

SEECOF-7 verification for JJA 2012 over Israel

Yoav Levi and Itsik Carmona, Israel Meteorological Service

2m Temperature

- 1) The SEECOF-7 temperature outlook assigned a probability of 60% for JJA to be above the normal tercile, 25% for normal tercile and 15% for the below normal terciles (Fig. 1).
- 2) The SEECOF-7 forecasted was based mainly on ECMWF and on the 12 GPC's forecasts which indicated on an average a small warm anomaly (Fig. 2).
- 3) Fig. 3 shows 30 years (1981-2010) one month lead (from May) of ECMWF seasonal re-forecasting for JJA - T2m temperature over Israel (5 grid points average). The correlation coefficient between observed and predicted is 0.75. The hit score for the most probable tercile was 57%. This value reaches 70% when forecasting above normal conditions as forecasted for 2012 (table 1).
- 4) The 51 operational ECMWF ensemble for 2012, predicted probability of 4% below the average, 29% around the average and 67% above the average.
- 5) JJA 2012 average temperature as indicated by 4 representative stations across Israel was in the above average tercile. Furthermore, 2012 JJA was the warmest in record of these 4 stations.
- 6) **To conclude**: summer temperature forecast for Israel based on the ECMWF ensemble is skillful. The 2012 forecast for most likely warmer than normal JJA was an absolute success, as all ensemble members around the median were in the above normal category (indicated by the error bar in figure 3) .

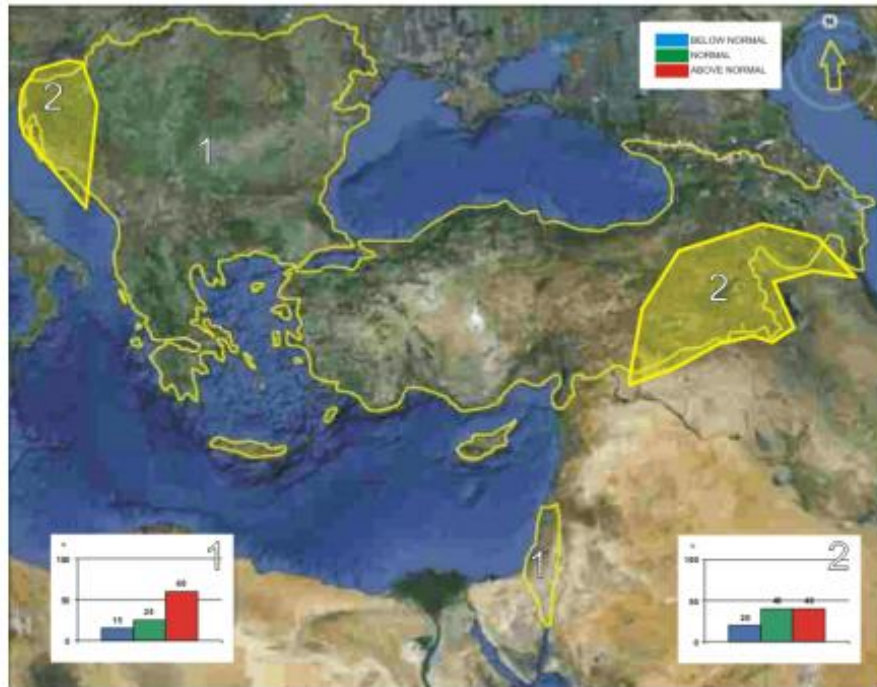


Figure 1. Graphical presentation 2012 summer temperature outlook

Fig. 1: The SECOFF-7 JJA temperature forecast.

