

Supplementary materials to *Storm-Type
Influence on Spatial Rainfall–Surge
Dependence and Compound Flood
Boundary Condition Generation in a
Coastal Watershed*

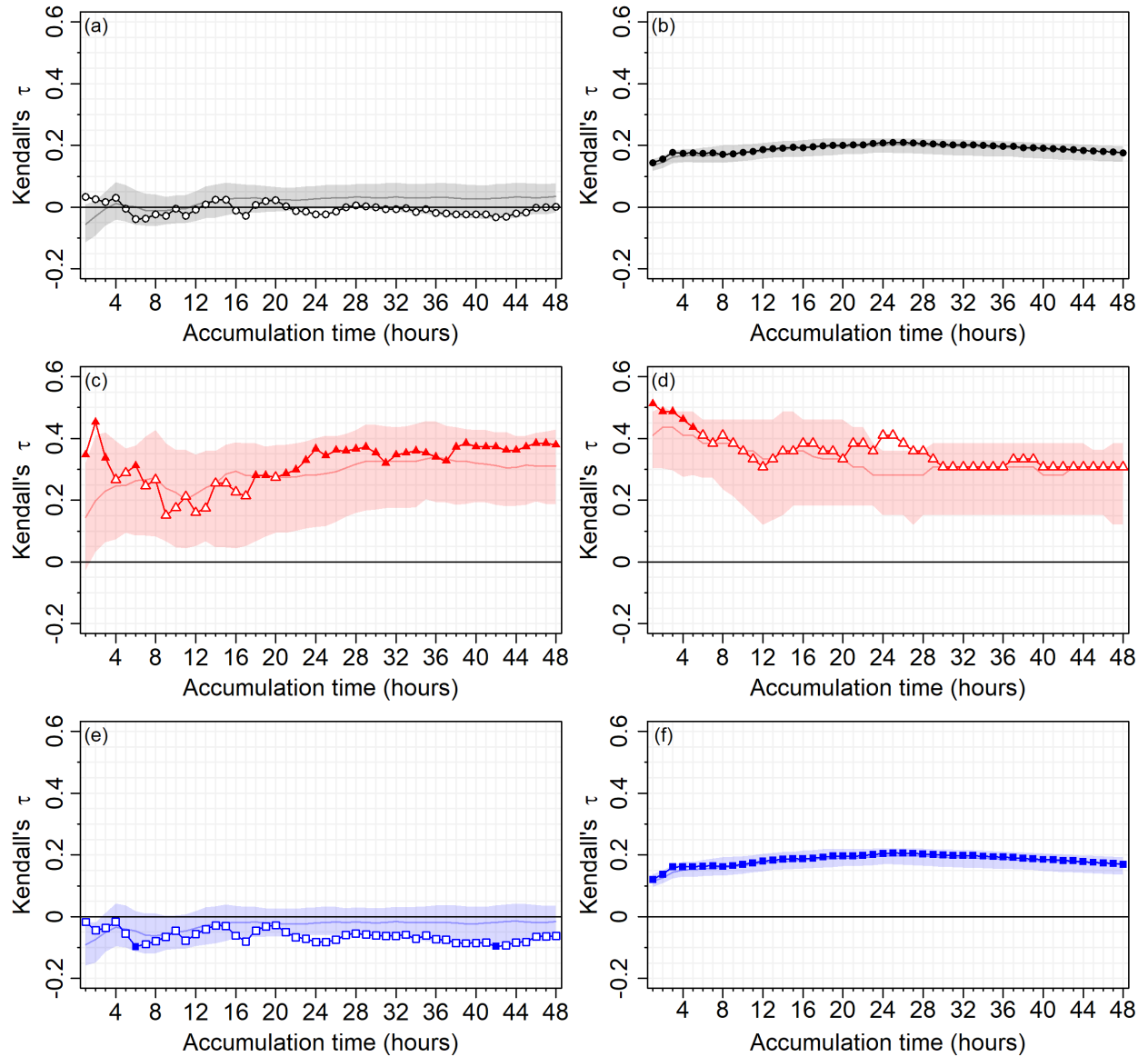


Figure S1: Variation in Kendall's τ between rainfall and NTR with accumulation time. Shaded areas indicate the 5th–95th percentile range and colored lines the median of correlations across individual location pairs, for samples conditioned on rainfall volume (left column) and NTR peak (right column), for all events (a, b), TC events (c, d), and non-TC events (e, f). Symbols denote basin-average estimates, with filled symbols indicating statistically significant correlations at the 5% significance level.

