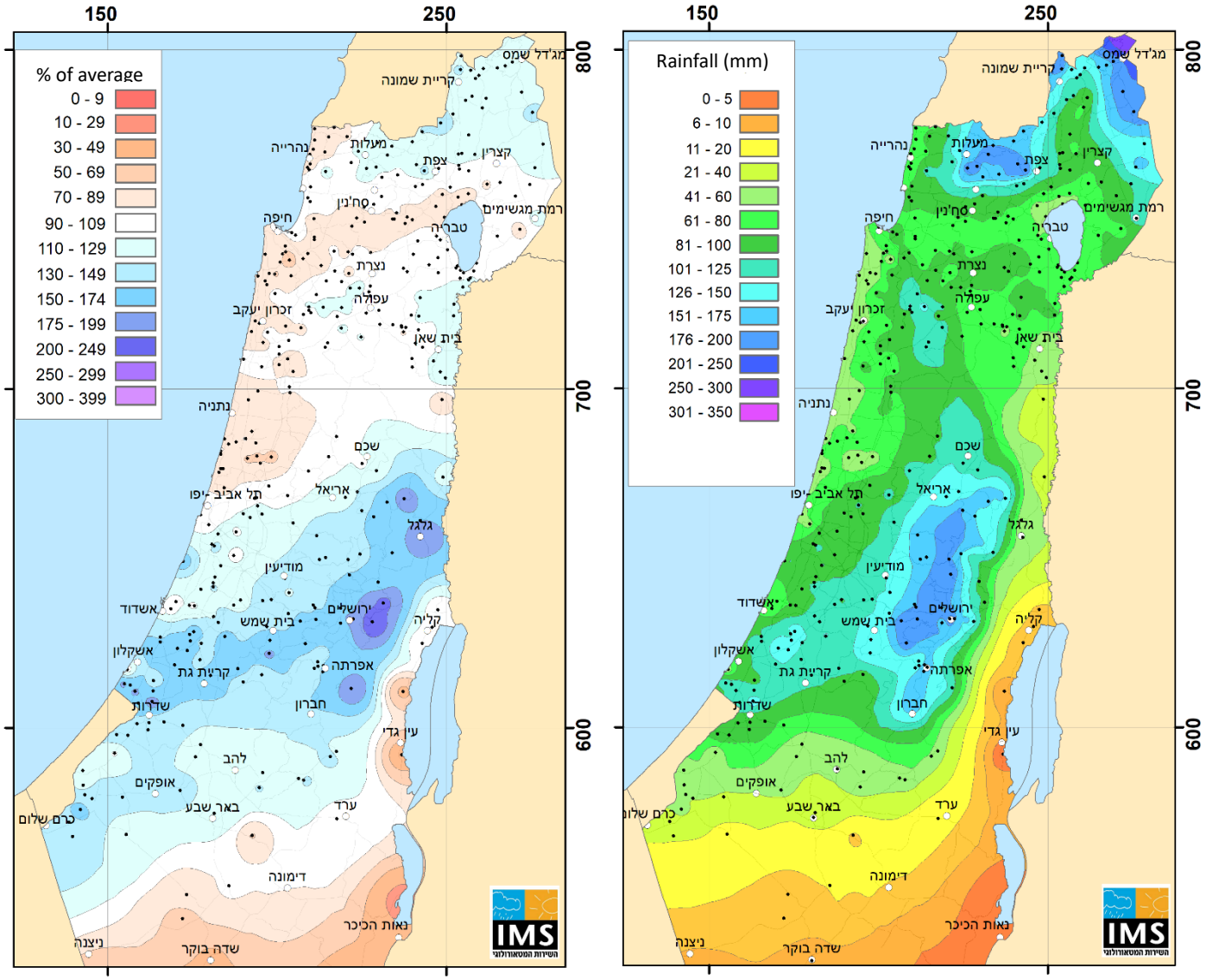

Figure 1: Rainfall amounts in February (right - mm) and comparison to the monthly multi-annual average (left - %)

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Table 1: Rainfall Amounts in February 2023 compared to the month's multi-annual average*

Area	Station	Rain amount in February 2023 (mm)	Multi-annual average for February (mm)*	% of average for February
Coastal Plain and Lowlands	Rosh Haniqra	94	106	89%
	Nahariyya	88	105	84%
	Evron	87	106	82%
	Haifa Technion	96	115	83%
	Haifa (Port)	88	95	93%
	Yagur	116	137	85%
	En Hashofet	120	120	100%
	Zichron Yaakov	75	94	80%
	Amikam	92	111	83%
	Gilad	102	121	84%
	En HaHoresh	74	102	73%
	Bene Dror	95	101	94%
	Kefar Hess	94	114	82%
	Nir Eliyyahu	78	112	70%
	Nahshonim	120	104	115%
	Hakfar Hayarok	90	101	89%
	Tel Aviv Coast	74	73	101%
	Mikve Yisrael	78	87	90%
	Bet Dagan	108	90	120%
	Ben Gurion Airport	109	95	115%
	Rishon Lezion	102	87	117%
	Palmahim	122	75	163%
	Nezer Sereni	126	106	119%
	Gan Shlomo	124	95	131%
	Nir Galim	88	84	105%
	Qevuzat Yavne	101	91	111%
	Nizanim	149	89	167%
	En Zurim	168	101	166%
	Negba	148	93	159%
	Erez	137	78	176%
	Zikim	134	74	181%
	Dorot	105	71	148%
	Yakhini	117	84	139%
	Be'eri	68	63	108%
	Besor	68	43	158%
Northern Mountains	Nimrod Fortress	230	166	139%
	Merom Golan Picman	240	181	133%
	Gamla	116	120	97%
	Elon	128	148	86%