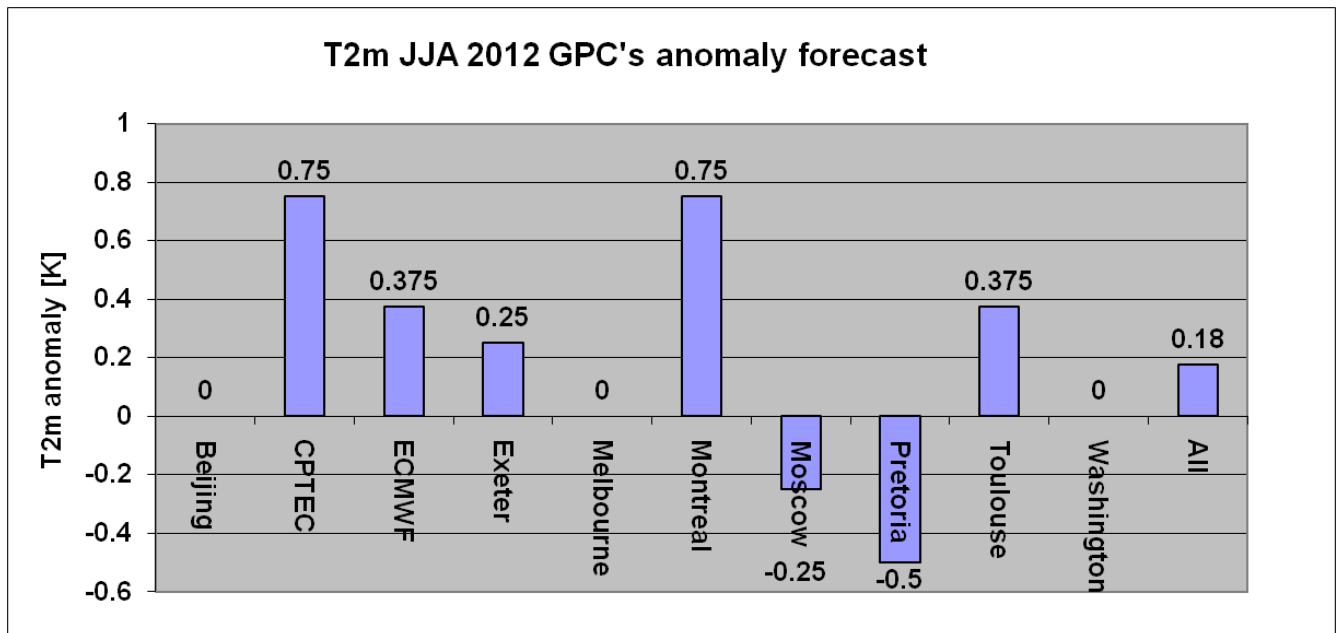


Fig. 2: Temperature anomaly for JJA 2012 over Israel subjectively retrieved from the 12 GPC's presented in <http://www.wmolc.org/>.

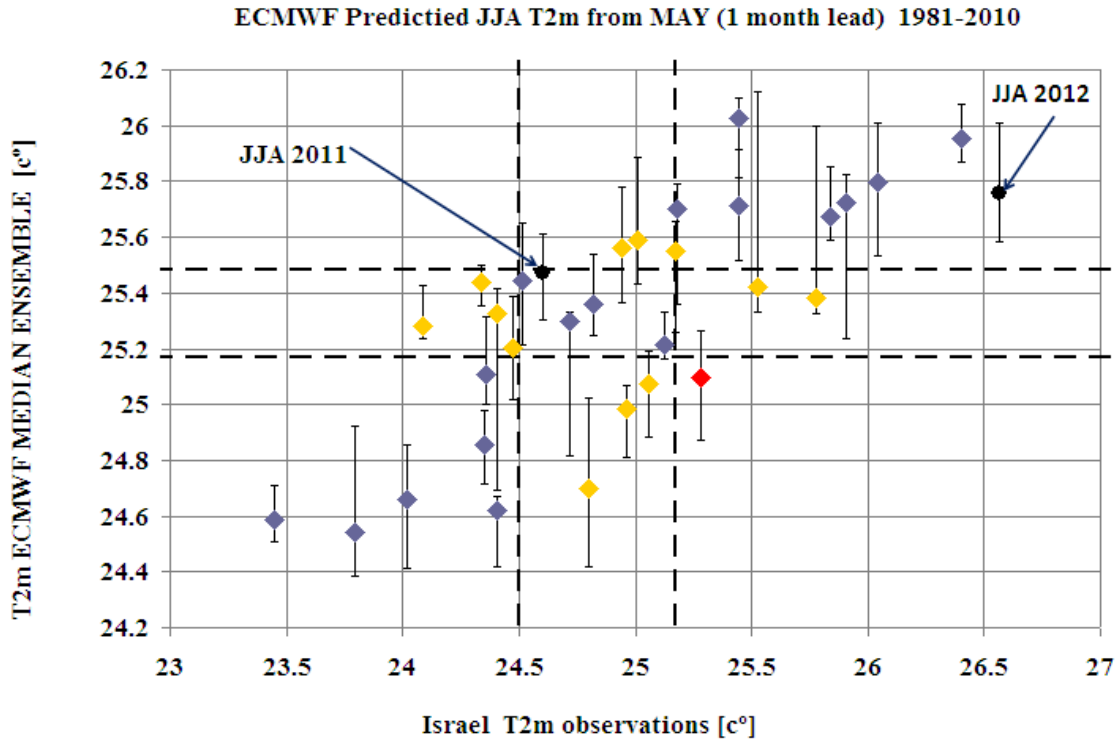


Fig. 3: The re-forecasted ECMWF ensemble median vs. average of 4 representing observation stations across Israel, for 1981-2010. The error lines show the middle 33% probability range of the ECMWF ensemble (5 members in the middle of 15 ensemble members). The dashed lines show the middle tercile thresholds of both the ECMWF and observed temperatures. Blue dots are hits of the most probable tercile. Yellow indicates false categories and red is a bust (2 categories between observed and forecasted). 2011 and 2012 operational system 4 forecast with 51 members is indicated in black.

Table 1: T2m ECMWF hit scores for JJA in Israel forecasted from May (one month ahead), based on 15 Ensemble members re-forecasted for 1981-2010.

Observed / Forecasted	below	Normal	above	Hit Score
True	60%	40%	70%	56.67%
False	30%	60%	30%	40.00%
Bust	10%	-----	0%	3.33%
Number of years	10	10	10	30