SHELTERING IN PLACE DURING FLOODING: A CASE STUDY OF EX CYCLONE DEBBIE

Katharine Haynes 1,2, Matalena Tofa1,2, Marcus Morgan3
1 Department of Geography and Planning, Macquarie University
2 Bushfire and Natural Hazards CRC
3 New South Wales State Emergency Service

Timely evacuation from floods is often the safest option; however, there are some occasions when evacuating may place people in greater danger (Ashley and Ashley, 2008; Drobot et al., 2007; Haynes et al., 2009; Jonkman and Kelman, 2005). Whilst much research considers evacuation behaviours and how to motivate greater compliance, little research documents peoples’ reasons for, and experiences of, sheltering at their home or business during floods. Despite the limited knowledge or understanding of the challenges faced by those who shelter in place during rapid flooding, it is increasingly being considered as a viable strategy in some local government areas in Australia.

The March / April 2017 flooding in Northern NSW presented an opportunity to investigate sheltering experiences. Between April and July 2017, we conducted 83 interviews and a questionnaire (n=330) with residents and business owners in the Richmond, Brunswick and Tweed river catchments. This paper presents findings about the factors influencing sheltering or evacuation behavior and the risks and challenges faced. It provides insights into the challenges and risks of sheltering, but also to the diverse motivations and reasoning that sustains a culture of sheltering. This work will begin to inform how emergency services can better prepare communities where sheltering is commonplace for the physical and emotional realities they may face.

Reasons why people sheltered

The reasons for sheltering were multifaceted, with most people identifying more than one reason. A culture of sheltering was identified with respondents stating that they thought it was safe to shelter and had done so many times previously. Notably, 63% (81 people) of those who had never experienced flooding before also sheltered for the duration of the flood, following advice from neighbours or long-term residents to do so.

Many discussed their emotional attachment to their home and their desire to protect their belongings. Businesses, also, reported staying to protect their livelihoods: “there’s not much difference between lives and livelihoods, it’s a fine line” (Lismore business owner). Respondents discussed how they were still busy lifting belongings as the floodwaters arrived and needed to clean up as soon as the flood receded: “the big thing is the clean-up. If you’re not there... the longer [you] leave it, the harder it is to clean” (Lismore resident).

The time when residents became aware of warnings and evacuation orders was a fundamental factor. Many stated they could not have evacuated when they were asked to as the roads were already cut. Others in areas subject to flash flooding said that had they evacuated when asked, they would have put themselves at even greater risk.

Challenges and scenarios faced while sheltering
Some residents and business owners were relatively comfortable, but many faced significant challenges. Participants described watching the water come higher than expected, seriously contemplating the possibility that they may not survive this flood. As one participant stated: “What happens if you’re in trouble and emergency services can’t get to you? Do you just die?” (Burringbar resident). Isolation was also a key challenge. Some residents described a sense of being “cut off from the world” (South Murwillumbah resident), and almost a third of those who sheltered said they felt isolated for most of the night. The sounds and smells associated with the water itself were also an important part of the experience. Many residents vividly recounted watching their belongings be swept away, the smell of sewage and petrol mixed in with the floodwater, and the noise of the wind and rain. Lastly, for some participants looking after others was a challenging aspect of sheltering. Many parents recounted the various steps and risks they took to protect their children, and to make sure that their children were as comfortable as possible. Others described taking care of elderly parents, and of family members or neighbours who were injured or unwell during the flood.

Conclusions and Recommendations

This study shows that the decision to shelter generally is not made lightly. Instead, the reasons are multiple and diverse, and often tied to personal circumstances on the day. In the communities that participated, there is an established ‘culture of sheltering’ such that even though some people experienced real stress, and loss in this event, a majority of people intend to shelter again in future. Therefore, recommendations arising from these findings include:

- Greater use of local knowledge and expertise in making decisions about warnings and evacuations;
- Tailored information and advice that is locally specific and identifies potential challenges and ways to be safer while sheltering;
- Emergency services and local government can engage with communities where there is a culture of sheltering to support people to understand the risks, their needs, their capacities, and plan for floods; and
- Supporting preparedness actions by providing a warning to start preparing (i.e., lifting belongings) so that residents and business owners are ready and able to evacuate.

This study also provides important evidence based research that can contribute to discussions regarding the design of future developments to assist in avoiding or minimising some of the consequences that were experienced by those interviewed.

References


We would like to thank the research participants who gave their time to discuss their experiences and opinions. We also acknowledge the assistance of the NSW SES for their collaboration and support. This research was funded by the BNHCRC.

2018 Flood Plain Management Australia National Conference