

Building Community Flood Resilience Through Innovative Communication

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Introduction

- Existing flood risk is significant and increasing
e.g. Scotland - 4.5% & 7.7% of residential & non-residential
- Financial, environmental, social and health impacts
e.g. Scotland - average annual damages £720-£850 million
- Some bodies have statutory duties to help reduce flooding
e.g. Scotland - SEPA, Local Authorities, Scottish Water

Introduction

- Householders have responsibility to protect their property
 - ⇒ *concept of resilient communities*
- Requires sharing of information so individuals can:
 - *consider their impact on flood risk*
 - *change their behaviour*
 - *prepare and take action*
- Presentation outlines some recent work in Scotland

Methodology

- Activities “evolved” rather than long-term vision
- Centred around interactive (mostly) physical workshops
- Design focussed on young and families
 - *embed key messages in future generations*
 - *harness enthusiasm to communicate key messages*
- Two main workshops have been used
 - *In Deep Water*
 - *FATE - Flood Awareness Through Engagement*

In Deep Water (part 1)

- EPSRC funded (latterly SEPA)
- Focus on SUDS and engineering careers
- Mobile for science festivals
- Staffed



In Deep Water

(part 2)

- SG & SEPA funded
- Focus on community resilience
- Scottish Schools
- Original model plus
 - *"dry" session*
 - *teaching resources*



flood impacts on individuals



flood kits



flood impacts on communities

FATE

Flood Awareness Through Engagement

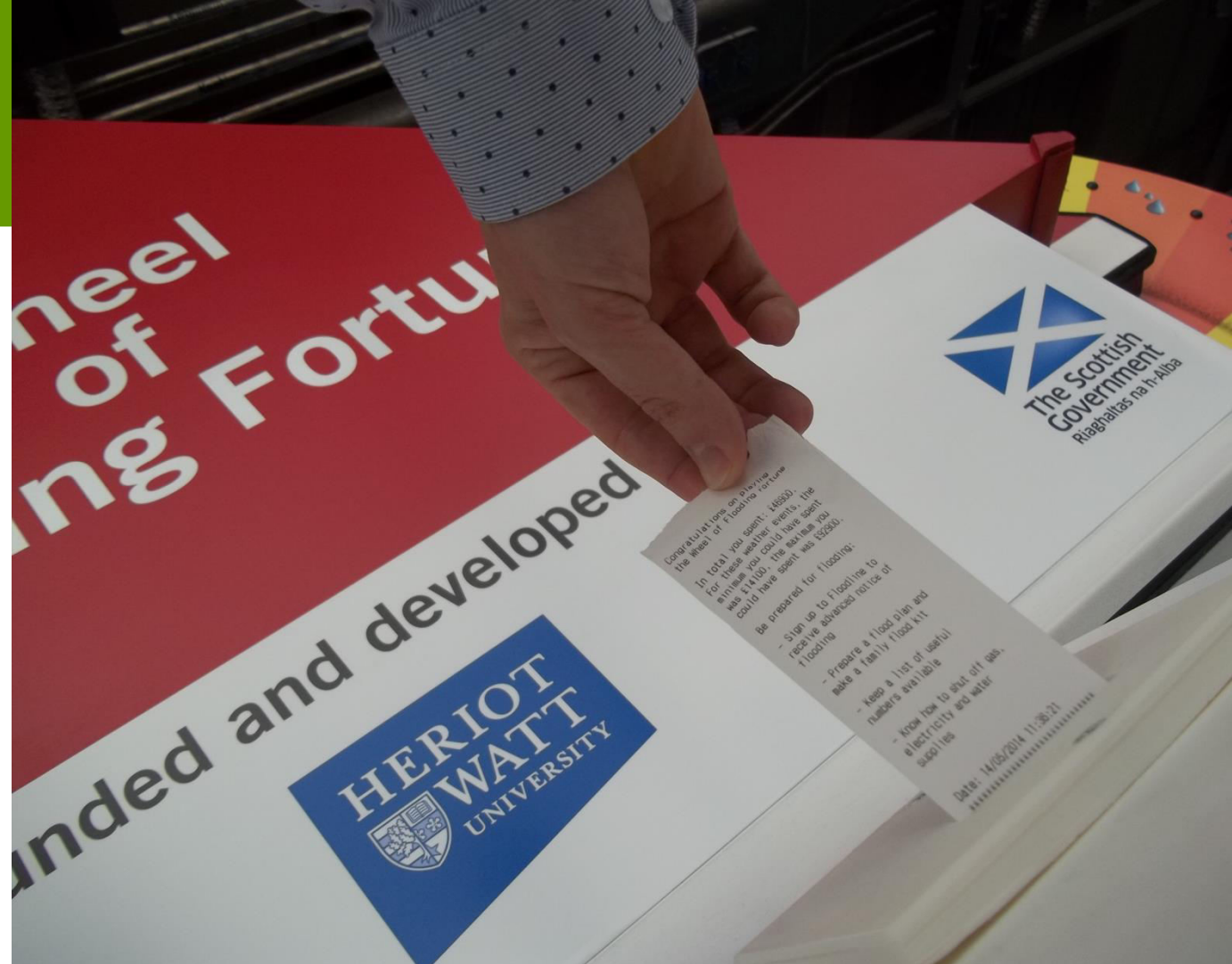
- SG & NERC funded
- Focus on:
 - *uncertainty*
 - *benefits of PLFP and flood warning*
- Spin wheel
 - ⇒ *weather*
 - ⇒ *flood depths*
 - ⇒ *damage costs*