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	Kabri	98	119	82%
	Metula	205	161	127%
	Kefar Giladi	218	178	122%
	Meron	225	184	122%
	Zefat Har Kenaan	136	131	104%
	Harashim	191	189	101%
	Deir Hana	106	120	88%
Northern Valleys	Neve Ya'ar	101	109	93%
	Afula Nir HaEmek	95	91	104%
	Merhavya	94	89	106%
	Banias	180	137	131%
	Dafna	148	122	121%
	Kfar Blum	129	101	128%
	Ayelet HaShahar	116	94	123%
	Ginosar	73	85	86%
	Samakh	88	83	106%
	Sde Eliyahu	68	57	119%
Central Mountains	Kdumim	122	131	93%
	Eli	201	136	148%
	Shiloh	178	115	155%
	Talmon	174	129	135%
	Pesagot	236	160	148%
	Zova	225	146	154%
	Jerusalem Center	213	118	181%
	Ma'ale Adumim	163	67	243%
	Beit Jimal	164	109	150%
	Rosh Zurim	151	121	125%
The Negev	Arad	30	30	100%
	Beer Sheva	45	40	113%
	Mizpe Ramon**	8		
	Neot Smadar**	2		
Jordan Valley** and the Arava	Gilgal	59	36	164%
	Sedom**	2		
	Hazeva**	1		
	Paran**	1		
	Timna (Ramon Airport)**	3		
	Elat**	0		

* The multi-annual average refers to the years 1991 to 2020. In stations that were not active for that entire period, the averages are fitted to these years.
** There is no reference to multi-annual averages in arid areas due to the low absolute average rainfall values.

Number of rainy days and rain events

The number of rainy days in February (over a threshold of 1 mm) was 8 to 9 days in the north and 5 to 6 days in the northern Negev, which is close to the average for the month. All rainy days were in the first half of the month, most of them before the 8th (a continuation of the rain episode which began in late January).

A. February 1-2: The rainfall episode started on January 30, and during the entire episode, 50 to 120 mm fell in the north and center of the country with 150 mm or more falling in some parts of that area. A large part of the rainfall in this episode fell in its first part (late January) so that 20 to 50 mm fell in the north and center of the country and 5 to 10 mm in the northern Negev in the period of early February. Snow fell on Mount Hermon on the February 1st and expanded to the northern Golan Heights during the evening and night. Strong winds of 50 to 60 Km/h prevailed with gusts of 70 to 80 Km/h. There were locally stronger winds, such as in Zefat Har Kena'an with a wind speed of 77 Km/h and a maximum gust of 103 Km/h.
B. February 3-5: Approximately 20 to 50 mm fell in the north and center of the country and 50 to 60 mm in the northern Golan. Most of the rainfall fell from the evening of February 3rd until the following morning.
C. February 6-8 (the storm "Barbara"): During these three days, the storm "Barbara", crossed Israel and was characterized in its first part by very strong winds and continued with large amounts of rain and snow. Wind speed reached 50 to 70 Km/h with gusts of over 100 Km/h (119 Km/h in Zefat Har Kena'an). 100 to 150 mm fell in the central mountains and the northern lowlands, 80 to 110 mm in the northern Golan and the upper Galilee and 40 to 80 mm in other parts of the north and center of the country. Snow fell primarily in the northern mountains and in the higher areas of the central mountains. Snow depth reached over 2 meters in the upper cable car of Mount Hermon and over 20 cm on the high peaks of the Golan Heights. Snow fell in the Galilee and the Hebron Mountains as well.
D. February 11-12: Up to 2 mm fell on the coastal plain, the center and the south of the country. 5 mm fell in the Carmel and northern Sharon areas (11 mm in Gan Shmuel).
E. February 14-16: Small amounts of rain fell on the coastal plain during this episode as well (south of Haifa), in the center and the south of the country. 8 to 15 mm fell in the southern coastal plain and the northwestern Negev (18 mm in Yakhini).

Rainfall Amounts from the Start of the Season

February began with a large deficit in cumulative rainfall, especially in the north, where only approximately half of the average rain amounts for the period fell by the end of January. After the significant rainfall events of the first part of February, the deficit was reduced and the accumulated amounts were even above the average for the same period in some of the areas.

