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What is the Integrated Catchment Solutions Programme (iCASP)?

iCASP is a £6 million environmental science impact centre HQ'd at University of Leeds with the aim to translate existing environmental science to:

- Inform policies, plans and strategies
- Produce materials that help environmental science be used by practitioners
- Generate benefits to Yorkshire's economy by influencing investments, identifying cost savings, and creating new products and jobs
- Create a network of catchment management experts

Aim of Surface Water Flood Forecast project:

Test the feasibility of combining the latest advances in:

- probabilistic rainfall forecasting (MOGREPS) and
- high-resolution surface water modelling (JBA's Jflow®)

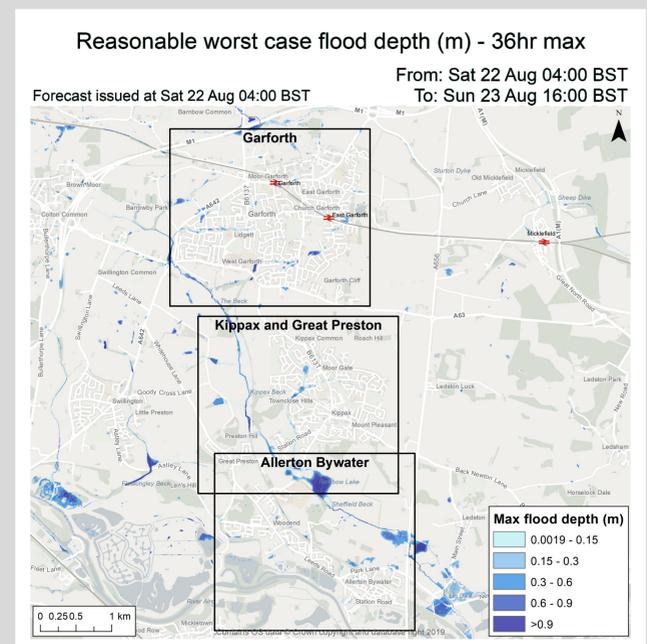
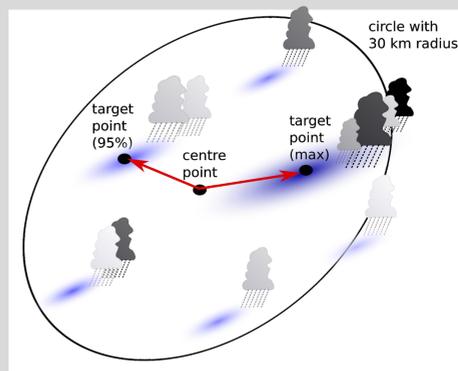
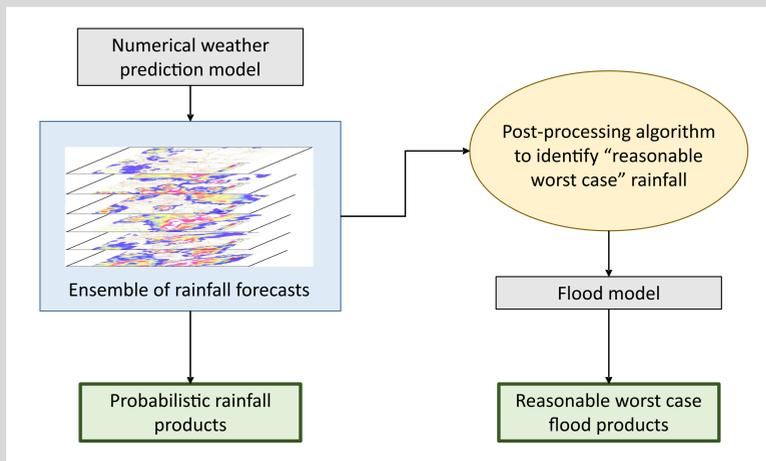
to create useful, localised, real-time, high-resolution Surface Water Flood (SWF) forecasts

- Task 1: Review current SWF forecast and response processes via stakeholder interviews
- Task 2: Develop enhanced, localised SWF forecast products
- Task 3: Test products in user workshop exercise

Enhanced probabilistic forecasts

In response to stakeholder consultations 2 types of forecasts - 1) probabilistic rainfall plots & 2) reasonable worst case flood maps were developed. The figure below outlines the methodology:

The post-processing algorithm to identify "reasonable worst case" rainfall is based on a Neighbourhood Search of MOGREPS. Rainfall is then input into Jflow® to generate flood maps



User workshop - Exercise "Augustus"



- 38 Practitioners, scientists and stakeholders across 16 organisations [April 30 2019, Leeds]
- Re-created past event in Garforth, east Leeds on August 22nd 2015 using JBA Exercise Management System – JEMS
- Participants were asked:
 - Did the new information make a difference to your decisions?
 - Are there communication challenges relating the new information?
 - How could the new information be integrated into existing processes?

Key Recommendations

1. Provide Local Authorities with additional support to respond to SWF forecasts
2. Encourage decision makers to make better use of the existing static Risk of Flooding from Surface Water (RoFSW) information.
3. Carry out a quantitative evaluation of the accuracy and reliability of the new forecast products over a prolonged period of time and multiple locations
4. Further engage the community of participants in the process of user-based consultation and testing

Report out now!
icasp.org.uk/projects/surface-water-flood-forecasts