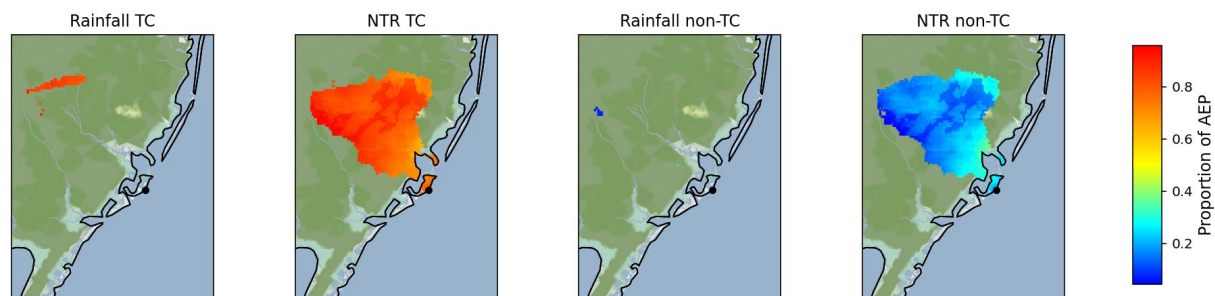


Figure S2: Proportion of AEP contributed by model fit to each conditional sample.

