Supplement

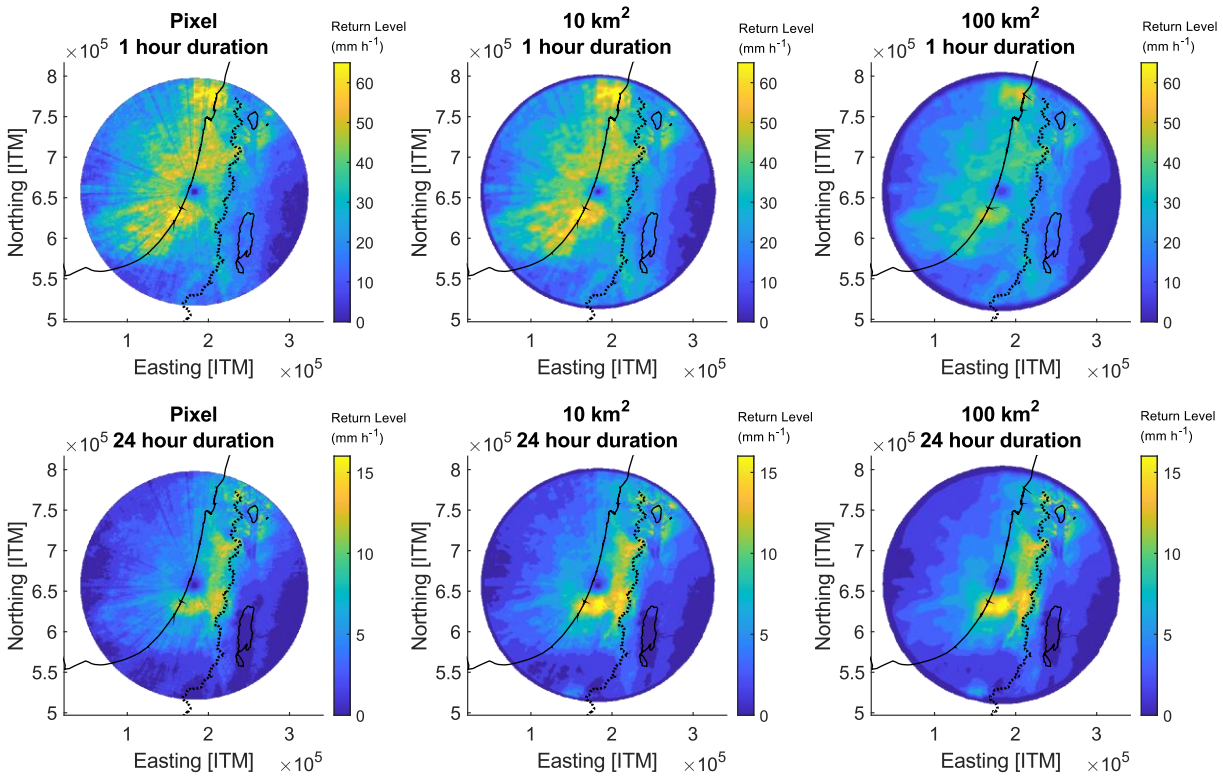

Figure S1: Precipitation intensity return levels for varying areas and durations for 100-year return periods. The coastline, the Sea of Galilee in the north, and the Dead Sea in the south are marked by the solid black line. The surface water divide is marked by the black dotted line.

