

INVESTIGATING OPPORTUNITIES FOR IMPROVING SEPA'S NATIONAL COASTAL FLOOD HAZARD DATASET

Location: Scotland, UK

Project Dates: June 2016 - August 2016

Clients: CREW, Scotland's Centre of Expertise for Waters, and the Scottish Environment Protection Agency (SEPA)

Scope of work:

- Desk-based study
- Review scientific, peer-reviewed literature on coastal flood modelling
- Review grey literature from previous coastal flooding studies and reports
- Provide recommendations for improving SEPA's coastal flood mapping

PROJECT DESCRIPTION

The purpose of this review was to investigate ways to improve SEPA's Coastal Flood Hazard dataset, by considering how best the Flood Hazard and Risk Maps can be developed to incorporate wave setup and runup, and wind setup components.

As well as considering established methods for coastal flooding assessment, various cutting edge approaches were considered, including copula based joint probability analysis, Gaussian process emulation for improving wave transformation efficiency, prediction of wave runup and overtopping with process-based models such as Xbeach, and using numerical flood propagation models to model flood extents.

"CMAR provided us with high quality advice with an excellent understanding of our requirements. The work was delivered on time and to a high standard. I would have no hesitation in recommending the team. Many thanks!"

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