



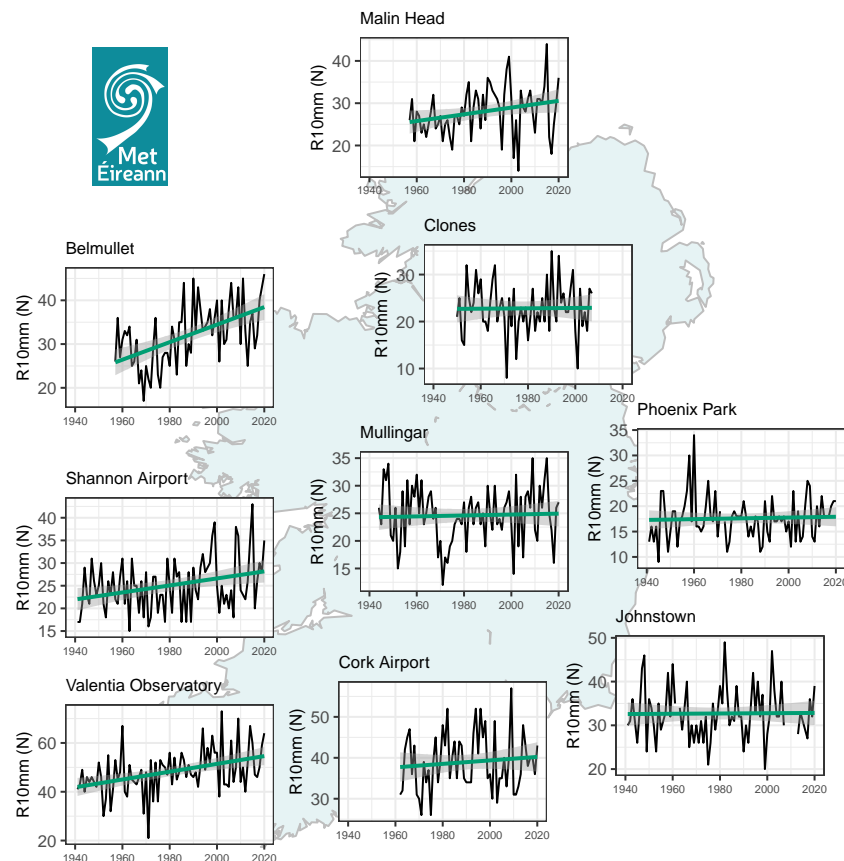
## R10mm

### 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)





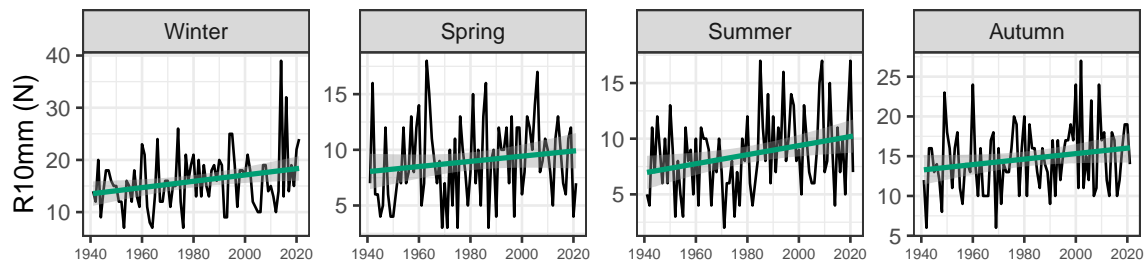
## Trends

- 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., 2021].
- Global analysis of threshold-based rainfall indices (including **R10mm**) have found pockets of the globe where significant increases are occurring, such as eastern Europe or central USA, [Dunn et al., 2020].

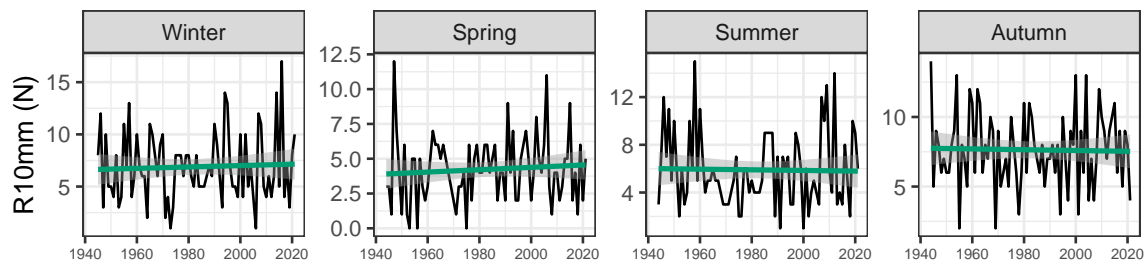
## Seasonality

- 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



### Mullingar



## 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](mailto: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>.

Ciara Ryan et al. Long-term trends in extreme precipitation indices in Ireland. *International Journal of Climatology*, 2021. doi: <https://doi.org/10.1002/joc.7475>.