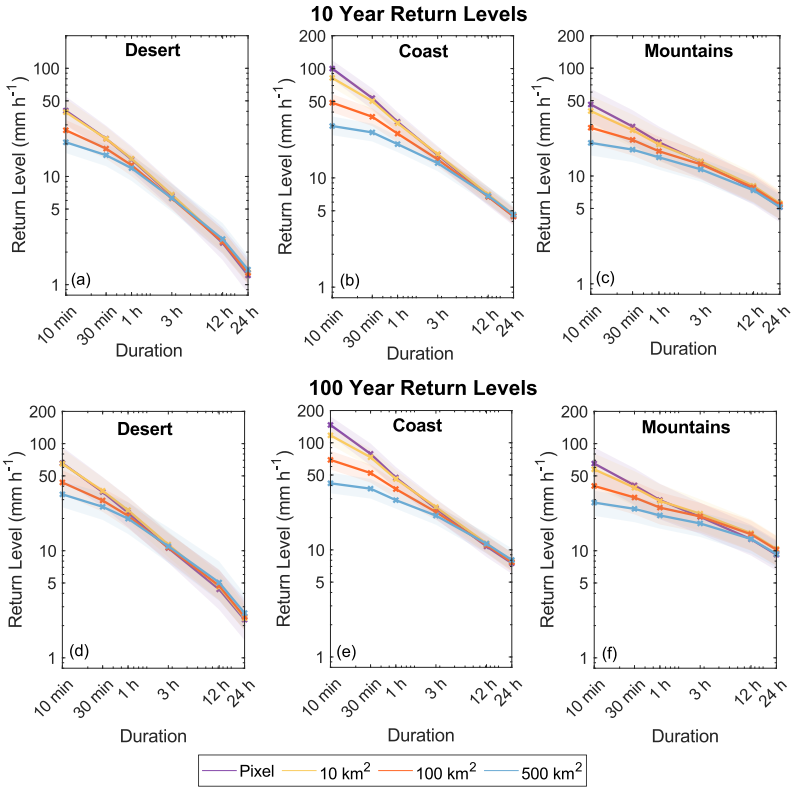

Figure S2. IDAF curves estimated for the desert, coast, and mountains for 10- (a-c) and 100-year (d-f) return periods. Shaded areas represent the 90 % confidence interval from 100 bootstrap samples. The locations of the analysis sites are displayed in Fig. 1.

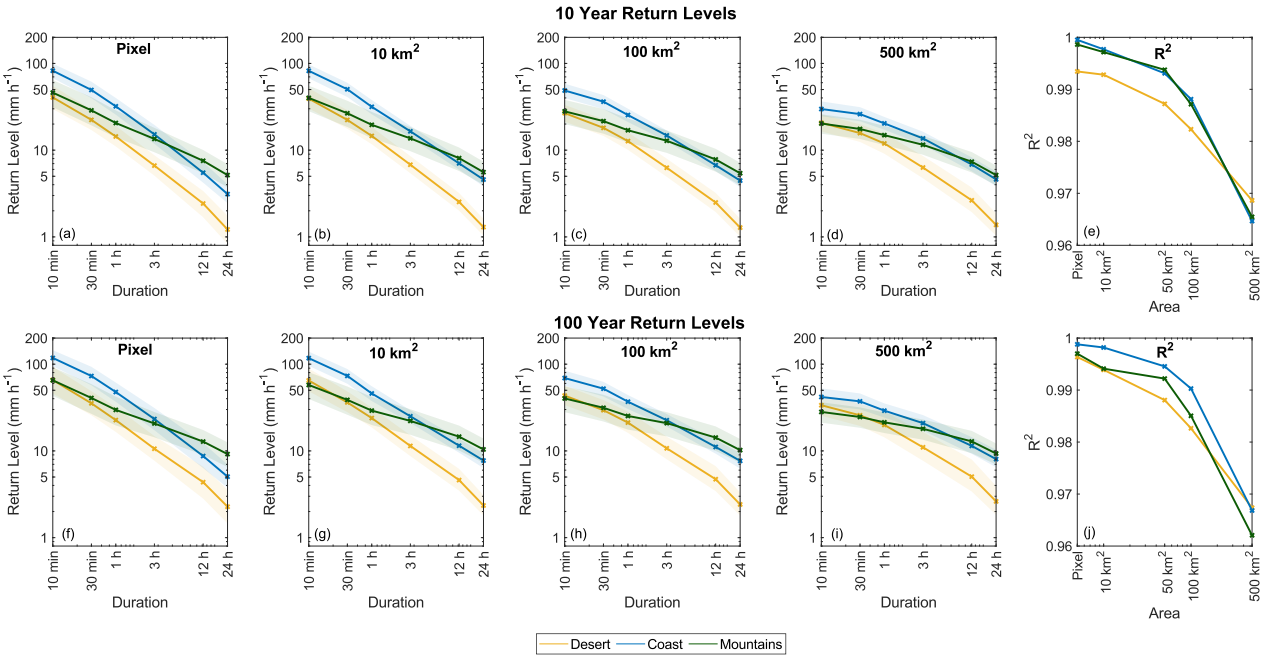

Figure S3. (a-d, f-i) IDAF curves estimated for different area sizes for 10-year (a–d) and 100-year (f–i) return periods. Shaded areas represent the 90 % confidence interval from 100 bootstrap samples. (e, j) R^2 between the log-transformed intensity and duration values presented in (a–d & f–i) for varying area sizes. The locations of the three analysis sites are displayed in Fig. 1.

