Area Forecast Discussion: Beirut and Baghdad
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Forecasters: Chelsea Snide and Brennan Stutsrim

Big Picture Perspective

The last cutoff low that was lingering over the Mediterranean was pushed out the east by a trough, allowing a ridge to form over the eastern Mediterranean. After the initial cutoff low during the short term range, the polar jet stream is predicted to displace farther to the North by the GFS, leaving the weather in Beirut and Baghdad to be controlled more by the zonal subtropical jet stream in northern Africa. The westerly winds throughout the troposphere will keep Beirut in a marine air mass for most of the forecast period, while Baghdad will be mostly protected from the Mediterranean moisture by the high elevation to the west. Beirut will stay near climatological values of temperature throughout the period while Baghdad will have some warmer than normal temperatures.

Extended Range: Day 7-10

Temperatures remain below climatology along the eastern coast of the Mediterranean as a cut-off low continues to dominate the region. As this upper-level system propagates westward it advects cooler temperatures into the Middle East. Uncertainty remains high in the forecast as members of the GEFS ensemble diverge from each other. The GFS and ECMWF operational models have strong disagreement between the large scale pattern that dominates this forecast period. The ECMWF is suggesting a deep trough allowing for strong CAA to dominate the region, while the GFS suggests slight ridging. This disagreement leads to large differences in precipitation and temperature forecasts.

Medium Range: Day 4-6

A cut-off low forming from cyclonic wave breaking remains stationary over the Eastern Mediterranean region saturating the area with low 500-hPa height anomalies and cold 850-hPa temperature anomalies. At the surface a cyclone meanders over the Mediterranean keeping the coastal regions in the east under the influence of precipitation. An omega block that builds into central Europe at the start of the period due to anticyclonic wave breaking associated with the ridge building. The omega block is causing surface cyclones to remain in the Mediterranean causing the Middle East to remain dry due to the influence of a high pressure system. The 3-7 day average of the

GEFS ensemble reflects cold temperature anomalies along the coastal countries with some confidence.

Short Range: Day 0-3

A very high amplitude trough digging through the Mediterranean will likely push the current high farther to the east by the end of the period, superimposing the polar jet with the subtropical jet in northern Africa. The trough will likely be cut off from the polar jet by the end of the period leaving anonymously low geopotential heights at 500 mb and temperatures at 850 mb in the Eastern Mediterranean, resulting in a strong extratropical cyclone. The steep lapse rates associated with the warm sector of the cyclone coupled with the cyclonic vorticity advection will produce precipitation in the second half of the period covering much of the eastern Mediterranean, including Beirut. Baghdad will remain under an anticyclone with slightly warmer than normal temperatures for the majority of the period before receiving less than half an inch of rain will the warm frontal passage.

Probabilistic Forecast

Beirut, Lebanon:
Day 0-3:
Max Temp: 14ºC (10th), 15ºC (50th), 17ºC (90th)
Min Temp: 11ºC (10th), 13ºC (50th), 14ºC (90th)
Precip: 5 mm (10th), 10 mm (50th), 15 mm (90th)

Day 4-6:
Max Temp: 13ºC (10th), 14ºC (50th), 15ºC (90th)
Min Temp: 11ºC (10th), 12ºC (50th), 13ºC (90th)
Precip: 5 mm (10th), 7 mm (50th), 10 mm (90th)

Day 7-10:
Max Temp: 15ºC (10th), 16ºC (50th), 17ºC (90th)
Min Temp: 10ºC (10th), 12ºC (50th), 13ºC (90th)
Precip: 0 mm (10th), 1 mm (50th), 2 mm (90th)

Baghdad, Iraq:
Day 0-3:
Max Temp: 16ºC (10th), 17ºC (50th), 19ºC (90th)
Min Temp: 6ºC (10th), 7ºC (50th), 8ºC (90th)

Precip: 0 mm (10th), 3 mm (50th), 5 mm (90th)

Day 4-6:

Max Temp: 16ºC (10th), 17ºC (50th), 18ºC (90th)
Min Temp: 5ºC (10th), 7ºC (50th), 8ºC (90th)
Precip: 0 mm (10th), 1 mm (50th), 2 mm (90th)

Day 7-10:

Max Temp: 18ºC (10th), 19ºC (50th), 20ºC (90th)
Min Temp: 8ºC (10th), 9ºC (50th), 10ºC (90th)
Precip: 0 mm (10th), 1 mm (50th), 2 mm (90th)