

## Monthly Weather Summary – August 2021

August was considerably warmer than average and in comparison to past years, it is ranked as fourth on record.

In the first week of the month, there was a heat wave that was characterized by dryness that uncharacteristically reached the Coastal Plain. The duration of the heat wave was unusual for the summer, but the minimum temperatures were relatively comfortable in the Coastal Plain and in the valleys.

Later on, after the heat wave, the weather became a regular summertime one and in the latter part of the month it was warmer than usual, mainly inland.

### **The temperatures and the weather during the month**

Daytime temperatures in August were above average (1995-1995) by 2.0 to 2.5 °C in the Coastal Plain, the northern valleys and the central mountains. They were slightly below average (by 1.5 to 2.0 °C) in the northern mountains and the south of the country. At night temperatures were above average by 1.0 to 1.5 °C in most parts of the country and in the Coastal Plain by 0.5 to 1.0 °C (Figs. 1, 2).

It should be noted that the sea surface temperature during the month was high, around 31 °C, which contributed to the higher than average temperatures in the Coastal Plain throughout the month, even when under normal synoptic conditions.

The month began with a heat spell that prevailed during its first week. In the mountains 34 to 36 °C were measured, in the Coastal Plain and in the lowlands 36 to 38 °C, in the northern Negev and in the northern valleys 39 to 41 °C and in the Jordan Valley and in the Arava 43 to 46 °C (in Sodom 47 °C on the 7<sup>th</sup>). The sequence of these high temperatures for about 6 to 7 days is unusual for the summer months and in some parts of the country (Coastal Plain, lowlands, northwestern Negev and Jezreel Valley) it is unprecedented for this season.

The heat spell was characterized by dryness that also reached the Coastal Plain. The dryness in this area, lasting close to a week, is unprecedented for the summer season which is usually characterized by relatively high humidity and especially during heat spells. The drying of the air allowed a nocturnal radiation cooling and therefore the minimum temperatures during the heat spell were actually comfortable in the lowlands and reached 20 to 22 °C in the Coastal Plain, in the lowlands, in the northern valleys and in the northern Negev, values close to average for this period and even lower. This contributed to a significant relief in the heat stress at night in contrast to what usually happens in summer heat spells in the coastal area.

On the 8<sup>th</sup> there was a considerable cooling and later in the month the maximum temperatures were close to average, although by the middle of the month they were still slightly above it in the mountains and inland and 2 to 2.5 °C above average in the Coastal Plain.

Inland, the minimum temperatures also dropped, but in the Coastal Plain they rose, which caused a heavier heat stress in this area precisely after the end of the heat spell.

Later there was another cooling and on the 15<sup>th</sup> to 20<sup>th</sup>, there was a period of temperatures close to average and even below it in some areas. The last ten days of the month were warmer, with higher than normal temperatures, reaching 34 to 36 °C in the mountains on August 25<sup>th</sup> to the 27<sup>th</sup>, 40 to 42 °C in the Hula Valley and the Sea of Galilee and 42 to 44 °C in the Jordan Valley and the Arava.