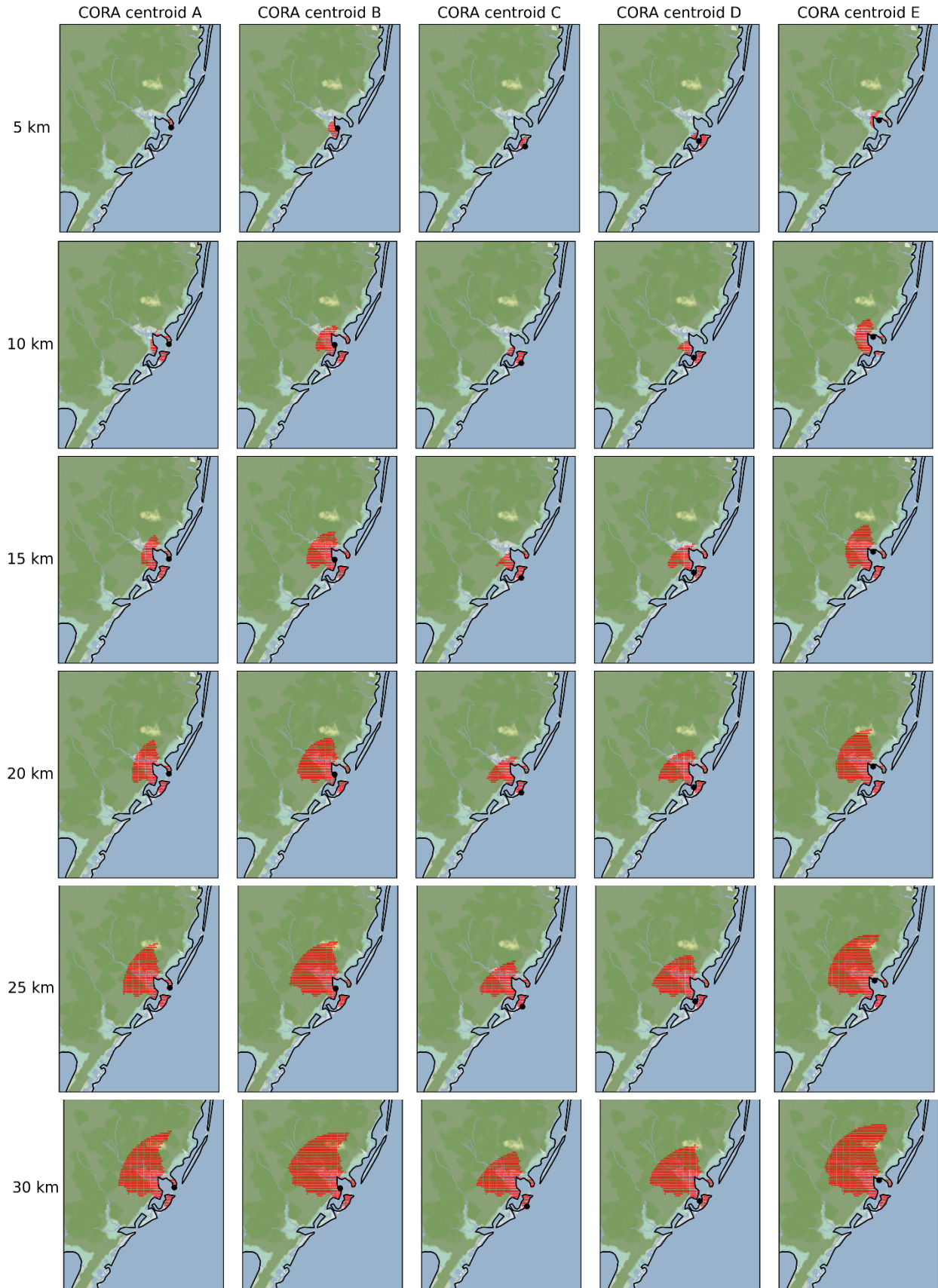


Figure S3: AORC grid points falling within each buffer distance of the five CORA centroids.

