

Some curiosities from the RBGE Inverleith weather station:

Data analyses from 1 January 1976 to 31 December 2014.

Temperature:

Days when air maximum is below 0C (32F)	0.4%
Days when air minimum is below 0C	13.1%
Days when grass minimum is below 0C	35.9%
Days when air maximum is above 10C (50F)	68.8%
Days when air minimum is above 10C	24.0%
Days when air maximum is above 20C (68F)	8.7%
Days when air minimum is above 20C	0.4%
Longest period of frost	5 days in December 2010

Precipitation:

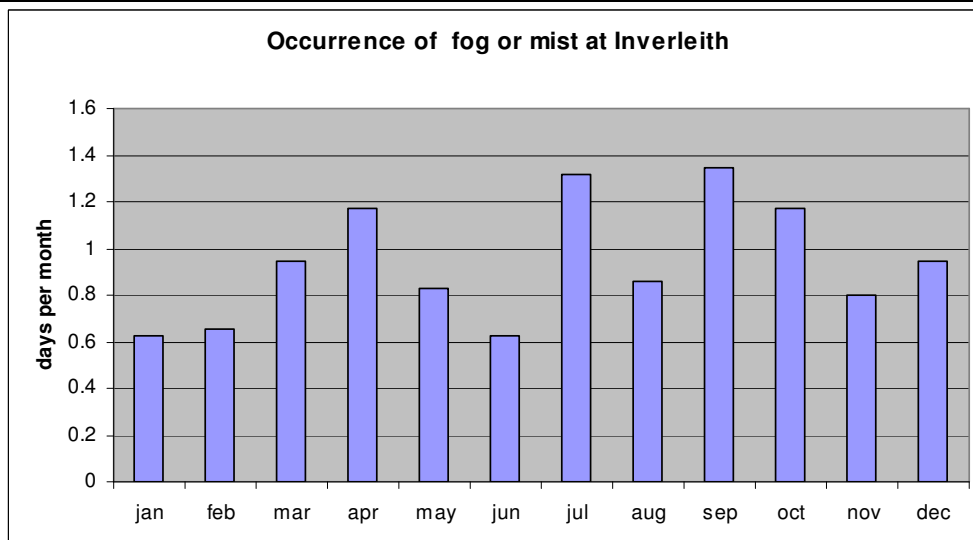
Days with no rain	41.1%
Days with 0.2mm or more	51.2%
Days with 1mm or more	36.0%
Days with 5mm or more	14.0%
Days with 10mm or more	6.3%
Days with snow	2.4%
Deepest snow cover	22cm in December 2010
Longest snow cover	21 days in January 1984
Longest "snow free" period	1057 days 3/2006 – 2/2009
Longest period without rain	19 days in October 1997

Sunshine:

Days with no sunshine	17.0%
Days with 0.2hrs or more	81.1%
Days with 1hr or more	69.9%
Days with 5hrs or more	36.6%
Days with 10hrs or more	9.6%
Longest periods without sunshine	8 days in January 1987 and November 1993

Other observations:

Fog or mist at or near time of observation	3.2%
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Frost at RBGE's Inverleith garden

Despite its northerly latitude (almost 56°N), the Royal Botanic Garden Edinburgh site at Inverleith enjoys mild winters with a reasonably low number of frosty days. This is mainly due to the warming effect of the Gulf Stream and the proximity of the garden to the sea at low elevation (20-30m).

Figure 1 below shows the number of days with air or grass minimum temperatures below freezing and the trends for the past 37 years. Air frosts range from 9 days per year (in 2014) to 80 days (2010), with an average number of 46 days. The trend over the past years has been negative, which means that on average there has been one less frosty day every three years (-0.35 days/year). Ground frosts, measured in the grass at the weather station were far more frequent (min 72 days in 2014, max 161 days in 1979; average 126 days per year) and the negative trend is similar and has become stronger lately (-0.54 days/year).