However, almost no rain fell later in the month, so the deficit resurged and grew, and by the end of the month the cumulative rainfall from the start of the season, from a country-wide perspective, reached approximately 75% of the average for the period (and approximately 65% of the average for the entire season),

In the northern mountains, the northern coastal plain and the Sharon area, amounts from the start of the season until the end of February were approximately 60% to 75% of the average for the period and 75% to 80% in the northern valleys and Samaria. In the central and southern coastal plain amounts were 80% to 90% and 100% or more locally. In the Jerusalem Mountains to the Jordan Valley, cumulative amounts were above average. Amounts in the Negev from the start of the season were approximately 70% to 80% whereas they exceeded the average in the Arava (Figure 2 and table 2).

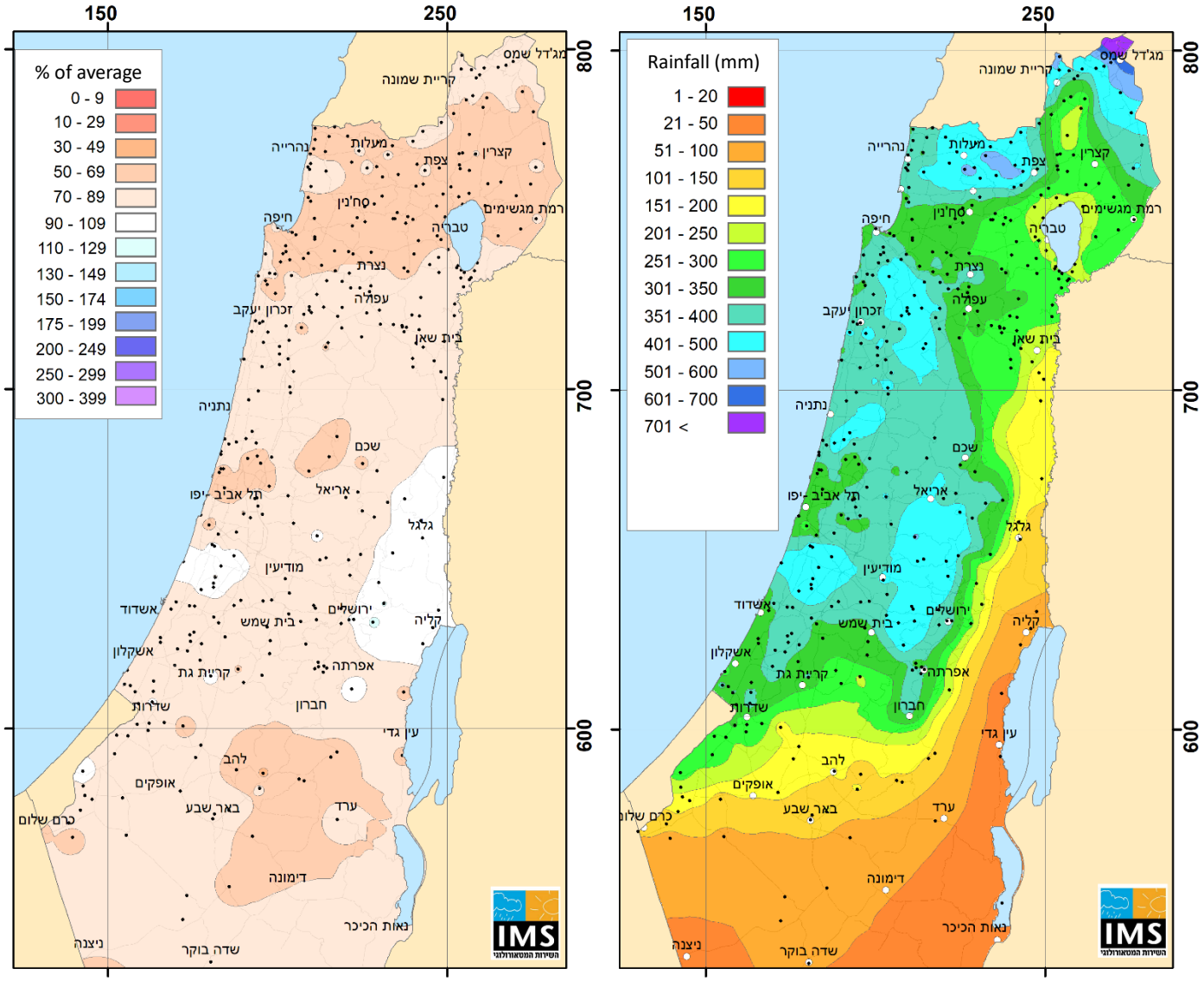

Figure 2: Rainfall amounts from the beginning of the season (right - mm) and comparison to the seasonal multi-annual average (left - %)

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Table 2: Rain Amounts from the start of the Season until Today Compared to the Average*

