

## **A weather monthly Summary – September 2021**

September temperatures were close to average in the mountains and inland and slightly warmer than average in the Coastal Plain. There was a significant relief in heat stress compared to August and compared to the previous September months, it was the mildest since September 2014.

During the month there was a number of Sharav days that also reached the Coastal Plain and alongside them, there were relatively cool days and even rain, so the month as a whole was characterized by changes in the weather and was less stable than usual. These phenomena are more typical in the autumn and less in September.

In the second part of the month, there was a rain event with widespread rainfall and amounts of several millimeters and in some places more than 10 mm.

The summer of 2021 (June to September) was warmer than usual, but less hot than most summers in the last decade.

### **Temperatures and weather throughout the month**

Temperatures in September were close to average (1995-2009) in the mountains and inland. In the Coastal Plain and in the northern valleys they were above average by 0.5 to 1 °C (Figs. 1, 2). The higher temperatures in the Coastal Plain were caused by the sea temperature which is still high during this period.

During the month there were several Sharav events as detailed below and it should be noted that they were short in their duration, unlike autumn Sharavs which tend to be prolonged.

In the first days of the month it was slightly warmer than usual, but later on it turned cooler. On the 9<sup>th</sup>, there was rapid warming and a Sharav prevailed with temperatures of 35 to 36 °C in the Coastal Plain, 38 to 39 °C in the northern Negev and the northern valleys, and 40 to 42 °C in the Jordan Valley and the Arava.

The Sharav was short in its duration and on the next day there was a considerable cooling with temperatures below average by about 2 to 4 °C in the mountains and inland. After several cooler days, there was another Sharav on the 13<sup>th</sup>, with temperature values similar to those prevailing in the previous Sharav. In this case, too, the Sharav lasted only one day, after which there was considerable cooling and lower-than-normal temperatures prevailed inland.

From September 18 to 21 it was warmer than normal, yet on the 22<sup>nd</sup> there was a cooling trend which continued in the following days. On the 24<sup>th</sup>, relatively low temperatures were measured - in the mountains the maximum temperature was only 22 °C and in the eastern valleys 30 to 31 °C. These values are rare for the summer and even at the end of September they are not common, especially in the recent decades.

In Jerusalem, a maximum temperature of 22 °C or less was measured only twice in September in the last 40 years (in 2009 and 1997).

The minimum temperatures were also unusual - in Hazeva 19.4°C was measured on the 25<sup>th</sup> and since 1997 no similar values were measured in September. In Bet Dagan, 16.5°C was measured on the 26<sup>th</sup> and 11.5°C in Netiv Halamed He, and in the last two decades, similar values were received only twice in September.

After this cool night, there was a considerable warming during on the 26<sup>th</sup> and even a Sharav prevailed with temperatures of 35 to 37°C in the Coastal Plain, in the lowlands, in the Negev and in the northern valleys. On the next day there was a noticeable cooling and by the end of the month the temperatures were close to average.

### Rainfall

On the 23<sup>rd</sup> and the 24<sup>th</sup> it rained from the north of the country to the south. The focus of the rain was in the southern Coastal Plain and the Shfela with amounts of 5 to 10 mm (in Nitzanim 11 mm).

Amounts of 5 mm or more were measured in the area of Nahariya, Sharon, Samaria, the southern Coastal Plain, the Hebron Mountains and the northern Negev. Elsewhere the amounts were lower and the rain even reached as far as Sedom and Hatzeva. It should be noted that the rainfall was unusual for September and it rained in a number of periods over the course of 24 hours from Thursday evening to Friday evening and not just as the morning rains typical of summer light rains. The table below presents rain data at several stations.

Station	Rainfall (mm) Sep 23-24
Eshar	3
Qedumim	7
Jerusalem	0.2
Lahav	4
Shani	8
Beer Sheva	5
Sede Boqer	2
Ezuz	4
Sedom	2

Station	Rainfall (mm) Sep 23-24
Nahariyya	8
Haifa Uni.	3
En HoHoresh	11
Tel Aviv Coast	1
Bet Dagan	1
Nizzanim	11
Negba	9
Besor	3
Kefar Giladi	1