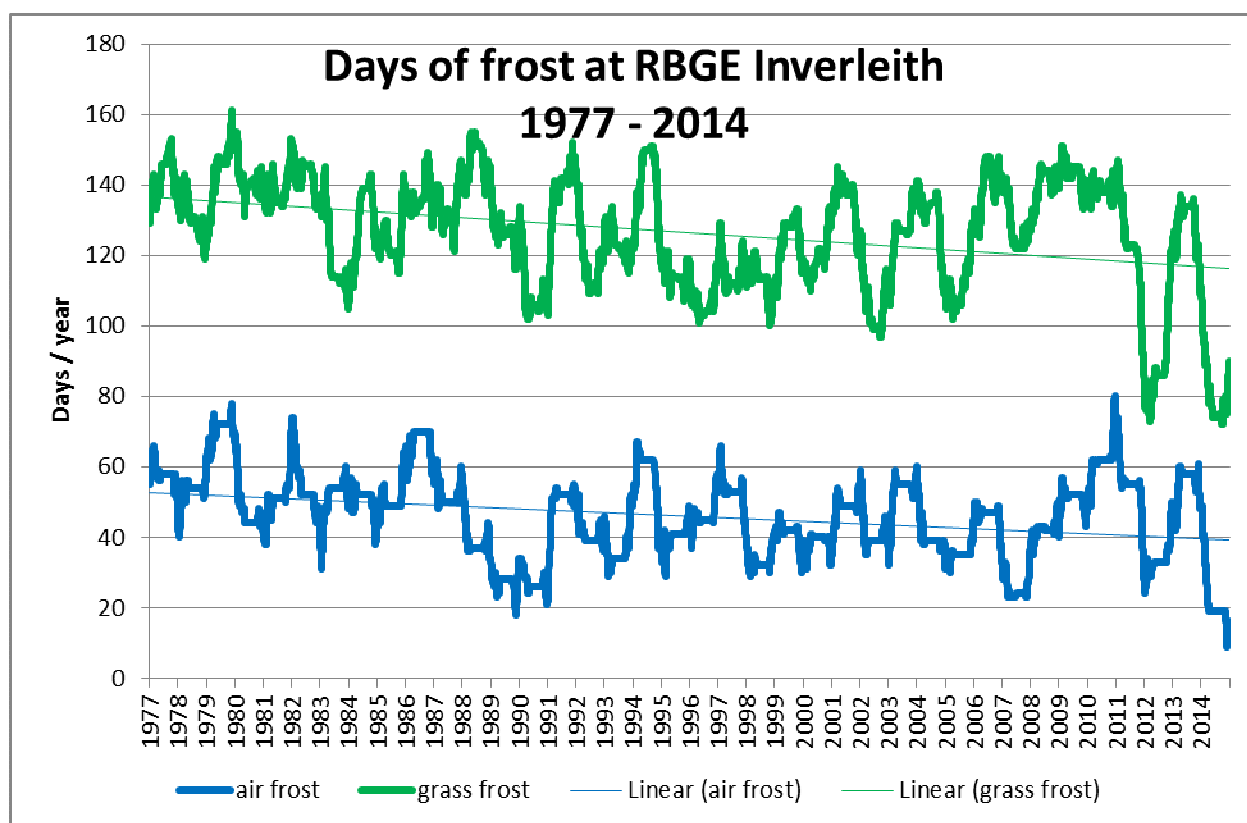


Figure 1. Days of air and grass frosts at RBGE Inverleith site.

The occurrence of days having sub-zero temperatures is displayed in Figure 2. The detailed graphs show the past frequency of sub-zero temperatures for air and grass, respectively for each day of the year. The smoothed lines are averages over 30 days to illustrate roughly monthly likelihoods. **While air temperatures can be expected to stay**

above freezing from the end of May to the end of September, grass frosts can happen throughout the summer, but are very infrequent in July and August.

Occurrence of frosts at RBGE 1976-2010

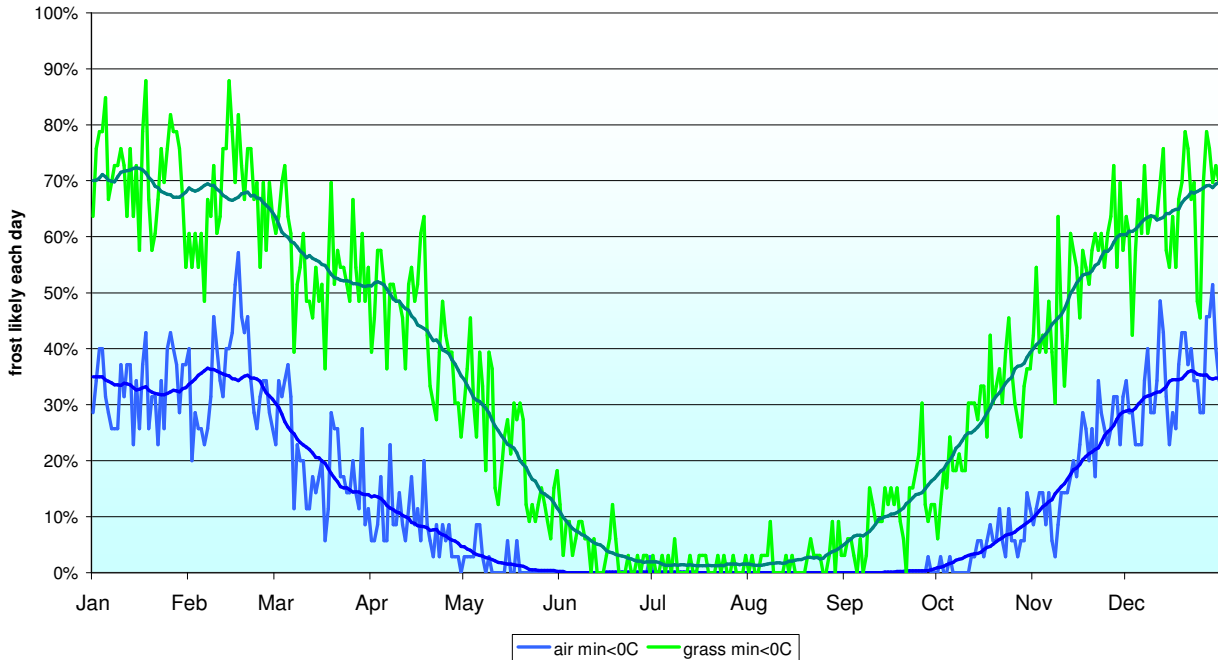


Figure 2. Frosty days over the span of the year as experienced at RBGE Inverleith. The occurrence of days with average air temperatures above 15C (“warm days”) and those below 5C (“cold days”) is shown in Figure 3. The trends are very telling!

