



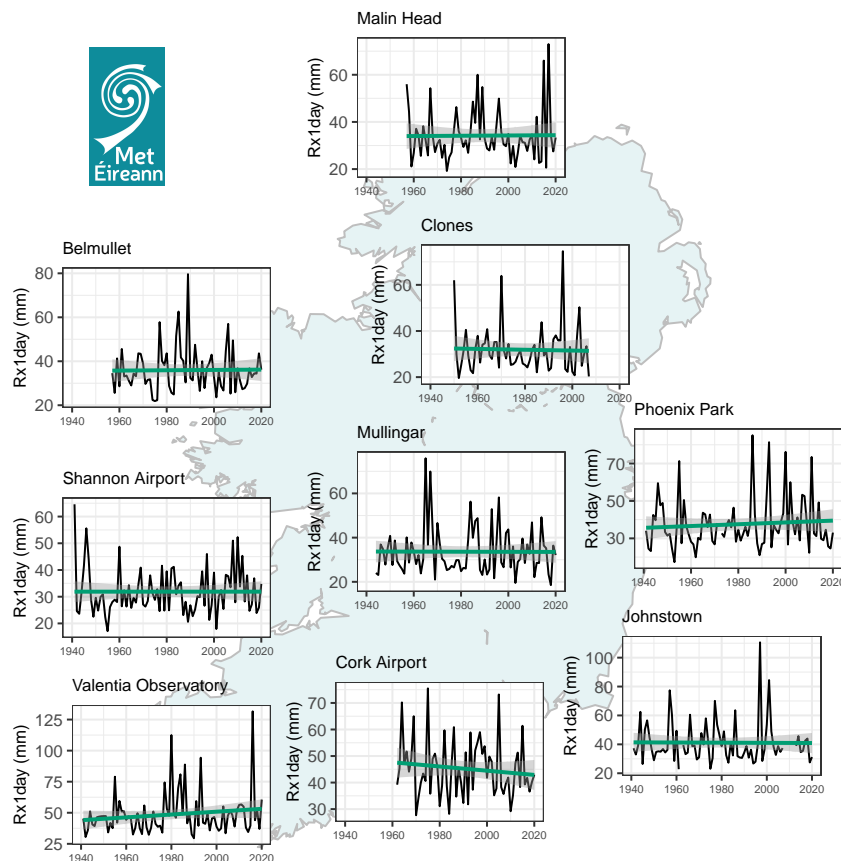
Wettest Day (Rx1day)

Key Message

- There is a large degree of uncertainty in trends of the heaviest rainfall days at most stations, with no significant long-term trends.

Definition

- Daily precipitation (**R**), based on 09UTC - 09UTC observations, are used to calculate this index.
- The **Rx1day** index is calculated by finding the maximum daily precipitation (in mm) during the period of interest (year, season or month).



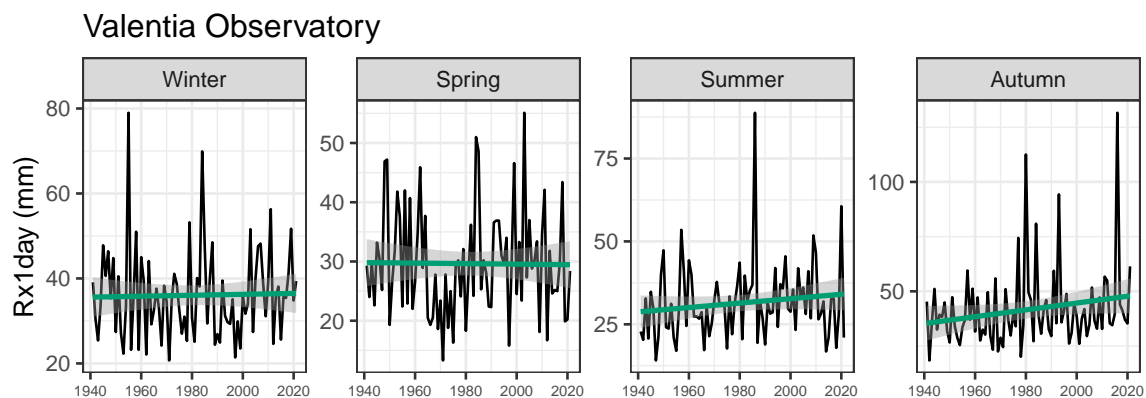


Trends

- There is no clear indication of an increase or decrease in the **Rx1day** index, see graphs above, with large year-to-year variability.
- Ongoing research into data rescue and homogenisation found that, while the majority of stations are exhibiting some form of an increasing trend in **Rx1day**, just one station was found to be statistically significant, [Ryan et al., 2021].
- Global analysis of heavy rainfall extremes has found pockets of the globe where significant increases are occurring, such as eastern Europe or central USA, [Dunn et al., 2020].

Seasonality

- Seasonally separated **Rx1day**, shown below for Valentia Observatory, indicates a small increase for autumn but this was not found to be statistically significant.



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>.
- 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>.