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

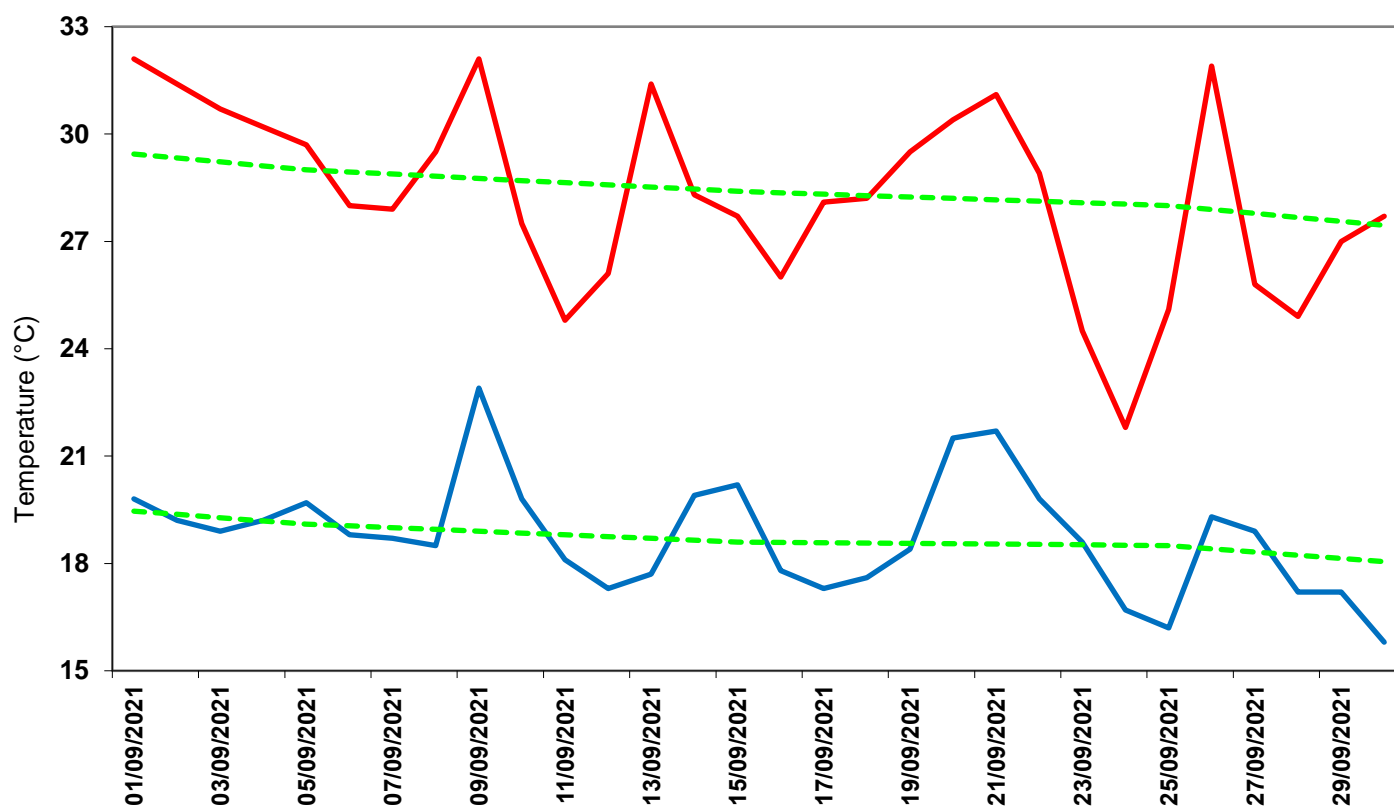
Region	Station	September 2021		Deviation from the average 1995-2009	
		Maximum	Minimum	Maximum	Minimum
Coastal Plain and the Shfela	Haifa (Technion)	29.3	22.1	+1.4	+0.4
	En HaHoresh	31.2	19.2	+0.5	+1.4
	Bet Dagan	32.0	21.2	+1.2	+0.3
	Negba	31.3	21.3	+0.5	+0.7
Northern mountains	Elon (western Galilee)	30.6	20.4	+0.8	+0.1
	Merom Golan Picman	27.3	14.8	-0.4	+0.7
	Avne Etan	31.5	17.7	-0.2	+0.1
	Zefat Har Kenaan	27.3	17.2	-0.8	-0.6
	Deir Hanna	31.2	21.9	+0.6	+0.3
Northern valleys	Afula, Nir HaEmeq	33.8	20.1	+0.9	+0.8
	Kefar Blum	35.0	19.2	+0.9	+0.6
	Zemah	36.1	21.9	+0.5	+0.5
	Eden Farm (Bet Shean)	35.8	22.5	+0.1	+0.6
Central mountains	Qarne Shomron	30.4	20.1	+0.8	+0.5
	Jerusalem	28.3	18.8	-0.1	+0.1
	Bet Jimal	31.2	20.9	-0.5	+0.3
	Rosh Zurim	26.8	17.1	+0.2	0.0
Negev	Besor	31.2	20.2	0.0	+0.5
	Arad	30.9	18.2	-0.4	+0.1
	Be'er Sheva	32.9	19.9	0.0	+0.3
	Sede Boqer	30.9	18.0	+0.1	+0.6
Arava	Sedom	37.6	29.2	+0.6	+0.3
	Elat	37.2	25.6	-0.1	+0.4

