



R10mm

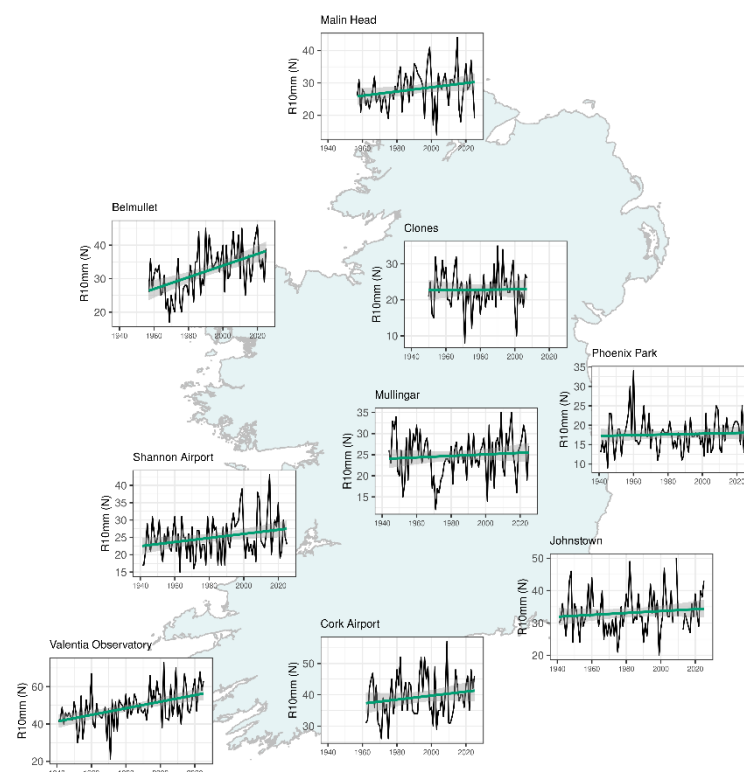
KEY MESSAGE

- Some stations (particularly in the west) are observing an increase in the number of days exceeding 10mm of rain, but many stations do not have significant long-term trends.

DEFINITION

- Daily precipitation (R), based on 09UTC - 09UTC observations, are used to calculate this index.
- The **R10mm** index is calculated by counting the number of times the daily precipitation exceeds 10mm ($R \geq 10\text{mm}$) during the period of interest (year, season or month).

TRENDS



- The graphs above indicate that **R10mm** is primarily increasing at western coastal locations.
- Stations further east tend to exhibit less coherent trends.
- Ongoing research into data rescue and homogenisation indicate that while the majority of stations are exhibiting an increasing trend in **R10mm**, a limited number of these have been found to be statistically significant, (Ryan, et al. 2022).

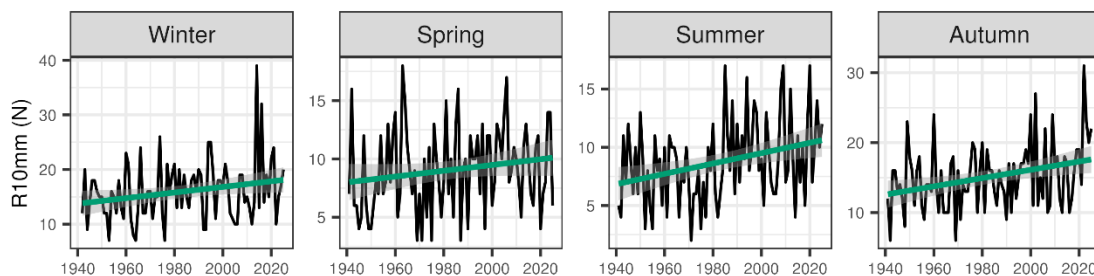


- Global analysis of threshold-based rainfall indices has found pockets of the globe where significant increases are occurring, such as eastern Europe or central USA, (Dunn, et al. 2020).

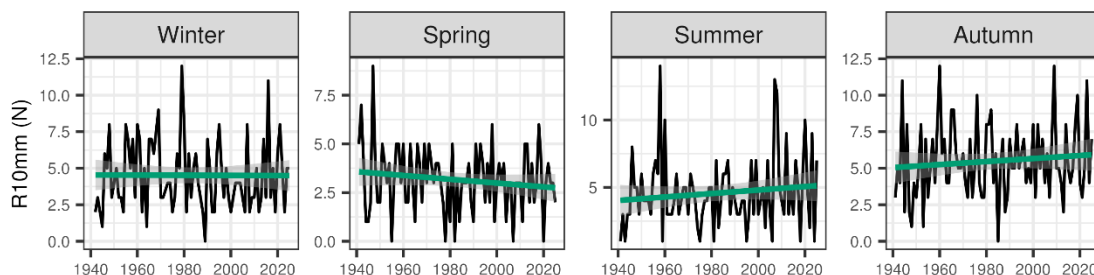
SEASONALITY

- The moderate increase in **R10mm** at western stations is present for most seasons, shown below for Valentia Observatory, though trends are less certain than for annual values.
- The lack of a signal in the east is evident for all seasons, shown below for Mullingar.

Valentia Observatory



Phoenix Park



DATA ACCESS

Data for this index can be downloaded through the webpage 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

Dunn, Robert JH, Lisa V Alexander, Markus G Donat, Xuebin Zhang, Margot Bador, Nicholas Herold, Tanya and Allan, Rob Lippmann, Enric Aguilar, Abdoul Aziz Barry, and others. 2020. "Development of an updated global land in situ-based data set of temperature and precipitation extremes: HadEX3." *Journal of Geophysical Research: Atmospheres* e2019JD032263. doi:<https://doi.org/10.1029/2019JD032263>.

Ryan, Ciara, Mary Curley, Séamus Walsh, and Conor Murphy. 2022. "Long-term trends in extreme precipitation indices in Ireland." *International Journal of Climatology* (Wiley Online Library) 42 (7): 4040-4061. doi:10.1002/joc.7475.