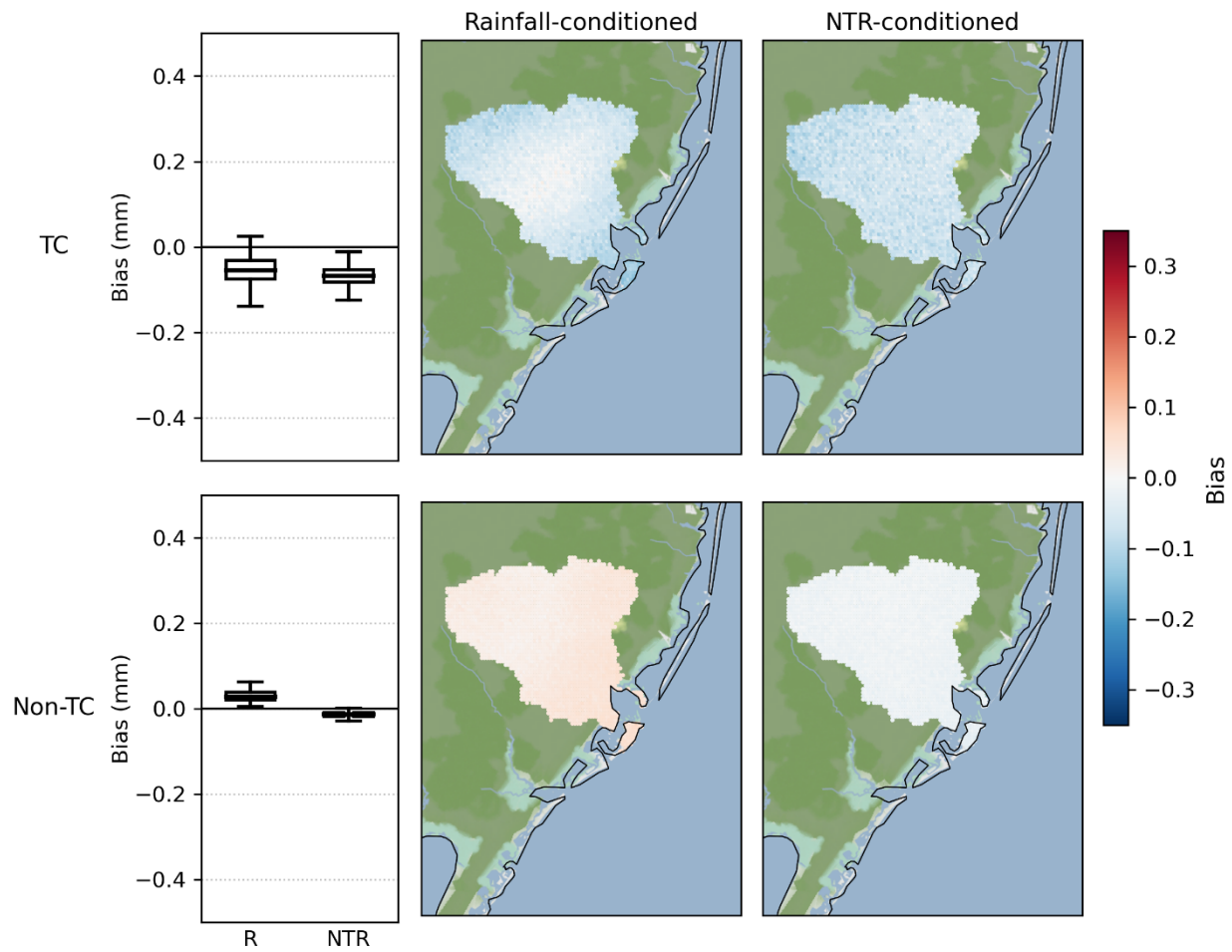


Figure S4: Bias in Kendall's τ , calculated as the correlation between rainfall and NTR in the synthetic events minus the correlation between basin-averaged rainfall and NTR, for each storm type and conditioning variable. Box plots (left) show the distribution of bias across all AORC grid points in the catchment; maps (right) show the corresponding spatial distribution of bias at each grid point.

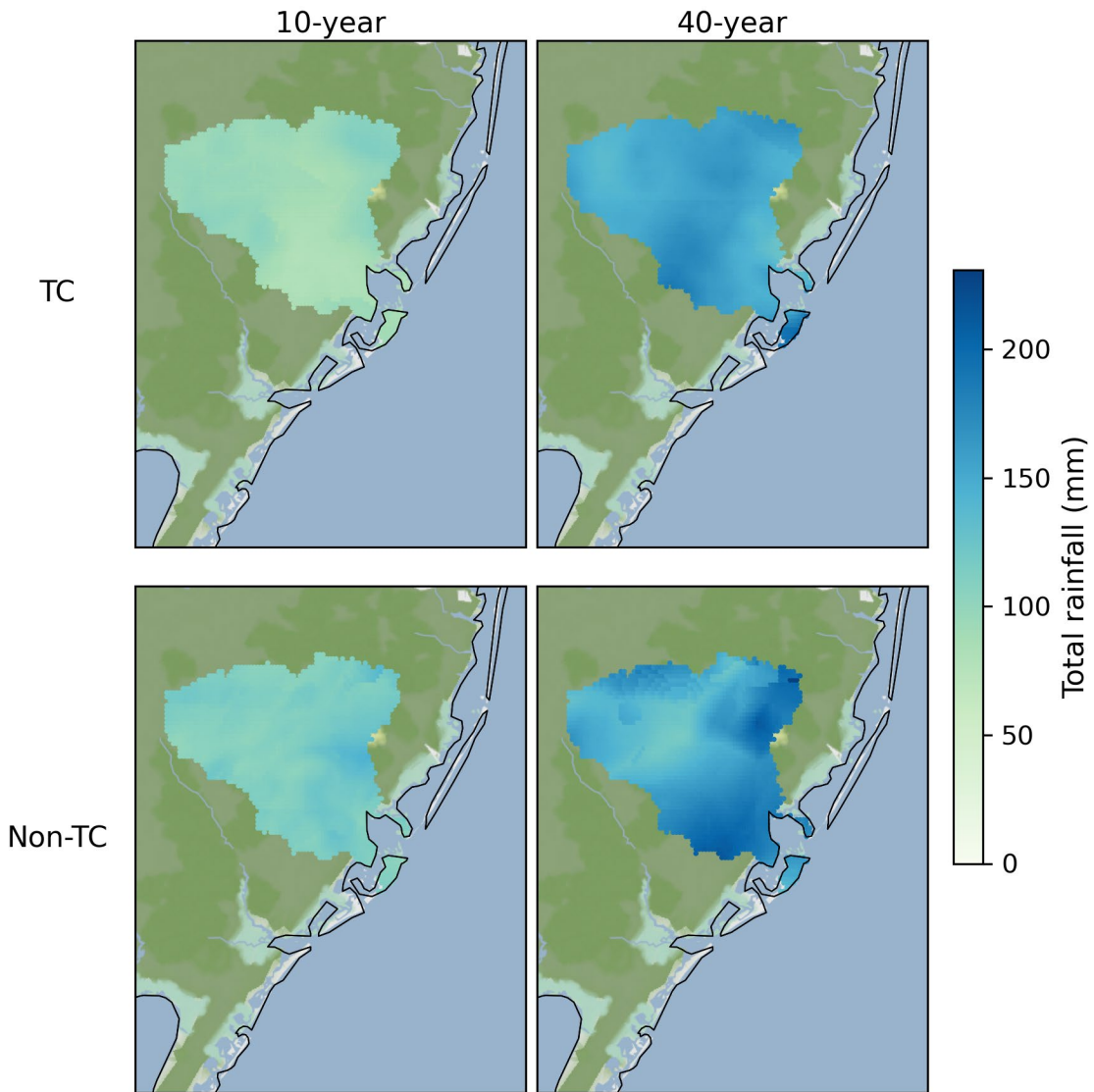


Figure S5: Spatial distribution of total event rainfall at the 10-year and 40-year return periods, for TC and non-TC events.

