Climate and Weather

Chris Huxley

The climate of Lough Carra is fairly typical of the West of Ireland and the weather has been quite variable over the last twelve years. Rainfall records have been kept at two locations in the Carra catchment: from 1995, Peter Roberts has kept records at Kilkeeran, on the western lakeshore and, from 2000, I have kept records at Carrajames at the top of the Annies River catchment (around eight kilometres north of Moorehall). Therefore, we have comparative data for two locations within the catchment for the last twelve years and these show that, even over such a small distance (about ten kilometres), there is considerable variation.

The mean annual rainfall for Carrajames for the twelve years from 2000 to 2011 is around 1,300 mm, and has varied from 1,100 mm to 1,513 mm, whereas for Kilkeeran it has varied from just 835 mm (in 2010) to 1,654 mm (in 1998), with a mean of about 1,230 mm. Although the mean annual rainfall for each station is relatively similar, it seems that in recent years, Carrajames has received more rain than Kilkeeran, with the greatest differences being in 2010 when Kilkeeran recorded 835 mm and Carrajames had 1,132 mm (297 mm more) and in 2011 when Kilkeeran had 983.5 mm and Carrajames had 1,484 mm – a surprising 500 mm (50%) more!

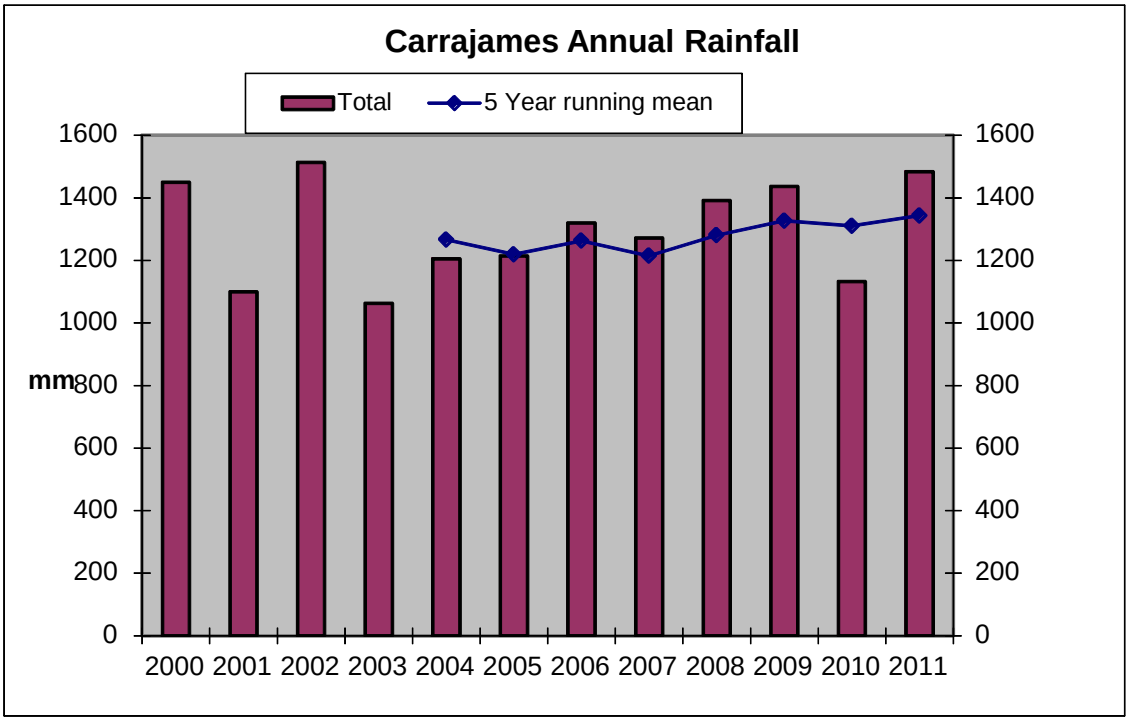

Fig. 1. Annual rainfall totals for Carrajames

Figure 1 shows the annual rainfall totals for the years 2000 to 2011, inclusive, for the Carrajames station, as well as the five year running mean. This latter starts in 2004 (since five years of data are needed to provide the mean). The data suggest that from 2003 to 2011 there was a trend of gradually increasing rainfall, with the exception of 2010. The five year running mean tends to smooth out short term changes. However, it seems quite possible that a more subtle change in the climate is occurring, with unusually long "dry" spells and exceptionally long "wet" spells. Whether this is a

genuine trend, or just short term fluctuations will only become apparent when several more years of data are collected.