Station	Cumulative amount from the start of the season until the end of February (mm)	Multi-annual average* from September until the end of February*	% of average for the period	Multi-annual average for the entire season (mm)	% of average for the entire period
Rosh Haniqra	354	518	68%	613	58%
Nahariyya	359	523	69%	615	58%
Evron	379	533	71%	626	61%
Haifa Technion	380	572	66%	671	57%
Haifa (Port)	351	485	72%	565	62%
Yagur	401	606	66%	709	57%
En Hashofet	401	566	71%	661	61%
Zichron Yaakov	379	497	76%	574	66%
Amikam	379	547	69%	635	60%
Gilad	365	559	65%	654	56%
En HaHoresh	358	499	72%	576	62%
Bene Dror	436	504	87%	578	75%
Kefar Hess	376	532	71%	614	61%
Nir Eliyyahu	339	530	64%	636	53%
Nahshonim	355	476	75%	552	64%
Hakfar Hayarok	335	462	73%	595	56%
Tel Aviv Coast	304	390	78%	443	69%
Mikve Yisrael	272	458	59%	522	52%
Bet Dagan	337	466	72%	540	62%
Ben Gurion Airport	360	465	77%	541	67%
Rishon Lezion	413	439	94%	511	81%
Palmahim	429	414	104%	474	91%
Nezer Sereni	498	502	99%	581	86%
Gan Shlomo	481	465	103%	536	90%
Nir Galim	373	439	85%	504	74%
Qevuzat Yavne	369	458	81%	526	70%
Nizanim	371	443	84%	505	73%
En Zurim	367	425	86%	524	70%
Negba	392	432	91%	500	78%
Erez	327	384	85%	443	74%
Zikim	365	394	93%	447	82%
Dorot	250	322	78%	394	63%
Yakhini	300	388	77%	451	67%
Be'eri	283	313	90%	359	79%
Besor	160	183	87%	216	74%
El Rom	490	654	75%	816	60%
Merom Golan Picman	452	658	69%	811	56%
Gamla	282	468	60%	578	49%
Kabri	341	561	61%	666	51%
Kefar Giladi	484	619	78%	757	64%

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Hurfeish	516	723	71%	885	58%
Meron	479	730	66%	881	54%
Zefat Har Kenaan	364	567	64%	688	53%
Harashim	487	815	60%	988	49%
Deir Hana	291	508	57%	616	47%
Neve Ya'ar	341	499	68%	584	58%
Afula Nir HaEmek	299	381	78%	460	65%
Merhaviya	320	387	83%	460	70%
Banias	444	557	80%	690	64%
Dafna	371	503	74%	615	60%
Kefar Blum	308	417	74%	507	61%
Ayyelet Hashahar	264	395	67%	472	56%
Ginnosar	218	369	59%	447	49%
Zemah	254	318	80%	383	66%
Sede Eliyyahu	177	229	77%	278	64%
Kedumim	354	536	66%	642	55%
Eli	424	525	81%	631	67%
Shiloh	374	433	86%	522	72%
Talmon	408	534	76%	648	63%
Pesagot	455	573	79%	694	66%
Zova	426	545	78%	656	65%
Jerusalem Center	387	426	91%	522	74%
Ma'ale Adumim	274	229	120%	276	99%
Beit Jimal	311	423	74%	506	61%
Rosh Zurim	329	460	72%	564	58%
Arad	77	107	72%	134	57%
Beer Sheva	119	156	76%	192	62%
Sede Boqer	52	67	78%	87	60%
Mizpe Ramon	30	55	55%	70	43%
Gilgal	139	144	97%	171	81%
Sedom	25	29	86%	39	64%
Hazeva	26	30	87%	40	65%
Paran	18	24	75%	33	55%
Timna (Ramon Airport)	25	18	139%	25	100%
Elat	26	17	153%	22	118%

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Temperatures and Weather during February 2023

February was colder than average. In the coastal plain and in the north, daytime and nighttime temperatures were lower than average (1991-2020) by 0.5 to 1 °C (they were near average in the northern valleys during daytime). In the central mountains and the Negev temperatures were lower than average by 1 to 1.5 °C and they were close to average or slightly below it in the Arava (table 3).

February was colder than normal from its start to the 16th. Daytime temperatures in the mountains during this period were lower than average by 4 to 5 °C and at nighttime by 3 to 4 °C. Low temperatures in the mountains were especially remarkable on the 6th to the 9th (during storm "Barbara") and reached minimum values of -1 °C in the upper Galilee and 0 to 2 °C in the central mountains. At daytime 4 to 6 °C were measured. In the coastal plain and in the valleys, daytime temperatures until the 16th were approximately 2 °C below average. They were higher than average at nighttime until the 8th of the month (due to the increased cloud cover and rainfall), but later, as it became clear and dry, nights became cooler with minimum temperatures lower than the average by 2.5 to 3 °C. On the 15th to the 19th, minimum values of 0 to 2 °C were measured in the northern valleys and 3 to 5 °C on the coastal plain (figures 3,4).

