CoastAdapt

Snapshot

Pasha Bulker storm - lessons learned

Summary

One of the most significant meteorological events in Australian history, the 'Pasha Bulker Storm' was an east coast low (ECL) which affected the east coast of Australia between Illawarra and the Hunter in June 2007. The storm caused widespread flooding, the grounding of a 40,000 tonne bulk carrier, and it damaged critical infrastructure and disrupted coal exports. Nine people lost their lives.

Of concern, the storm and resulting flood came as a surprise to most in the community, and there were gaps in disaster preparedness. Significant lessons were learned from this event with regard to understanding coastal hazards and disaster risk management.

Keywords

Pasha Bulker, East Coast Lows, disaster preparedness

Background and impacts of the Pasha Bulker storm

The Pasha Bulker east coast low — known from the name of the bulk carrier that was grounded on Nobbys Beach, New South Wales (Figure 1) — was one of the most significant meteorological events in Australia's history. It involved gale force winds and heavy rainfall which led to flash flooding in the urban area of Newcastle and as far south as the Central Coast. The storm, a 1-in-100-year return period event, formed close to shore, with the area of maximum rainfall affecting a highly urbanised part of the coast.

Figure 1: The Pasha Bulker carrier grounded on Nobbys Beach. Photo: © Philip J. Rosenberger III.