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

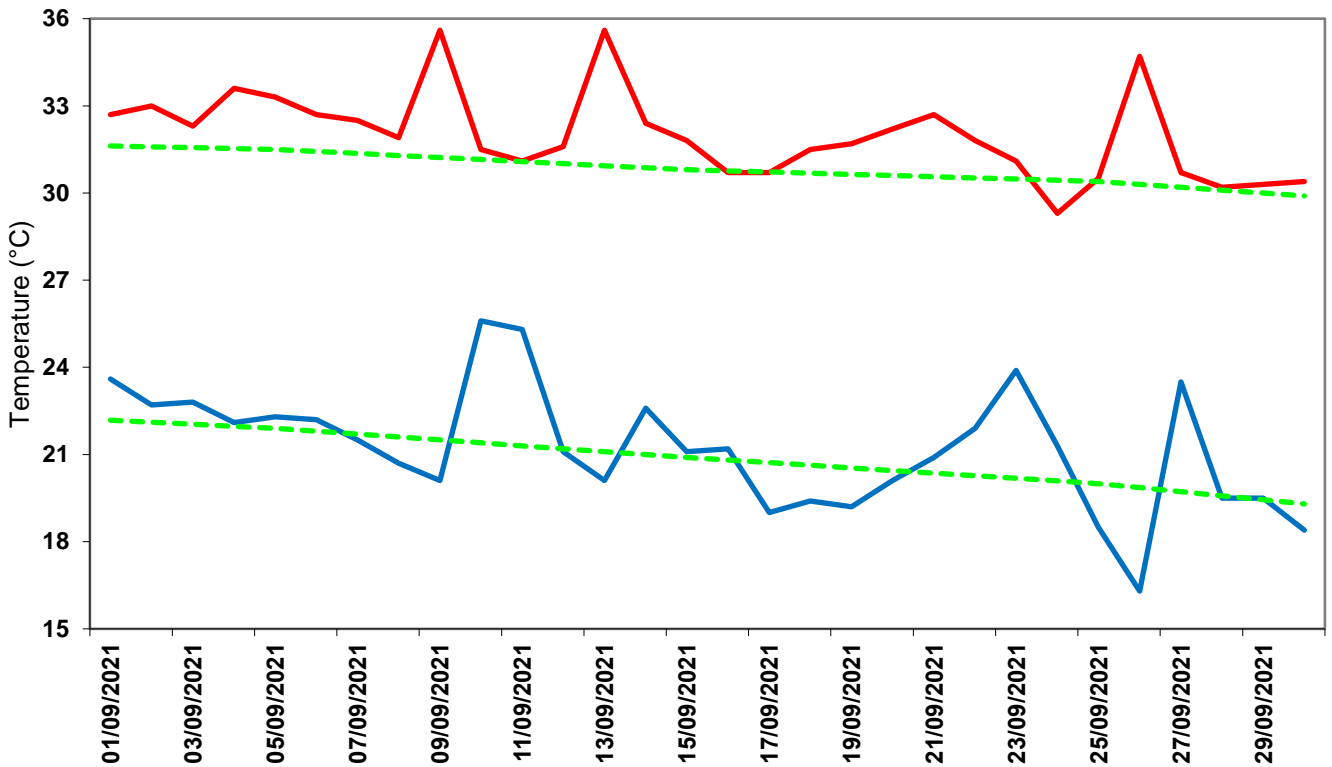
Station	September 2021				Extreme Values in record				Period of measurements
	Extreme Max.		Extreme Min.		Extreme Max.		Extreme Min.		
	Temp.	Date	Temp.	Date	Temp.	Date	Temp.	Date	
Bet Dagan	35.6	9/9/21 13/9/21	16.3	26/9/21	42.0	6/9/1996	10.8	28/9/1992	1962-2021
Negba	35.4	9/9/21	16.5	25/9/21	42.4	6/9/1996	12.8	28/9/1992	1950-2021
Zefat Har Kanaan	31.3	21/9/21	14.3	25/9/21	40.6	4/9/2020	10.7	30/9/1949	1939-2021
Jerusalem <sup>1</sup>	32.1	1/9/21	15.8	30/9/21	42.7	4/9/2020	13.2	28/9/1992	1867-2021
Be'er Sheva <sup>2</sup>	38.0	9/9/21	15.8	25/9/21 26/9/21	44.0	4/9/2020	9.4	22/9/1930	1922-2021
Elat	41.6	9/9/21	22.3	29/9/21	48.9	4/9/2020	18.6	26/9/1974	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 September 2021 compared with the long-term average**