**Table 1: August 2021 temperatures (°C) compared with the average**

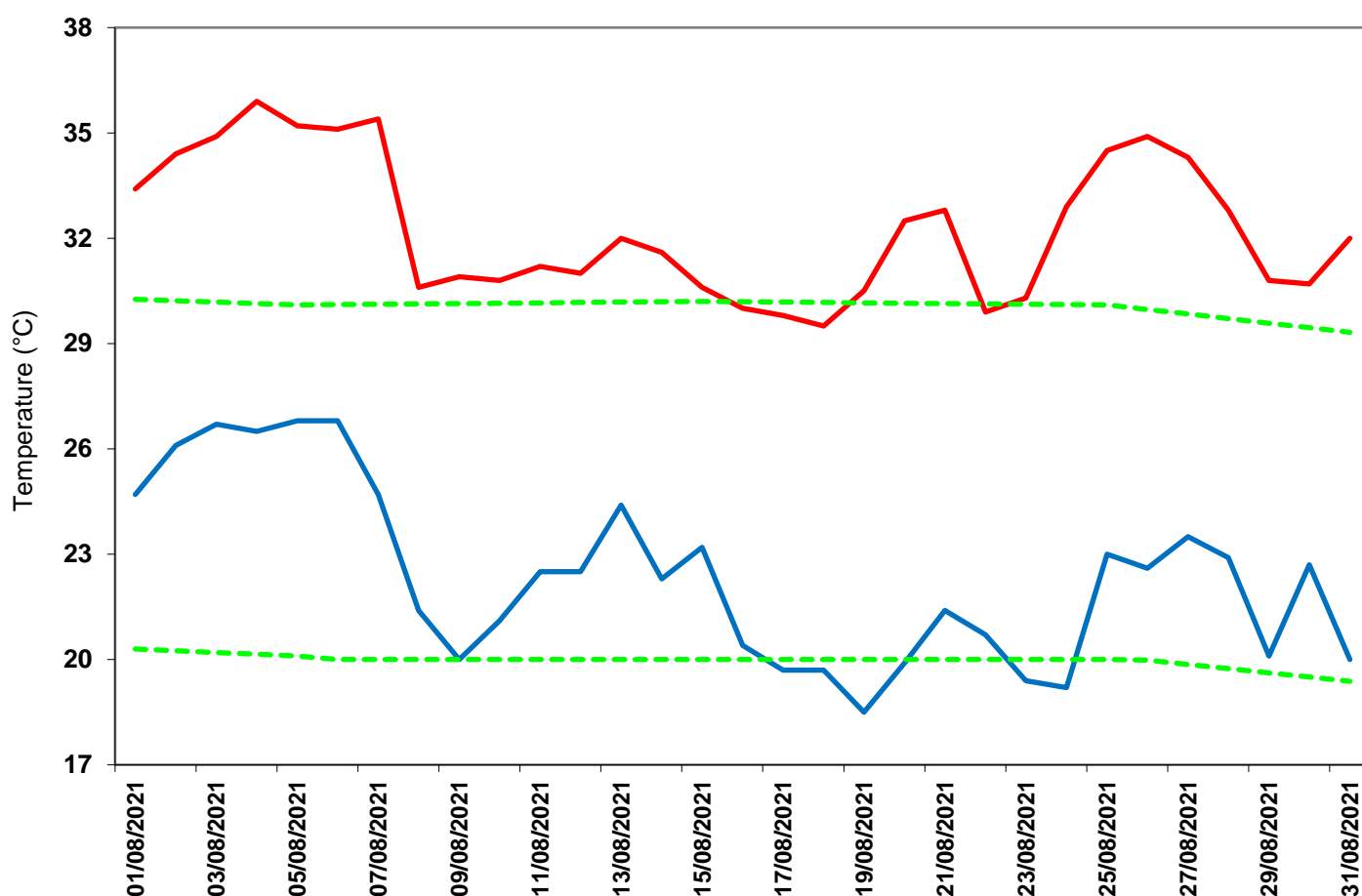
Region	Station	August 2021		Deviation from the average 1995-2009	
		Maximum	Minimum	Maximum	Minimum
Coastal Plain and the Shfela	Haifa (Technion)	31.1	24.1	+2.3	+1.0
	En HaHoresh	33.1	21.2	+1.6	+1.0
	Bet Dagan	34.2	23.1	+2.4	+0.3
	Negba	34.1	23.3	+2.2	+1.3
Northern mountains	Elon (western Galilee)	32.8	22.3	+1.9	+0.9
	Merom Golan Picman	31.3	17.6	+1.9	+0.8
	Avne Etan	34.9	20.7	+1.6	+1.0
	Zefat Har Kenaan	31.3	21.2	+1.1	+1.6
	Deir Hanna	33.7	24.3	+2.2	+1.2
Northern valleys	Afula, Nir HaEmeq	36.9	22.9	+2.7	+1.3
	Kefar Blum	37.9	21.9	+2.3	+1.0
	Zemah	39.7	24.9	+2.1	+1.1
	Eden Farm (Bet Shean)	39.4	25.0	+1.9	+0.9
Central mountains	Qarne Shomron	33.5	22.2	+2.7	+1.1
	Jerusalem	32.3	22.4	+2.4	+2.4
	Bet Jimal	34.8	23.3	+1.9	+1.6
	Rosh Zurim	30.7	20.5	+2.4	+1.8
Negev	Besor	34.4	22.2	+1.9	+0.9
	Arad	35.4	20.8	+1.9	+1.5
	Be'er Sheva	36.7	22.2	+2.0	+0.7
	Sede Boqer	35.0	20.3	+2.0	+1.1
Arava	Sedom	42.0	32.1	+2.2	+1.4
	Elat	40.6	28.2	+0.6	+0.8

