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PRACTICE NOTE

Emergency Public Information and Warnings: Use of Rural Residents' Flood Information and Knowledge by Emergency Responders During the Queensland, Australia, 2011 Floods

PRACTICE

Emergency responders in several rural communities in Queensland, Australia, received information from upstream residents about the large volume of water flowing down local water systems prior to the 2011 flood inundations. Responders used these residents' experiences and knowledge of the local environment to alert and, when necessary, evacuate populations at risk before the floods.

DESCRIPTION

The 2010 – 2011 Queensland Floods

In December 2010 and January 2011, the State of Queensland, Australia, experienced record rainfall, which caused massive flooding throughout the state. Flood inundation damaged approximately 29,000 homes and businesses. In addition, flooding forced thousands of people from towns and cities to evacuate. In total, the floods caused 35 casualties, and 3 individuals remained missing as of August 1, 2011. The Australian Government declared a disaster zone of more than 500,000 square miles, affecting more than 2.5 million people. Flood response operations included national, state, district, and local personnel. Further, the Australian Defense Force deployed 1,900 military personnel to assist with response and recovery operations. The Queensland Reconstruction Authority estimates that flooding resulted in more than 5 billion Australian dollars in damage.

Rural Informal Warning Networks

Prior to the 2011 flood inundation, residents living near rivers in rural areas warned authorities and neighbors of the large volume of water flowing down these water systems. Several longtime rural residents living near rivers in two different townships warned local law enforcement agencies of the rising water levels. Law enforcement personnel then contacted other upstream residents to confirm this information and to gain additional data on the volume of water in local rivers. Further, the law enforcement officer managing flood operations in

The State of Queensland is part of the Commonwealth of Australia. Queensland is Australia's second largest state with an area of approximately 666,000 square miles and a population of 4.5 million people. The capital, Brisbane, is located in the southeastern corner of the state.



Map of Queensland

these communities contacted the local nurse and her husband because they “had been through flooding events, so they have got good local knowledge of what level it would go and heights.” In addition, the nurse managed the local medical equipment and supplies, and was aware of individuals in need of immediate evacuation.

Law enforcement agencies used the information collected from the nurse and local residents to identify populations at risk and to alert towns downstream of the imminent floods. A law enforcement officer stated, “You try and get as much information [as you can] to gauge how much is actually going to come into the main channel. From these measurements, we knew water would come into town.”

Residents in another region also realized that the water levels of local rivers were higher than in previous floods and estimated that a flood was imminent. These residents contacted neighbors at risk, which ensured their safe evacuation prior to the floods. A farmer living near the Comet River in Rolleston stated that he received a telephone call from an upstream neighbor alerting him that “there was a lot of water coming. It was higher than she had ever previously seen.” The farmer also observed that local residents had established an effective information-sharing network along the river. During an emergency, these residents would employ smoke signals and two-way radios to communicate warnings to their neighbors if phones became unavailable.



Flooding on January 10, 2011

The *Queensland Floods Commission of Inquiry Interim Report* observes that rural residents employ a “bush telegraph” by calling each other to ensure that those at risk can evacuate. The report notes that this system is dependent on the residents’ knowledge of and experience with the local area and water system. The report recommends that rural jurisdictions should continue to take advantage of their residents’ knowledge of the local environment given that “automated systems are extremely useful, but their existence should not lead to disregard the value of human observation and local knowledge.” Further, the *Australian Emergency Manual Series: Manual 22 - Flood Response* notes, “Often, local communities with substantial flood experience may operate their own unofficial flood warning systems. Such systems, operated by community members, use locally developed techniques to predict flood levels at certain gauging points along a stream. Emergency managers should seek to engage with the leaders of such systems and, where appropriate, facilitate communication with official warning agencies regarding flood predictions.”

The [Queensland Floods Commission of Inquiry Interim Report](#) discusses the response to the series of floods that occurred in Queensland, Australia, between November 2010 and January 2011. These floods killed 35 people. The report focuses on disaster preparedness and response during the flood inundations.

The Whole Community Approach

These local activities are representative of the Federal Emergency Management Agency’s (FEMA’s) Whole Community approach. FEMA established this approach in an effort to incorporate the capabilities of the entire community and to move beyond traditional, government-centric disaster management models. FEMA Administrator

For additional information on National Level Exercise 2011 and the Whole Community, please see the [National Level Exercise 2011 Quick Look Report](#) and the [National Level Exercise 2011 Whole Community Quick Look Report](#).

Craig Fugate stated, "We know that non-governmental organizations, like faith-based and non-profit groups and private sector entities, possess knowledge, assets, and services that government simply cannot provide." The Whole Community approach emphasizes the ability to access non-traditional resources and apply them in innovative ways to save lives and sustain communities after catastrophic disasters. FEMA evaluated the Whole Community approach for the first time during National Level Exercise 2011.

CITATIONS

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