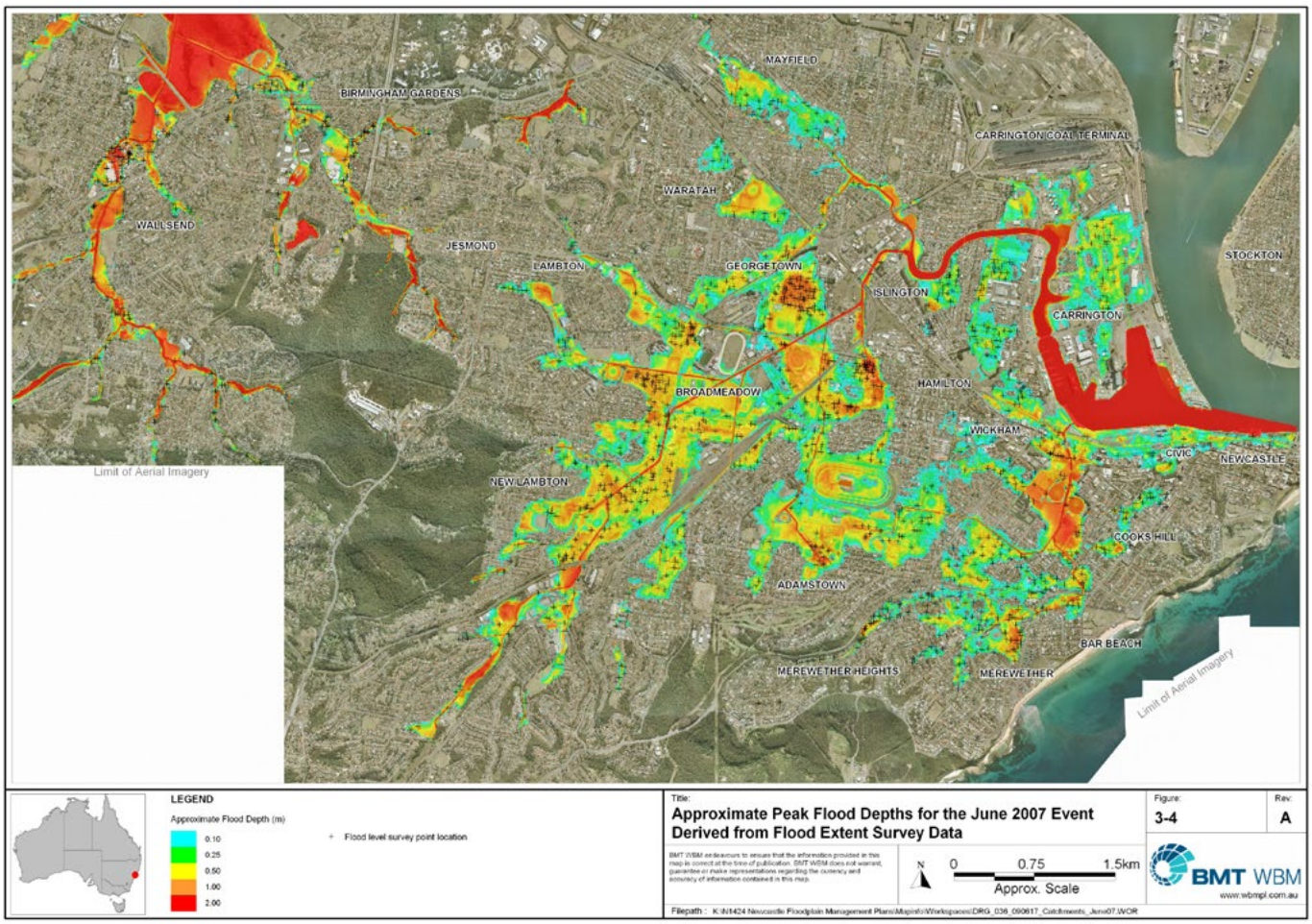

Figure 2: Peak flood extent and depths for the June 2007 event. Source: Image courtesy of NSW Government.

The resulting flooding and damage impacted 800,000 people. Impacts and costs from the storm included:

- Widespread damage to critical infrastructure including to Energy Australia's power supply network, water and wastewater facilities, the rail network and roads, and overtopping of the New England Highway
- Approximately 300,000 people were without electricity for four days, some of whom were without power for a month
- The biggest disruption to the Port of Newcastle in its history, delaying the export coal supply chain with the output loss conservatively estimated at $100 million
- The need to evacuate schools and nursing homes, with associated challenges for a number of families unable to reach students due to access cut by floodwaters
- Around 90,000 insurance claims worth $1.48 billion being lodged (the eighth highest amount in Australian insurance history).

The storm and the resulting flood (Figure 2) came as a surprise to most of the community, and gaps in preparedness were highlighted. Many people that were affected were not aware that they lived in a floodplain, communications procedures were not standardised, and the State Emergency Service (SES) was not prepared for flash flooding on the scale experienced.

Health services were also stretched, and it is doubtful they could have coped with a storm of greater impact. Demands on health services included the Hunter and Central Coast ambulances responding to more than 950 calls, and 180 storm-related presentations at emergency departments in the Hunter New England area. At the same time, health facilities were damaged (see Figure 3), and electricity interruptions were experienced by 12 hospitals and 50 private nursing homes.

Figure 3: Flooded health facility in Newcastle. Photo: © Newcastle City Council, NSW Government 2016.

Lessons Learned

For the councils and communities affected by the Pasha Bulker storm, the challenges of responding and recovery highlighted the need for change. The following lessons learned summarise those outlined in reports on the storm event by Vernon-Kidd et al. (2010), Jones (2013) and BMT WBM (2012).

Importance of flood preparedness and community awareness. The council recognised the value of continued investment in flood mitigation schemes, and the need to better reflect flood risk in planning. A flash flood warning system has been established in Newcastle and a flood education strategy was developed by Hunter Central Rivers Catchment Management Authority in partnership with the SES. Also recognised was the need for pre-established facilities that would be suitable to act as Disaster Recovery Centres in such events, and for effective and pre-organised communication systems.

Need for flood management planning to better address risks from debris. The severity of flooding in some areas was worsened by blockages of the stormwater system. For example, shipping containers lodged in culverts resulted in flood levels of up to one metre higher than otherwise would have occurred. Numerous other smaller culverts were blocked by vehicles, large rubbish bins or shopping trolleys, but adjacent opportunities for overland flow in these instances meant that the flood impacts were localised.

Storm behaviour knowledge gaps need to be addressed. With no large floods in the last 35 years, the available data was not sufficient to determine accurate flood height predictions. The Pasha Bulker storm triggered recognition by the state and federal government of the need to better understand the variability of East Coast Lows and how they could change with climate change. A research program has since been established (Eastern Seaboard Climate Change Initiative).

Coordination between governments is critical. Government roles overlap in flood management and recovery. Better coordination between different levels is essential. Preparedness for severe flooding was impaired by divided responsibility for control of the storm water system in Newcastle CBD. A lack of appropriate funding from all level of government may be a road block to undertaking robust flood studies and implementing flood management plans in priority catchments. Many local governments rely on supplementary funding from the state and federal government for this work.

References

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Further reading

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