**Table 2: Extreme temperatures in August 2021 (°C) compared with the past**

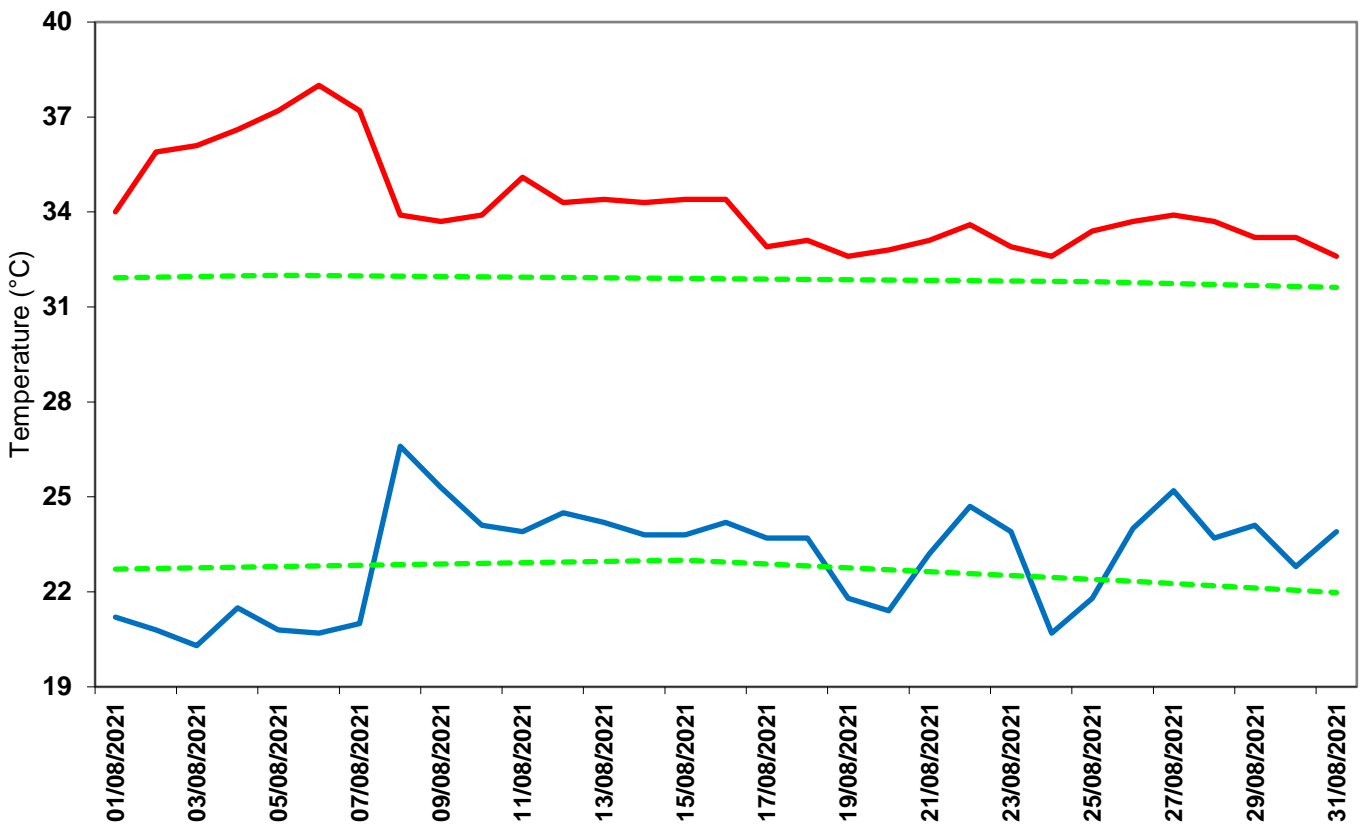
Station	August 2021				Extreme Values in record				Period of measurements
	Extreme Max.		Extreme Min.		Extreme Max.		Extreme Min.		
	Temp.	Date	Temp.	Date	Temp.	Date	Temp.	Date	
Bet Dagan	38.0	6/8/21	20.3	3/8/21	38.6	1/8/12	14.6	18/8/69	1962-2021
Negba	39.5	5/8/21	21.0	3/8/21	39.4	1/8/12	14.0	18/8/69	1950-2021
Zefat Har Kenaan	34.5	7/8/21	17.7	19/8/21	40.6	20/8/10	13.0	22/8/49	1939-2021
Jerusalem <sup>1</sup>	35.9	4/8/21	18.5	19/8/21	**44.4	28/8/1881 30/8/1881	14.0	3/8/26	1867-2021
Be'er Sheva <sup>2</sup>	40.8	7/8/21	19.0	20/8/21	43.8	6/8/10	12.0	31/8/34	1922-2021
Elat	42.5	7/8/21	25.5	19/8/21	48.0	1/8/02	19.4	22/8/76	1949-2021

<sup>1</sup> For Jerusalem: Center 1950-2021; Talbiye 1948-1949; Palace Hotel 1935-1947, American Colony 1927-1935, Mt. of Olives 1918-1926, German Colony 1895-1915, English Hospital Nevi'im St 1898-1913, English Hospital Old City 1867-1915

<sup>2</sup> For Be'er Sheva: Negev Institute 1957-2021; Old Town 1922-1957.



