Precipitation chemistry monitoring stations in Ireland

Station name	Latitude	Longitude	Altitude (m)	Start year	End year	Sampling Frequency	Collection Method
Ballyhooly	52.133	–8.416	75	1991	1999	Weekly	Bulk-precipitation
Brackloon	53.751	–9.560	75	1991	2010	Weekly	Bulk-precipitation
Capard Ridge	53.117	–7.450	340	1992	2001	Daily	Wet-only
Cloosh	53.334	–9.335	102	1991	2010	Weekly	Bulk-precipitation
Glenveagh	55.050	–7.934	44	2006	2010	Daily	Wet-only
Hillsborough	54.452	–6.083	150	1991	2003	Weekly	Bulk-precipitation
Johnstown Castle	52.285	–6.501	62	2006	2010	Daily	Wet-only
Lough Navar	54.434	–7.867	126	1991	2010	Daily*	Bulk-precipitation
Oak Park	52.867	–6.917	59	2005	2010	Daily	Wet-only
Roundwood (Ballinastoe)	53.113	–6.220	302	1991	2010	Weekly	Bulk-precipitation
The Burren	53.000	–9.100	90	1992	2002	Daily	Wet-only
Turlough Hill	53.034	–6.400	420	1991	2002	Daily	Bulk-precipitation
Valentia Observatory	51.934	–10.234	9	1991	2010	Daily	Bulk-precipitation
Mountrath	53.043	–7.488	181	2009	2010	3 monthly	Ion Exchange Resin
Copenagh	52.539	–7.043	324	2009	2010	3 monthly	Ion Exchange Resin
Dromahaire	54.249	–8.174	220	2009	2010	3 monthly	Ion Exchange Resin
Kilworth	52.151	–8.179	40	2009	2010	3 monthly	Ion Exchange Resin
Taughboy	54.761	–7.843	198	2009	2010	3 monthly	Ion Exchange Resin

*Daily observations until 1999, fortnightly since 2001.

The stations were operated as part of the Acid Deposition Network in Northern Ireland (n=2), the cooperative programme for monitoring and evaluation of the long range transmission of air pollutants in Europe (EMEP) (n=7) and Level II ICP forest monitoring (n=4). Also included are the 5 additional sites at which Na, Ca and Mg fluxes were measured using ion exchange resin (IER) columns.

Bulk precipitation and throughfall sampling using ion exchange resin (IER) columns following the method described by Fenn et al. (2002). IER columns consisted of a 14″ of 16″ riser filled with mixed bed amberlite ion exchange resin beads attached to a 20 cm diameter plastic funnel. Precipitation collected by the funnel drained through the resin columns, which adsorbed the ions contained therein. For bulk precipitation three collectors were deployed and for throughfall 7 collectors were deployed. The columns were deployed for two years—8 sampling periods of approximately three months each. At the end of each sampling period, the resin was removed from the columns and combined into a bulk sample. This was then split and one half eluted with 1M KI and analyzed for anions (Cl^-, NO_3^- and SO_4^{2-}) the other half eluted with 2M KCl and analyzed for cations (Ca^{2+}, Mg^{2+}, Na^+ and NH_4^+). Calcium Mg and Na were analyzed using a Varian AA240 FS atomic absorption spectrometer. NH_4^+ was determined colorimetrically and read on a UV-VIS Spectrometer (Perkin Elmer Lambda 2) at 655 nm. Chloride, NO_3^- and SO_4^{2-} were measured on a Dionex AS-DV ion chromatograph. The IER collection method ran concurrently with conventional throughfall collectors at two Level II sites in order to validate the results.