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FLOOD RISK COMMUNICATION

Building resilience through flood risk communication

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Australian Government
Department of Industry,
Innovation and Science

Business
Cooperative Research
Centres Programme




MACQUARIE
UNIVERSITY

END USER ORGANISATIONS

End Users organisations currently involved:

- **NSW SES** - Andrew Richards, Phil Campbell, Elspeth Rae
- **Vic SES** – Tamsin Achilles, Susan Davie, Kate White
- **QFES** – Peter Jeffrey
- **AFAC Community Safety** - Amanda Leck
- **Royal Life Saving Australia** - Amy Peden, Craig Roberts

End User organisations to be invited:

SASES, SES TAS, DFES, ACTESA, NTPFES.

ACADEMIC ADVISORS

- Mr Ian Faulks, Centre for Accident Research and Road Safety, Queensland University of Technology, QLD.
- Mr Andrew Gissing, Risk Frontiers, Macquarie University. NSW.
- Dr Kyra Hamilton, Griffith's Menzies Health Institute, QLD.
- Dr Julia Irwin, Psychology, Macquarie University. NSW.
- Dr Jonatan Lassa, Charles Darwin University, Darwin. NT.
- A/Prof Liz Shanahan, Montana State University, USA.

BACKGROUND: PREVIOUS RESEARCH

1. BNHCRC research has identified that floods are the second most deadly natural hazard following heatwaves in Australia
2. Detailed research into these fatalities demonstrates that many deaths were avoidable
3. High risk behaviours include:
 - Those driving and entering floodwaters
 - Those recreating in flood waters



BACKGROUND: WIDER RESEARCH NEEDS

1. Limited research that rigorously evaluates the efficacy of flood education and warning strategies with target groups
2. Little research that evaluates the efficacy of incentives and new laws to complement education and warning materials
3. Little advancement in the call to involve target groups in participatory research



'They're not heeding the message'

12.53pm Friday March 31 <http://www.smh.com.au>

'SES Acting Deputy Commissioner Mark Morrow appeared frustrated by people who still entered floodwaters and required rescuing, despite repeated warnings not to do so.

"No, they're not heeding message [to stay out of floodwaters]. I don't know what I have to say," Acting Deputy Commissioner Morrow said.

*"I've mentioned before that **we need to recalibrate people's approach to risk**. They just don't understand the risk that they face when they think it's OK to drive across causeways. We're going to have to be much more shocking I think in our message around what the consequences are."*

3.31pm Friday March 31 <http://www.smh.com.au>

Mr Morrow has urged parents to keep a close eye on their kids, to avoid tragedies from them playing in the water. He has also criticised people who have taken to the floodwaters on surfboards and wakeboards.

"To tell you the truth, I have seen disgusting footage today of people being dragged around behind vehicles on wakeboards thinking it is fun," he said. "It is not. It is serious. For our volunteers, it is too much of a risk."

PROJECT OBJECTIVES

1. Develop a detailed understanding of the motivations, beliefs, decision making processes and information needs of at-risk groups (split by age and gender).
 2. Develop and adapt targeted risk communication materials in partnership with those from at-risk groups and end-users
 3. Develop an innovative methodology for evaluating the effectiveness of various communication materials and initiatives using a realistic disaster scenario.
- Individual and group decision-making processes
 - The influence of competing messages, shocking messages, peer to peer
 - Efficacy of education and warnings compared to incentives and new laws

PROJECT STEP 1: UNDERSTAND THE ISSUE

1. Systematic literature review
2. Two quantitative surveys:
 - a. SES volunteers', other ESOs, and critical workers' attitudes and experiences concerning driving through floodwaters
 - b. Public's attitudes and experiences concerning driving and playing in floodwaters
3. In-depth qualitative analysis of data already collected by end-users
4. Collection of new data gathered from locations recently flooded
5. Explore decision-making processes in detail with target groups exposed to a realistic disaster scenario

PROJECT STEP 2: COMPILATION OF MATERIAL

1. Work with End Users to compile risk communication materials
 2. Form target reference groups to participate in workshops to select and work to improve materials
- Materials based on needs outlined in first phase in partnership with End Users and community reference groups.
 - Scope for materials to be adapted or developed, but not professionally finished.

PROJECT STEP 3: EVALUATIONS

Specific target groups are asked to make decisions independently and collectively regarding entering or playing in floodwaters following exposure to an intervention. Control groups not exposed.

- 1) Respondents given intervention,
- 2) Exposed to a realistic disaster scenario
- 3) Asked to make decisions in regards to entering or playing in floodwaters
- 4) Involved in facilitated interviews (individuals) or focus groups

PROJECT DELIVERABLES

- End user-directed research and policy recommendation briefs
- National guidelines document on flood risk communication materials and methods
- Novel methodology for assessing flood risk communication and education materials
- Evaluated flood risk communication and education materials

CURRENT STUDENTS



PhD student Arifa Mohammed

Title: Entering Floodwater: Occupational and Public Perceptions of Risk and Cue Utilisation

Current activities:

- Preparing a literature review - driving into floodwaters
- Occupational risk – survey with NSW SES personnel
 - Risk perception, experience, training, organisational factors/culture
- Public attitudes to driving through floodwater
 - Risk perception, motivation, experiences

Master of Organisational Psychology – Research thesis students



Lisa Sato

- Occupational risk – attitudes of emergency and essential workers to driving through floodwater (Fire, Police, Paramedics, Council, Energy, Transport/logistics)
 - Occupational pressures, safety culture, risk perception, attitudes
 - Sister-survey to SES survey (Arifa)



Gemma Hope

- Judging danger in flooded roads
- Does cue utilisation (extracting visual features) in driving relate to ability to distinguish features and judge risk in flood road situations
 - Computer-based research - using EXPERTise 2.0 and photo stimuli

LINKS: COMMUNICATIONS AND WARNINGS CLUSTER

Connecting Communities and Resilience Lead: V Tippett (QUT)

- Investigating the most effective ways to engage and motivate
- Exploring the influence of competing messages

Child Centred Disaster Risk Reduction Lead: K. Ronan (CQU)

- Children and youth as a risk group
- Exploring family decision-making
- Exploring implementation and scaling-up

Synergies between all three projects also include:

- Utilising participatory approaches
- Developing robust methods for evaluation
- Sector and community capacity and resilience -building