FATE

Flood Awareness Through Engagement

- PLFP and warning can be selected
 - ↓ *damage costs*
 - *PLFP have cost*
- “Winner” has lowest costs over period
- “Permanent” for science centres
- Unstaffed



FATE - web

Flood Awareness Through Engagement

- Online version
- Same principle as physical version
- www.readyscotland.org



Step 5 – The Next Step

Knowing what to do and who can help is the first step is reducing the impacts of flooding



Are you in an area that could be affected by flooding? Visit [SEPA's flood maps](#) to find out.



Sign up to receive free advanced notice of flooding from [Floodline](#) and learn simple steps to take to reduce the impact of flooding.



Have you been affected by flooding? The Scottish Flood Forum can provide advice and support on how to recover from flooding.



The information in this game is provided by [Heriot-Watt University](#) Edinburgh.

play
again

Observations: In Deep Water (1)

- ~5000 participants
school children through to flood risk professionals
- Independent evaluation highlighted
“... strong evidence for learning ... about flooding, causes and implications ... about steps that can be taken to mitigate flooding”
- SEPA commented
“Seeing how flooding happens, physically moving infrastructure about to reduce flooding, ... complements our long term aims to make the next generation more flood aware.”

Observations: In Deep Water (2)

- ~3000 participants
primary and high school children
- Independent evaluation (workshop)
 - *interesting, interactive, visual, engaging and fun*
 - *effective way of raising flood risk awareness*
- Independent evaluation (longer-term)
 - *caused many to further research local and international floods*
 - *inspired some to re-evaluate own preparedness*
 - *inspired schools (and pupils) to create other interactive models*

Observations: FATE

- Recently been developed
 - *substantive evaluation data not yet available*
- Temporarily installed at Glasgow Science Centre
 - *highlighted effectiveness with families with young children*
- Coming soon to a Science Centre near you (if Scottish!)

Similar initiatives

- Tweed Forum Catchment Model



Similar(ish) initiatives

- Computer based simulations



*FloodSim
(Aviva)*



*WaterTown
(University of Abertay)*

Conclusions (tentative)

- Educate public about flood risk? Behaviour change?
 - *time will tell*
- Experiences to date indicate that
 - *all ages are interested in complex, societal issues such as flooding*
 - *all ages are capable of meaningful engagement in such issues*
 - *interactive engagement can help engage all ages in such issues*
 - *interactive engagement can spark more general interests*

Future work

- Existing workshops
 - *continue to be developed and used*
 - *evaluation ongoing*
- More work needed on communication of uncertainty
- Similar approaches translated to related fields
e.g. monitoring for bacteria in water



(Dr Helen Bridle, HWU)

Lessons

- Make it fun
- Know your audience and venue
- Keep things simple
 - good workshops spark interest; they do not convey detail*
- Costs and management
 - *build* - typically low/medium, and controllable
 - *transport* - can be high, but controllable
 - *staff* - typically highest, and least controllable

Thanks to...



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Riaghaltas na h-Alba

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Engineering and Physical Sciences
Research Council



HWU PhD students

Questions?