A warming trend began on the 17th, with temperatures above average on February 19-20th. Later, temperatures were near average, but a noticeable warming occurred on the last to-three days of the month and temperatures of 28 to 29 °C were measured on the 28th in the coastal plain, in the lowlands and the northern Negev and 31 to 33 °C in the Jordan Valley, the Dead Sea and the Araba.

Comparison of February to the Past

In the nationwide series of temperature measurements since 1950, February ranks 23rd and it is the coolest February since 2012. The coldest February was in 1959 followed by 1992 (Figure 5). However, in reference to all winter months (December, January and February), the winter of 2022/23 was warmer than average and is ranked 10th (figure 6).

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Table 1: Temperatures in February 2023 (°C) Compared to the Average

	Station	February 2023		Difference from Average 1991-2020	
		Max	Min	Max	Min
Coastal Plain and Lowlands	Haifa (Technion)	16.4	9.1	-0.3	-1.0
	En HaHoresh	17.9	5.9	-0.6	-1.1
	Bet Dagan	18.6	7.7	-0.2	-0.7
	Negba	17.0	7.7	-1.1	-0.5
Northern Mountains	Elon	16.2	7.7	-1.1	-1.1
	Merom Golan Picman	10.5	0.6	-1.2	-1.7
	Avne Eitan	15.7	5.2	-0.2	-1.3
	Zefat Har Kena'an	10.8	4.1	-0.5	-1.3
	Deir Hanna	16.5	8.7	-0.6	-1.2
Northern Valleys	Afula, Nir HaEmek	18.5	5.5	0.3	-0.4
	Kefar Blum	19.0	5.4	+0.1	-1.4
	Zemah	20.0	7.8	+0.2	-0.7
	Eden Farm	19.7	7.9	+0.2	-0.7
Central Mountains	Qarne Shomron	16.3	7.5	-1.2	-0.8
	Jerusalem	12.6	6.0	-1.4	-1.3
	Beit Jamal	16.2	8.1	-1.9	-1.3
	Rosh Zurim	10.9	4.6	-1.0	-0.8
Negev	Besor	17.2	8.0	-1.7	-0.7
	Arad	14.9	6.7	-1.5	-1.5
	Be'er Seva	17.2	7.5	-1.4	-0.2
	Sede Boqer	16.0	5.0	-0.9	-0.6
Arava	Sodom	22.4	15.1	-0.1	+0.2
	Hazeva	21.2	10.2	-0.1	-0.3
	Eilat	22.9	11.1	-0.6	-0.9

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Table 2: Extreme Temperatures in February 2023 (°C) Compared to the Past

	February 2023				Extreme values from the beginning of measurements				Years of Station Activity
	Extreme Maximum		Extreme Minimum		Extreme Maximum		Extreme Minimum		
	Temp	Date	Temp	Date	Temp	Date	Temp	Date	
Bet Dagan	29.3	28/2/23	2.9	14/2/23	33.4	17/2/1973	-2.2	4/2/1989	1962-2023
Negba	27.3	28/2/23	2.3	14/2/23	32.4	17/2/1973	-1.5	6/2/1950	1950-2023
Zefat Har Kenaan	20.8	27/2/23	-0.8	8/2/23	26.7	23/2/1941	-9.0	6/2/1950	1939-2023
Jerusalem*	23.4	27/2/23	1.4	7/2/23	29.9	23/2/1941	-5.1	6/2/1950	1867-2023
Sheva**	27.8	28/2/23	4.5	14/2/23	35.2	23/2/1941	-4.0	6/2/1950	1952-2023
Eilat	33.7	28/2/23	7.1	16/2/23	35.8	29/2/2004	0.9	7/2/1950	1949-2023

* Jerusalem: Center 1950-2023, Talbieh 1948-1949, Palace Hotel 1935-1947, American Colony 1927-1935, Mount of Olives 1918-1926, German Colony 1895-1915, English Hospital on HaNeviim Street 1898-1913, English Hospital in the Old City 1867-1915.

** Beer Sheva University 2023, Beer Sheva Negev Institute 1957-2022, Beersheba 1922-1957

Figure 3: Daily minimum and maximum temperatures in Jerusalem in March 2023 compared to the multi-year average