**Figure 1: Daily minimum and maximum temperatures in Jerusalem in August 2021 compared with the long-term average**



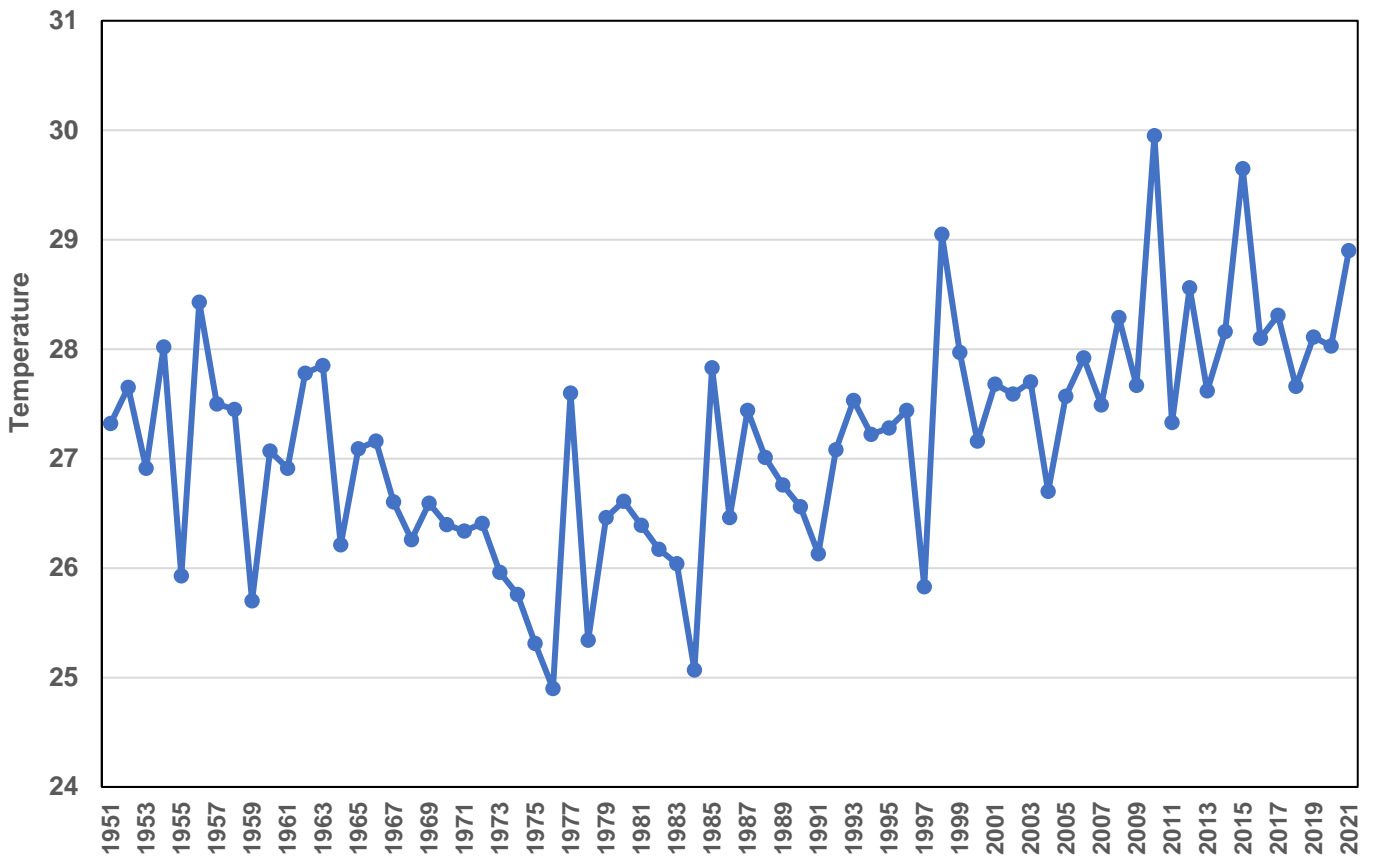
**Figure 2: Daily minimum and maximum temperatures in Bet Dagan in July 2021 compared with the long-term average**

1995-2009 Average    2021    Min    Max

**August 2021 compared with the past**

August 2021 was warmer than usual and its comparison to the past reveals that it was one of the warmest in the last 70 years and it is ranked as fourth on record. The three years in which August was warmer were 2015, 2010 and 1998 (Figure 3).

In an annual overview the year 2021 so far (January to August) is ranked in the fourth place compared to the corresponding period in the past.



**Figure 3: Israel average daily temperature (°C) \* in August 1951-2020**

\* The value is based on the average of five stations : Zefat Har Kenaan, Jerusalem Centre, Beit Jimal, Negba and Elat. Preliminary tests revealed that the average of these stations can, to a good approximation, represent the entire area of Israel.