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

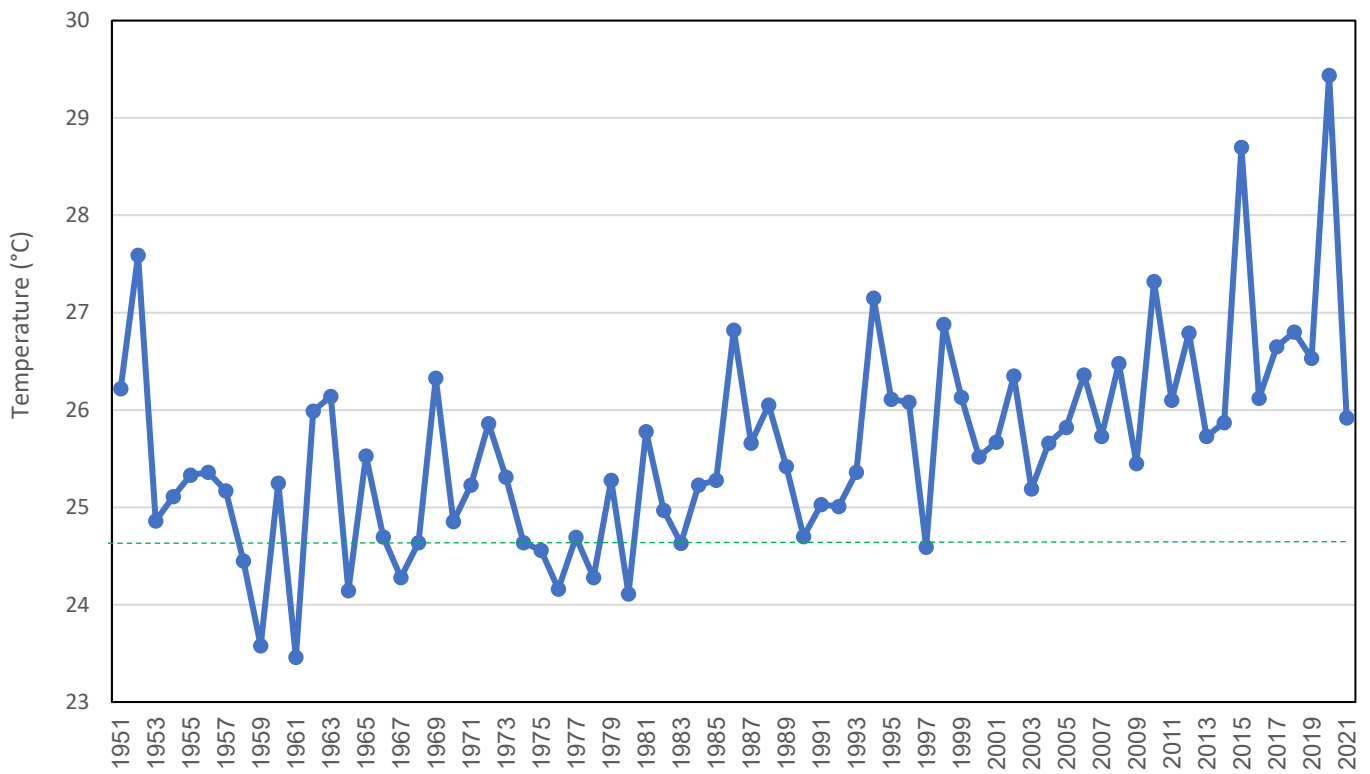
1995-2009 Average      2021      Min      Max