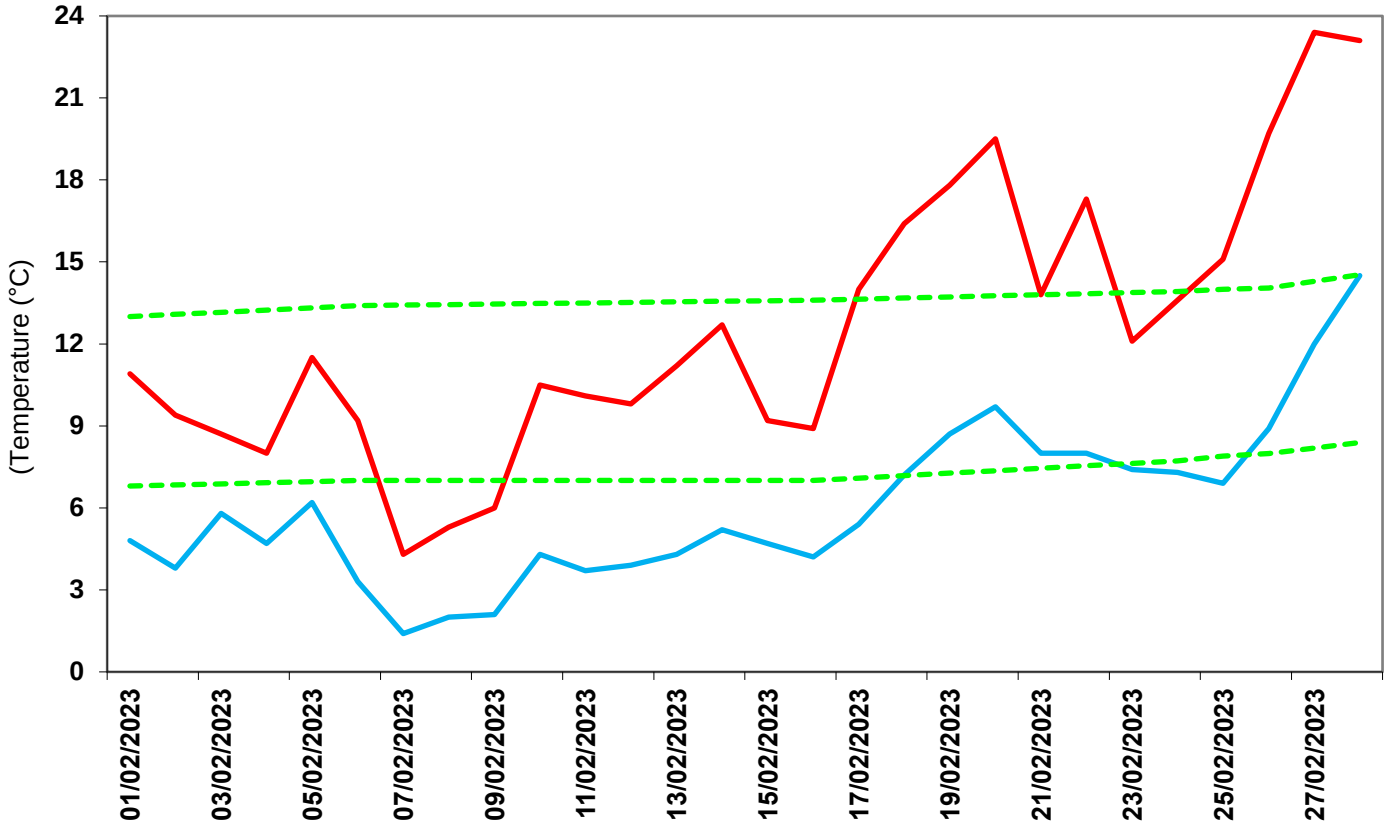


Figure 4: Daily minimum and maximum temperatures in Bet Dagan in March 2023 compared to the multi-year average