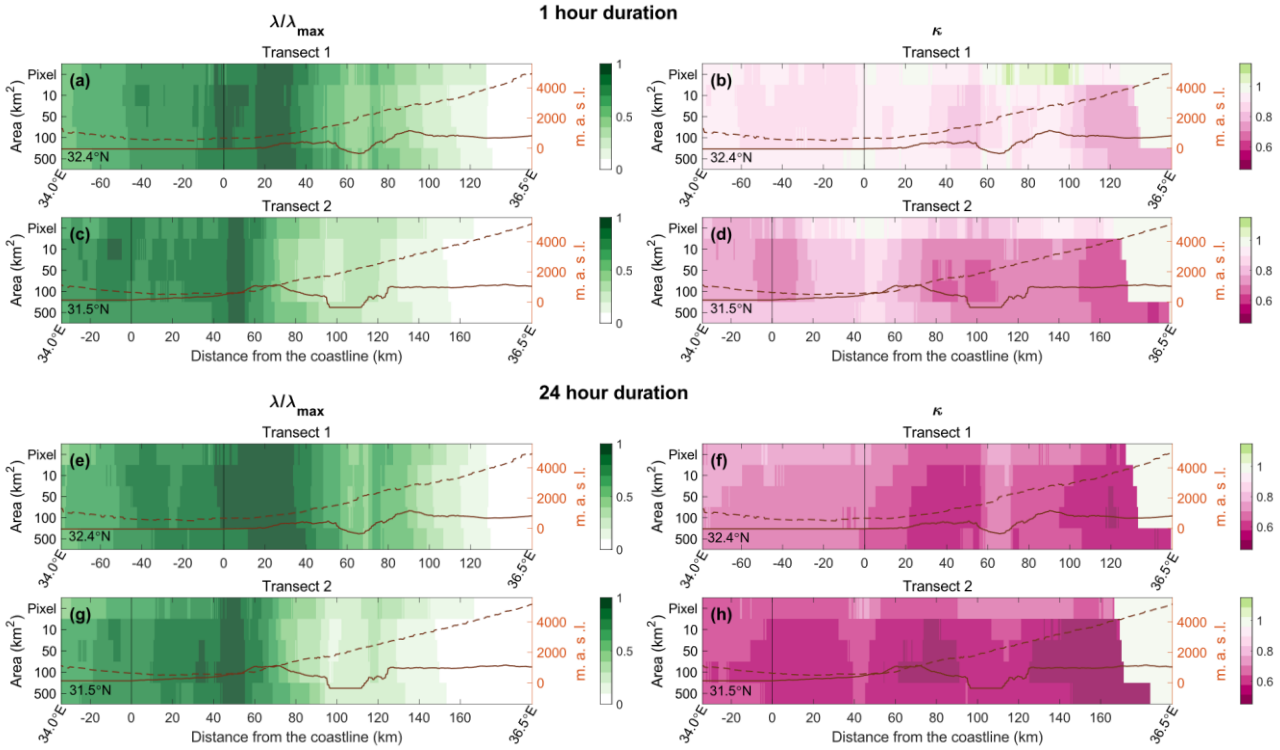

Figure S4: Longitudinal variations in scale (a, c, e, g) and shape (b, d, f, h) parameters along the two transects shown in Fig. 1 as a function of coastline proximity (x-axis) and area size (y-axis). Results are shown for 1 h and 24 h durations. The transects are obtained by computing an average over the 10 km region surrounding the two latitudes. The scale parameter is normalised over the maximum value along the transect to produce comparable values. Solid lines represent the orographic profile (see right-hand y-axis). Dashed lines represent the sampling height of the lowest non-blocked radar beam (see right-hand y-axis).