### September 2021 compared to the past

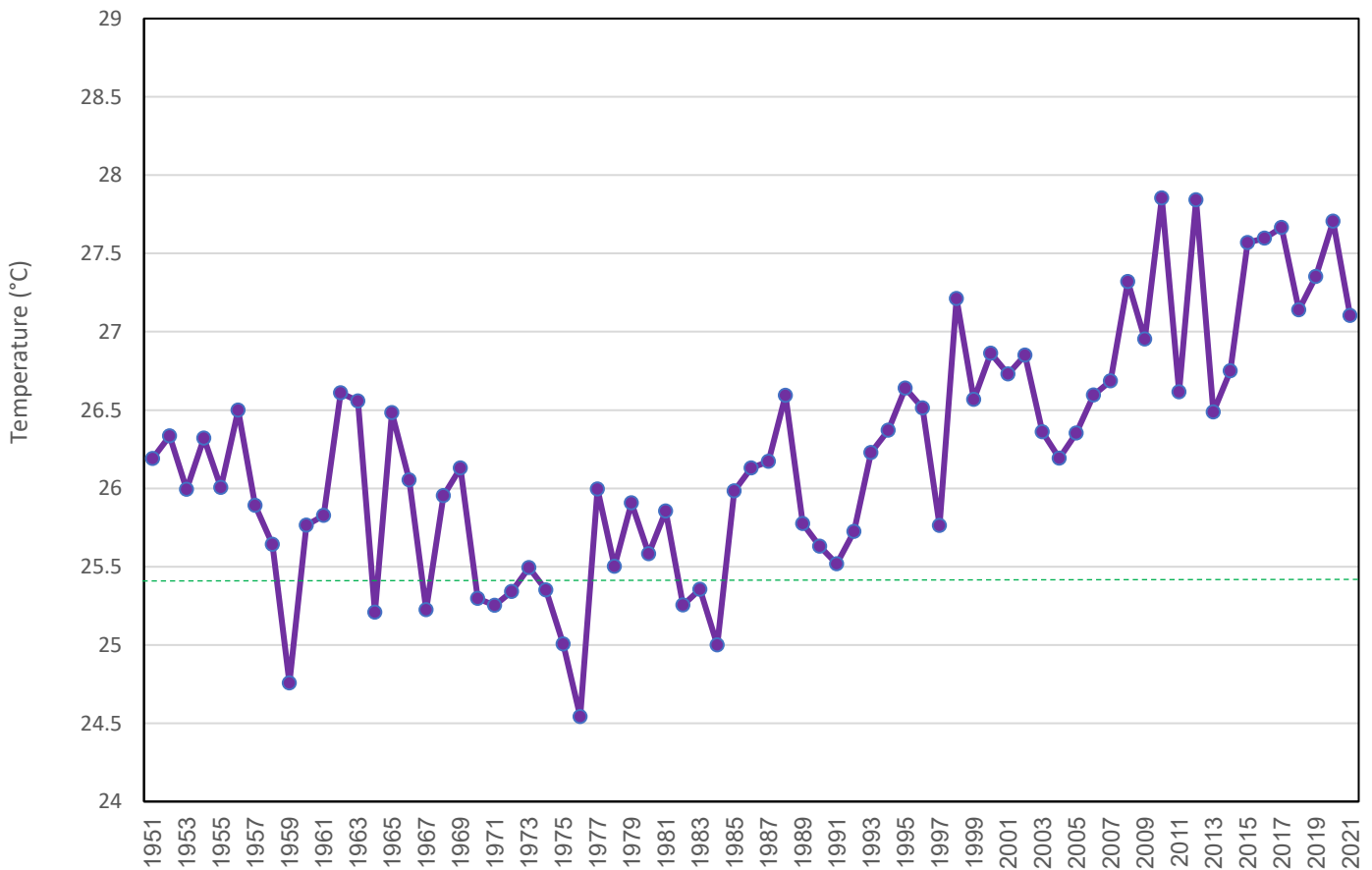
Temperatures in September 2021 were close to average (1995-2009) or slightly higher in the Coastal Plain and northern valleys and in comparison to the past September 2021 is ranked 25 in the series of measurements (nationwide) from the early 1950s. This is the relatively coolest September since 2014 (Figure 3).

### Summer 2021 compared to the past

Summer of 2021, (June to September) was warmer than usual, but it was less warm than most summers in the last decade (in the last decade the summer seasons of 2014, 2013 and 2011 were less warm). Summer 2021 is ranked 11th in the series of measurements from the early 1950s yet 9 out of the 10 warmer summers were all after 2008, with the exception of 1998 (Fig. 4).



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



**Figure 4: Israel average daily temperature (°C) \* in June-September 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.