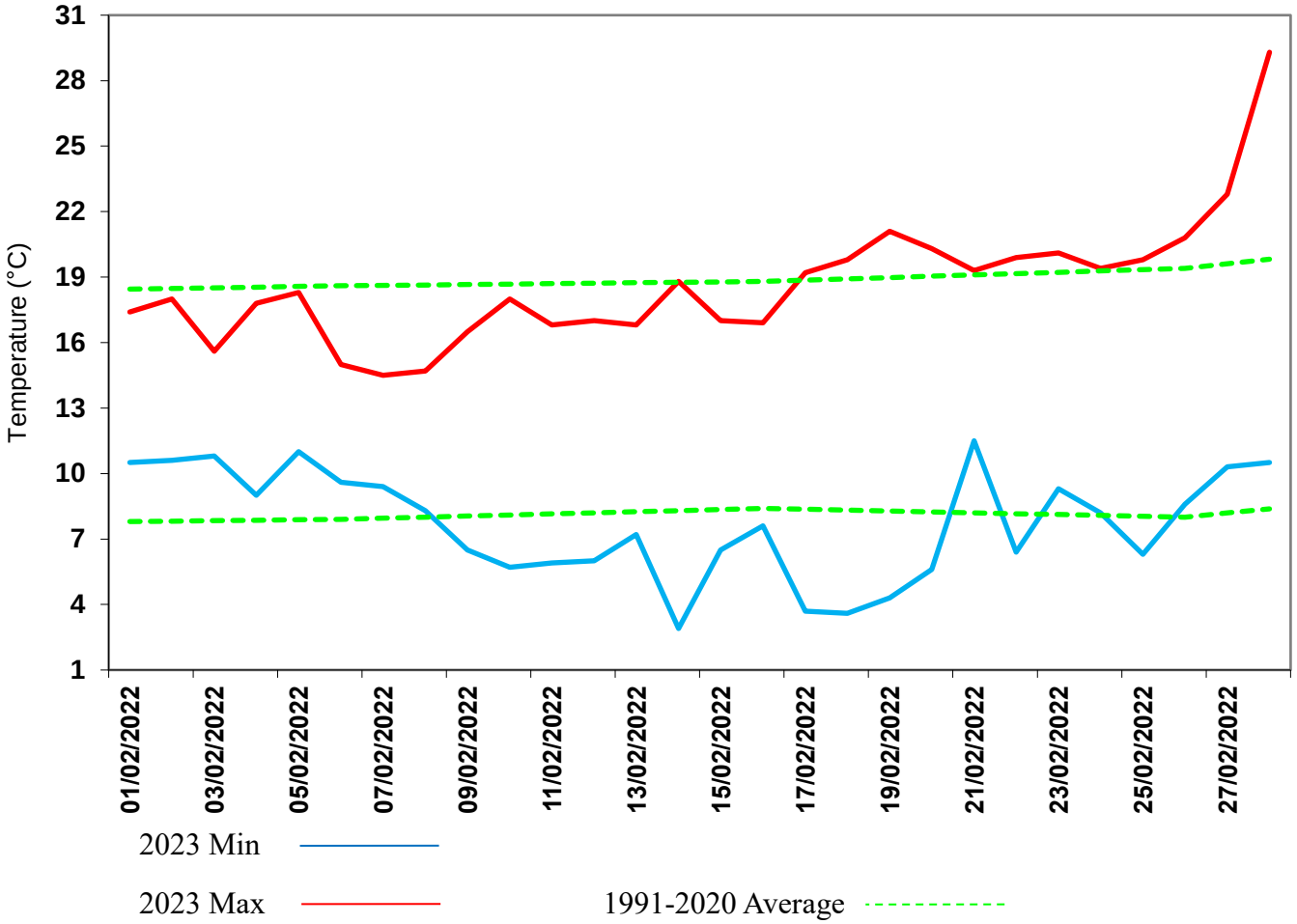
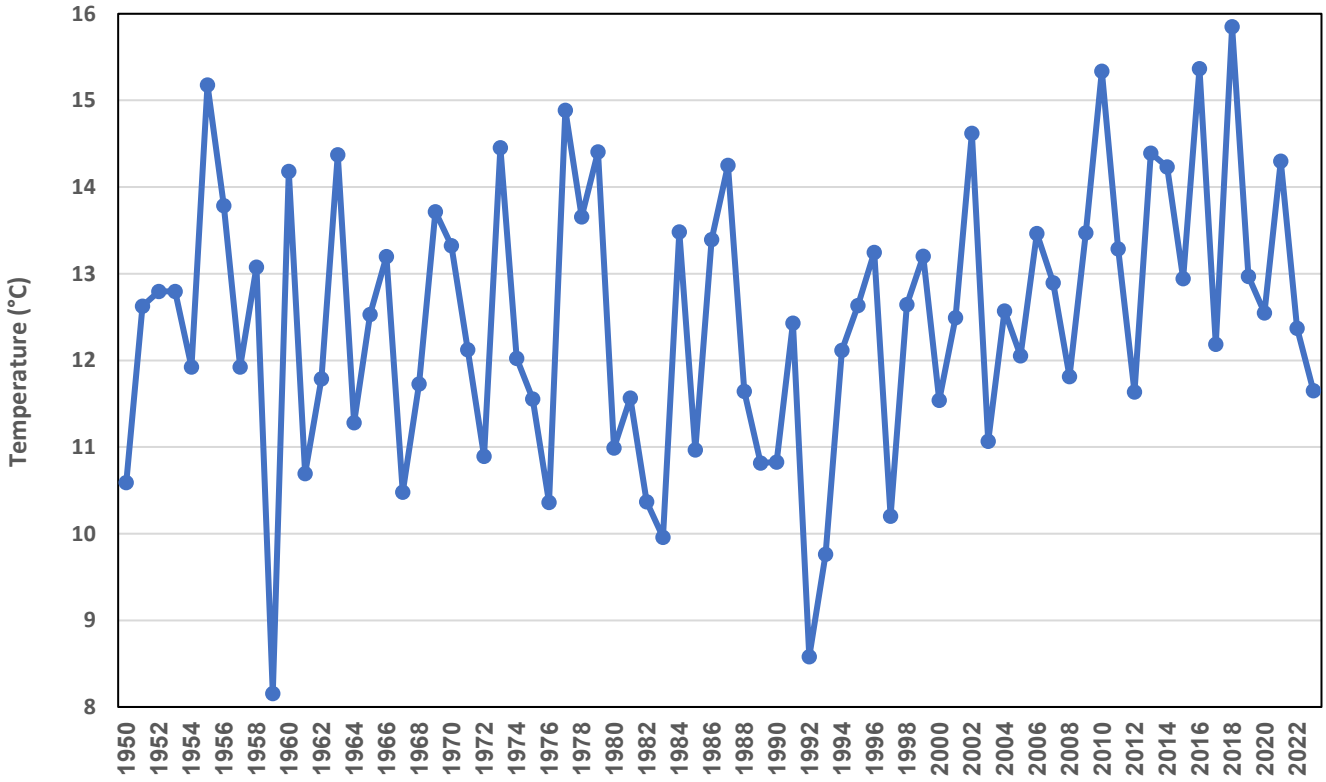
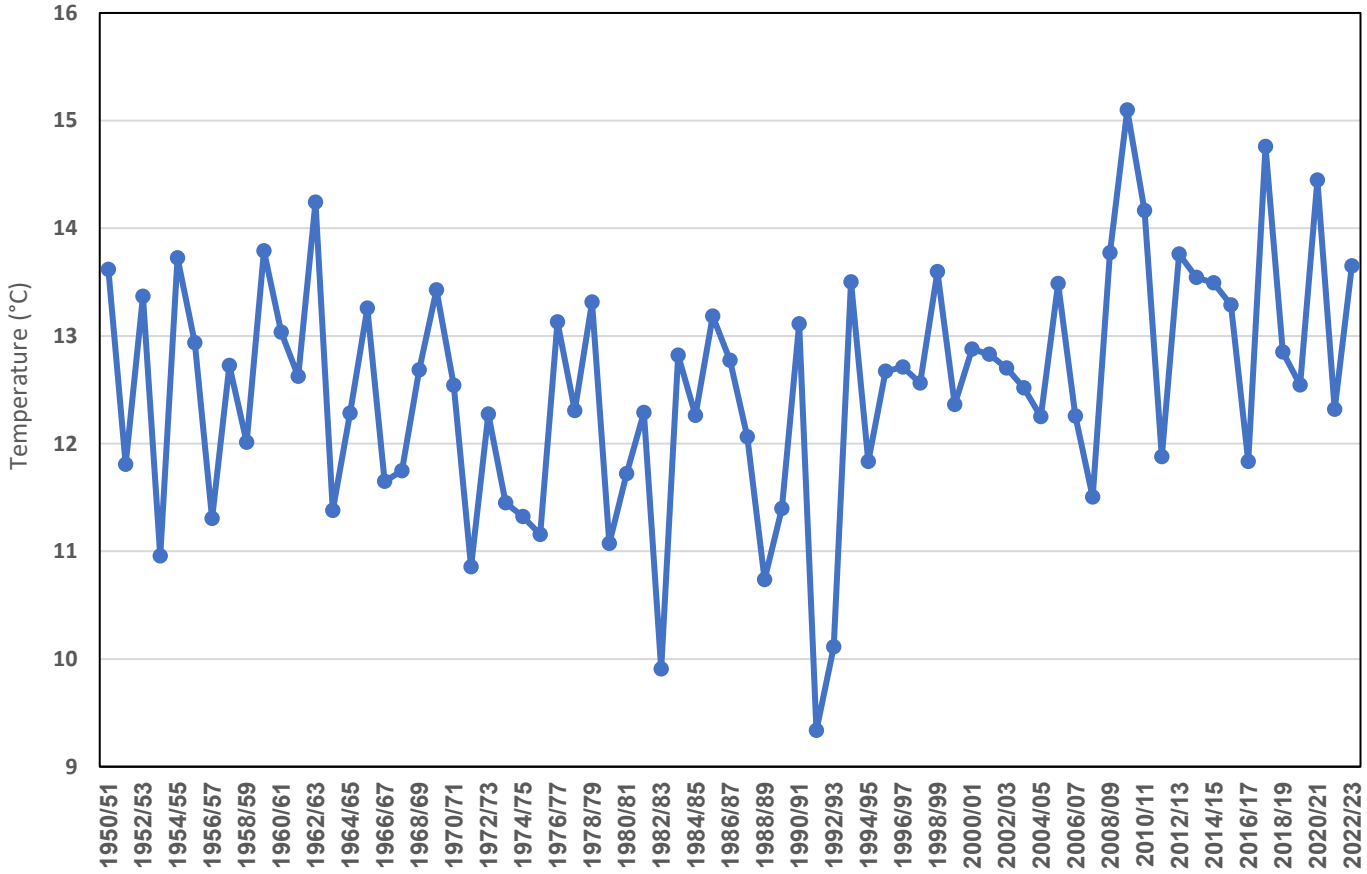


Figure 5: Average Temperature* in Israel in February 1950 to 2023



* In order to represent the territory of Israel, five characteristic stations were selected which have data since the year 1950. The trend of the averages in these stations is similar to the trend of averages in a larger and more diverse sample of stations.

Figure 6: Average Temperatures* in Israel in December to February 1950/51 to 2022/23



* In order to represent the territory of Israel, five characteristic stations were selected which have data since the year 1950. The trend of the averages in these stations is similar to the trend of averages in a larger and more diverse sample of stations.