FROST DAYS (FD)

KEY MESSAGE

- Frost days (days with sub-zero minimum temperatures) are happening less often than in the past at almost all weather stations.

DEFINITION

- Daily minimum temperature (TN), based on 09UTC - 09UTC observations, are used to calculate this index.
- The Frost Days (FD) index is calculated by counting the number of days where the daily minimum temperature was less than 0°C (TN < 0°C) during the period of interest (year, season or month).

TRENDS

- Frost days are reducing at the majority of stations, shown in the table and graphs below.
- Frost days have reduced by an average of 29.8%, between 1961-1990 and 1991-2020, at the stations shown in Table 1.
- The one notable exception is 2010 where, for example, 93 frost days were observed at Oak Park in Carlow.
- This reduction in **FD** is also being seen for global trends of this index, (Dunn, et al. 2020).

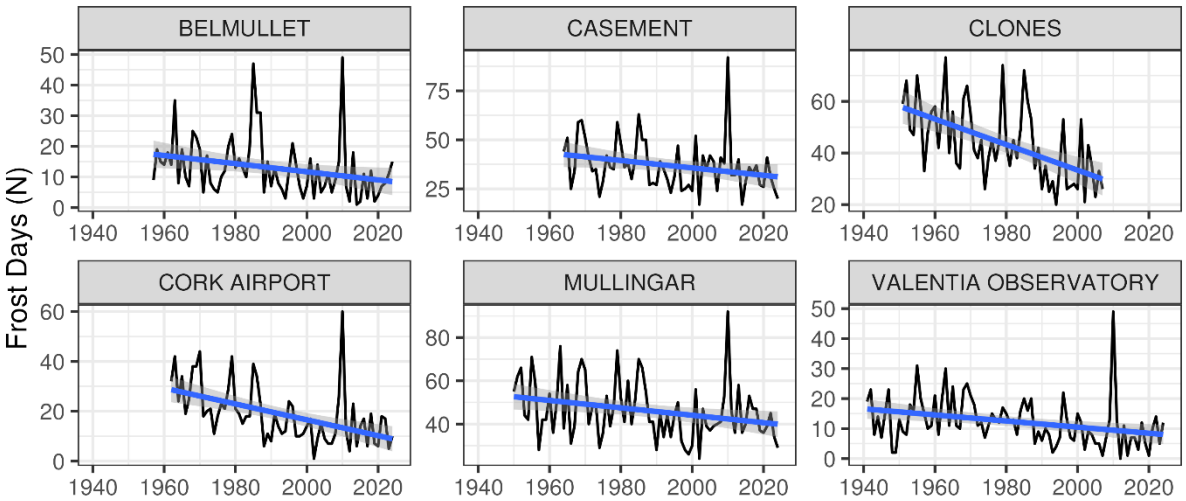
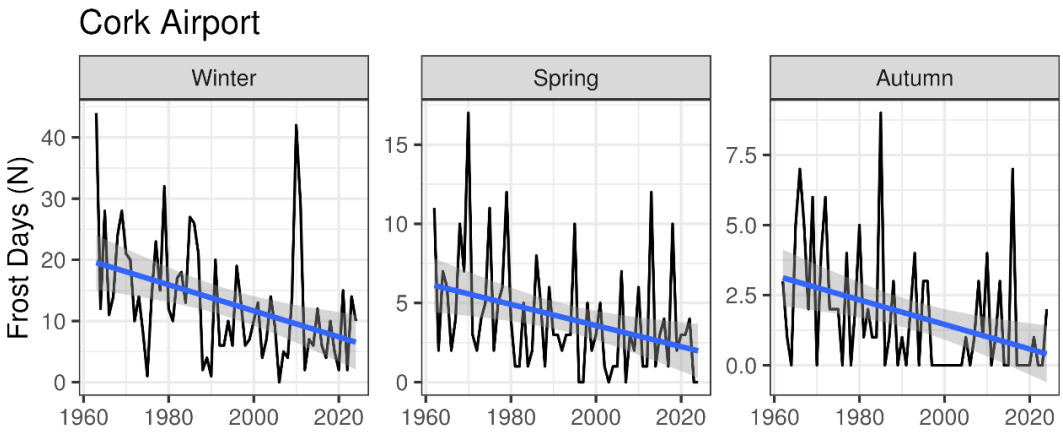


Table 1: Mean number of Frost Days (FD) during thirty-year periods at 9 stations.

Station	1961-1990	1991-2020
Belmullet	16.4	9.7
Casement	40.5	34.5
Claremorris	45.1	34.7
Cork Airport	24.5	14.1
Johnstown	19.7	12.5
Malin Head	10.4	6.1
Mullingar	49.6	42.4
Oak Park	44.0	37.5
Valentia Observatory	14.6	8.9

SEASONALITY

- Frost days have been very rarely observed in Ireland during the summer months.
- The number of frost days have generally reduced during all other seasons, shown below for Cork Airport.



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.