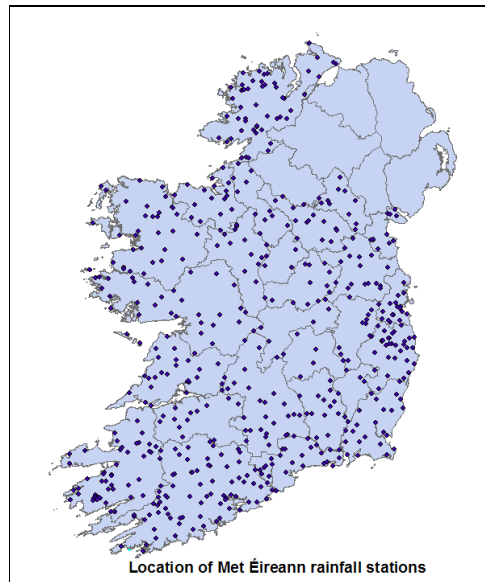


Flood Studies Update: Work Package 1.1 – Meteorological Data Preparation

Category: Flood Risk Management



Description:

The primary requirement of Work Package 1.1 was to provide a quality-controlled set of annual maximum series of recorded rainfall depths for a range of durations.

The range of durations comprised:

- Very short durations: 5, 10, 15 minutes
- Short durations: 15, 30 minutes; 1, 2, 3, 4, 6, 12, 24 hours
- Daily-step durations: 1, 2, 4, 8, 16, 25 days

The duration of 25 days was chosen to facilitate comparisons with the Flood Studies Report (FSR), which focused particularly on durations of 1 hour, 2 days and 25 days.

A secondary requirement was to provide lower-grade (shorter, older or less quality-controlled) annual maximum 1-day rainfall series for additional stations. This supported estimation of the index rainfall of 1-day duration at additional sites to assist in the mapping of the index rainfalls in “Work Package 1.2 – Rainfall DDF analysis” of the Flood Studies Update.

Daily and multi-day rainfall extremes were extracted for about 250 high quality well-distributed stations, each with at least 20 years of continuous record (and typically considerably longer). Annual maximum 1-day rainfalls were abstracted for a further 150 to 200 sites with lower-grade records.



The main sub-daily series (i.e. those for 15 minutes to 24 hours) were principally derived from Dines autographic tilting syphon raingauges.

Limited use was made of additional short-duration data from tipping-bucket raingauges. These typically offer about ten years of data. However, only those stations – and those years of record – for which the data are thought to be reliable were used. Sub-daily rainfall series were developed for approximately 50 sites.

For further information about this work, please contact: oliver.nicholson@opw.ie

Design Team:

The OPW is responsible for the specification, procurement and direct management of the Flood Studies Update Programme, with technical direction provided by a Technical Steering Group, comprising representatives of the primary state / semi-state organisations involved with hydrology, hydrometric monitoring and associated research in Ireland, viz. OPW, Met Éireann, Environmental Protection Agency, Electricity Supply Board, IHP / ICID National Committee, and has two technical experts.

Construction Team:

Research Contractors: Met Éireann,
www.met.ie

Dates:

Work Package 1.1 of the Flood Studies Update Programme was completed in September 2005.