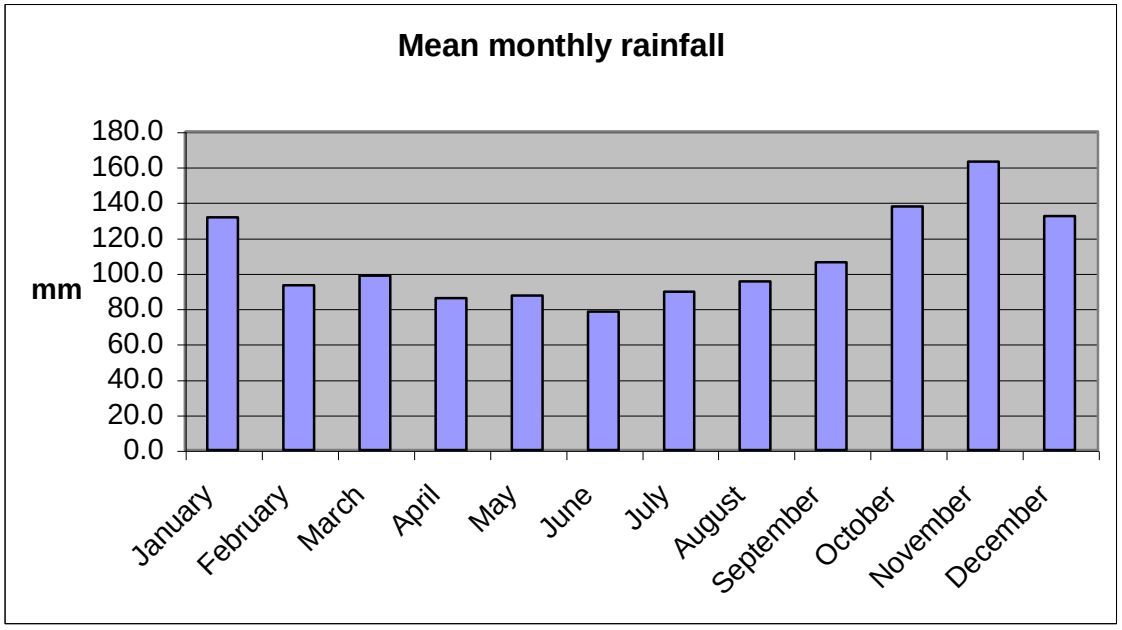

Fig. 2. Mean monthly rainfall totals for Carrajames 2000 to 2011

Figure 2 shows the pattern of monthly rainfall, from which it would appear that the four wettest months are October, November, December and January. However, there is a huge amount of variation from year to year. For example, although the mean for August is around 95 mm, the range has been from 27 mm (in 2003) to 183 mm in 2009. Similarly, the mean for December is 132 mm, but with a range from 46.5 (2010) to 221 mm (2006).

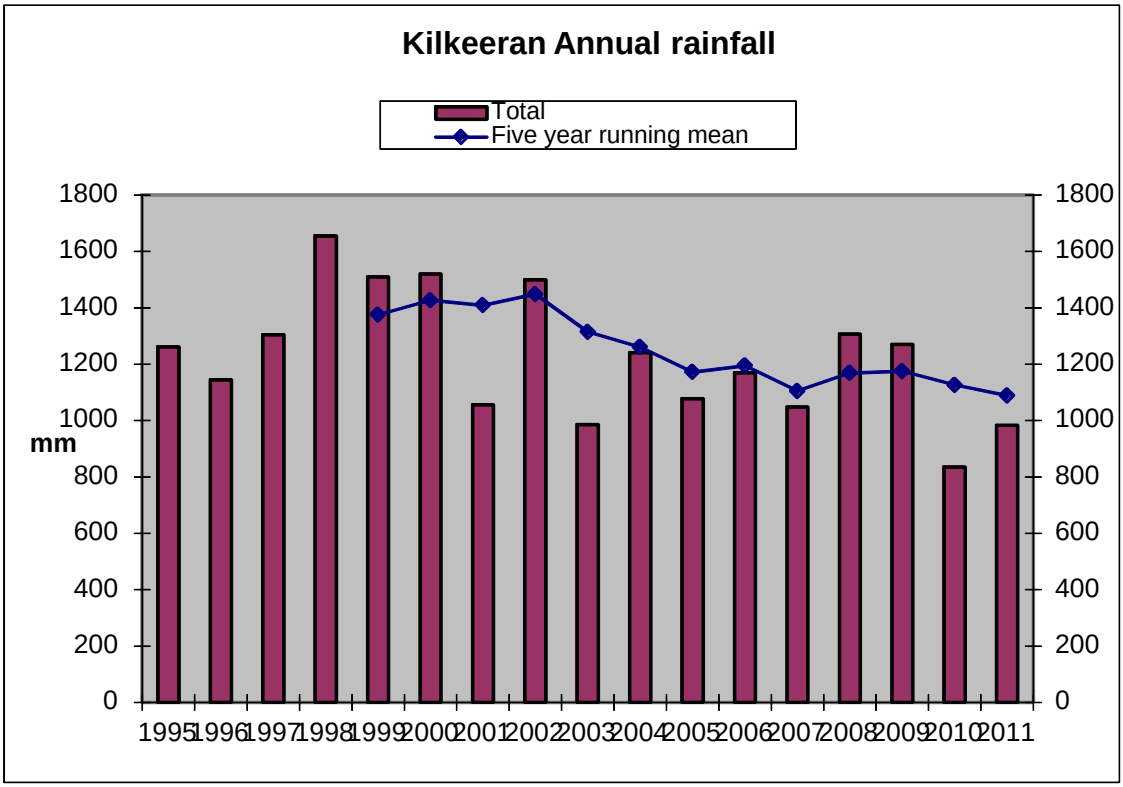

Fig. 3. Annual rainfall totals for Kilkeeran

Figure 3 shows the annual rainfall totals for the years 1995 to 2010, inclusive, for the Kilkeeran station, as well as the five year running mean. This latter starts in 1999 (since five years of data are needed to provide the mean) and appears to show a trend of declining annual rainfall, in contrast to the Carrajames data. The conclusion that might be drawn from this is that there is such local variation in rainfall patterns that this conceals any overall trends.

That the weather is so variable is illustrated also by the variation in the number of "dry days" each year. At Carrajames in 2010, there were 77 such days (i.e. days when no rain was recorded), whereas in 2009 there were 119 dry days, that is around 50% more. The mean number of dry days per year is 95.

These weather data do not cover a sufficiently long period to be able to detect trends that might be a result of climate change with any confidence. However, in recent years, there appears to have been a succession of unusually wet summers, and we are monitoring this aspect closely and will report on any developments of interest.

I am also in the process of analysing temperature and other weather data and the results will be posted here when available.

Chris Huxley
January 2012