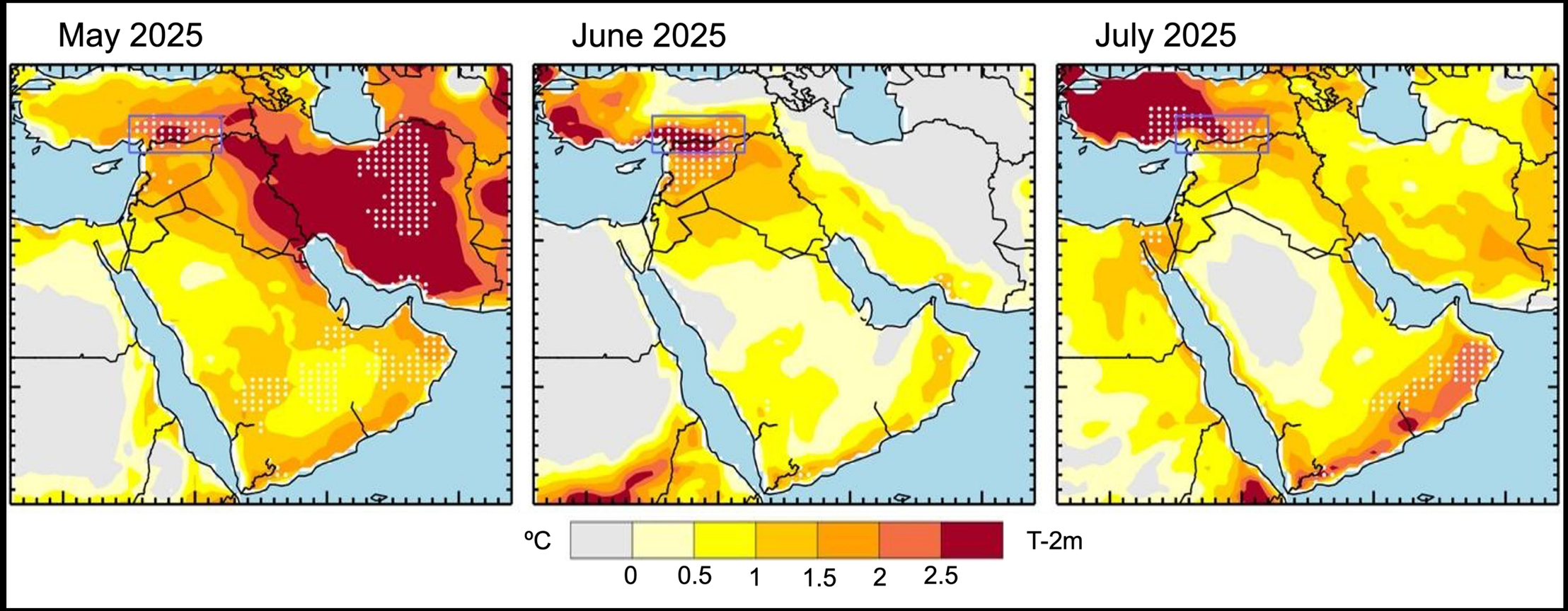
2025 Compound Weather Extremes in the Middle East

Summer 2025 stands out as the latest extreme weather episode in the Middle East. Compound events – defined as a summer season (May–July) with temperatures above the 95th percentile, preceded by rainfall below the 5th percentile during the rainy season (January–May) – have become increasingly severe and frequent over the past decade, with 2021 and 2025 standing out as the only years marked by simultaneous precipitation anomalies below one standard deviation and temperature anomalies above one standard deviation. The compounding effects of hot and dry conditions triggered crises in water and power supply and fueled widespread wildfires, as this region saw temperatures surpassing 50.5ºC for the first time, measured in southeastern Türkiye, while Tehran faced frequent water outages and power blackouts.



Seasonal (May to July) temperature anomaly of 2025 (shading), relative to 1981-2025 using MERRA-2 T-2m data. White dots show regions where May to July temperature is greater than the 95th percentile and seasonal precipitation (January to May) GPCP monthly product is less than the 5th percentile in 2025.