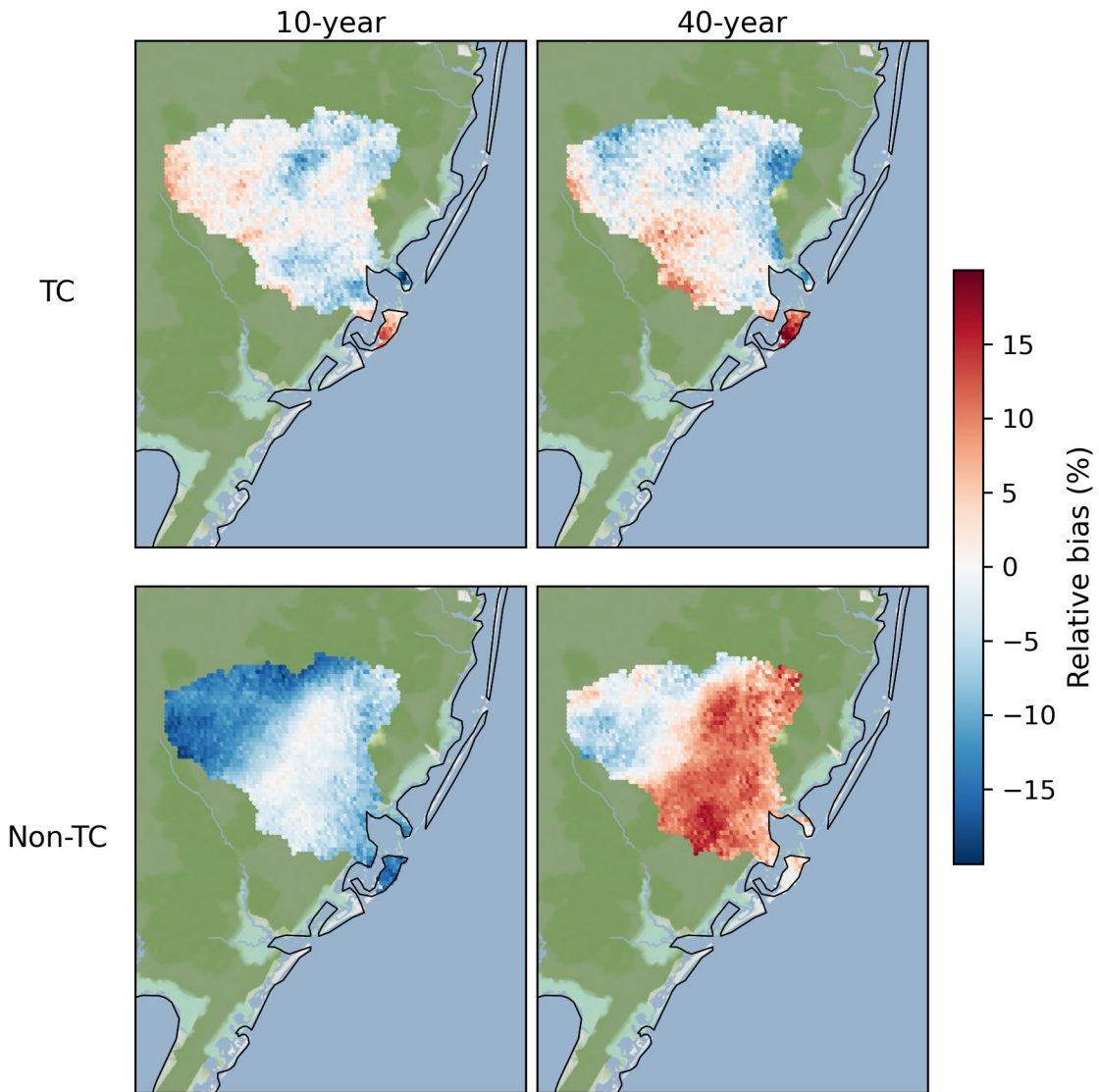


Figure S6: Spatial distribution of rainfall bias, expressed as a proportion of total event rainfall, at the 10-year and 40-year return periods, for TC and non-TC events.