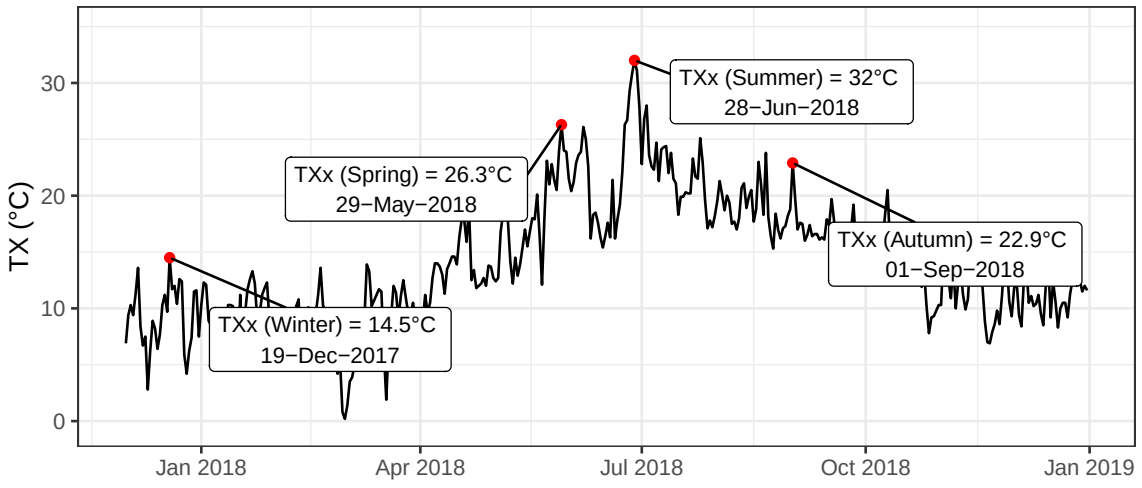
Warmest Day (TXx)

Key Messages

- The hottest days of the year appear to be getting hotter, but with more uncertainty than other similar indices (TNn, TNx and TXn).

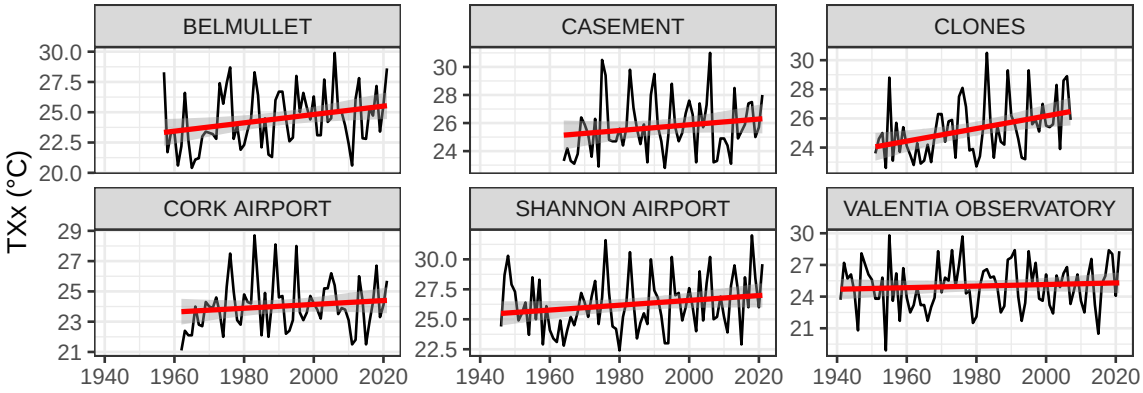
Description

- Daily maximum temperature (**TX**), based on 09UTC-09UTC observations are used to calculate the index.
- The **TXx** index represents hottest day during the period of interest (year, season or month), i.e. the maximum value of daily maximum temperature.
- Illustrated example below for seasonal values of **TXx** (red dots) in 2018 at Shannon Airport. The annual **TXx** value for 2018 at Shannon Airport was 32°C.



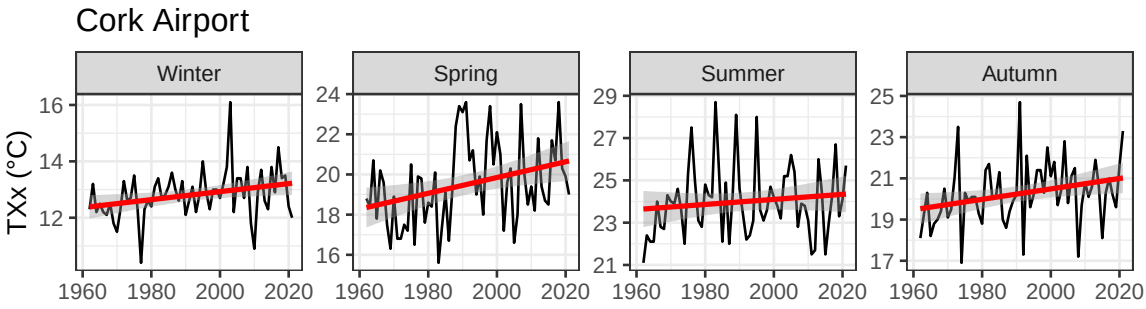
Trends

- There is a increasing trend in the **TXx** at the majority of Met Éireann's synoptic weather stations, as shown in the graphs below.
- The significance of these trends are not as strong as those seen for the other indices for temperature extremes (**TNn**, **TNx** and **TXn**).
- The 30-year average value of **TXx** has increased by an average of 0.5°C, between 1961-1990 and 1991-2020, at the six stations in the graphs below.
- These are in agreement with global trends of increasing warm extremes, [Dunn et al., 2020].



Seasonality

- Annual **TXx** values typically occur in and around summer (June, July & August).
- When separated seasonally, increases in **TXx** are seen for the other seasons, shown below at Cork Airport. Often the signal is stronger for the non-summer seasons.



Data Access

Data for this index can be downloaded through the web-page below (or the QR code in the header):

- https://www.met.ie/climate/climate-change-indices-etccdi/

For further information contact Met Éireann Climate Enquiries: enquiries@met.ie

References

Robert JH Dunn et al. Development of an updated global land in situ-based data set of temperature and precipitation extremes: HadEX3. *Journal of Geophysical Research: Atmospheres*, 125(16):e2019JD032263, 2020. doi: https://doi.org/10.1029/2019JD032263.