

# Analysis of damage to housing during the 2010/11 Queensland floods

Matthew Mason  
Risk Frontiers  
Natural Hazards Research Centre  
Macquarie University  
[matthew.mason@mq.edu.au](mailto:matthew.mason@mq.edu.au)



# Flood actions



Water contact damage

# Flood actions



Hydrodynamic & buoyancy



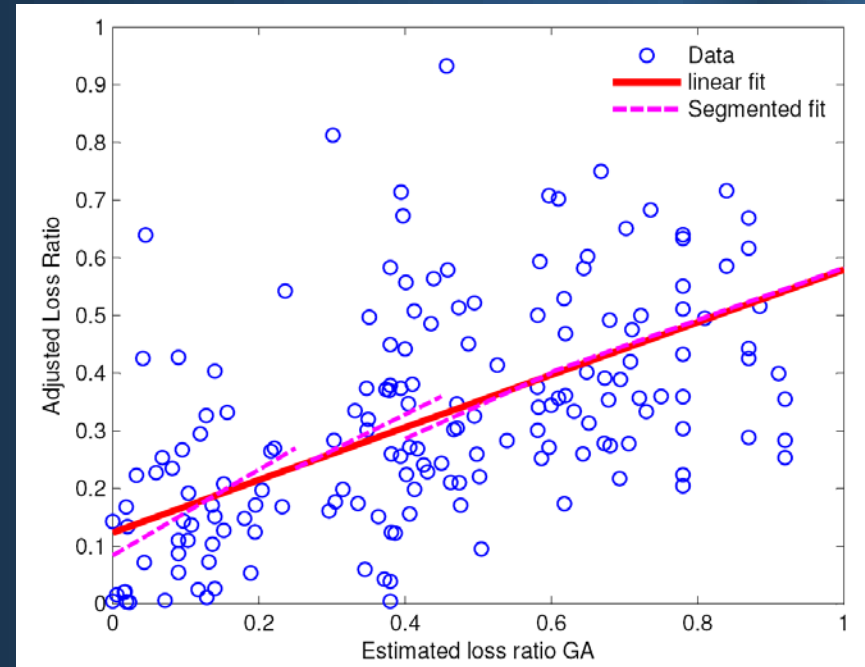
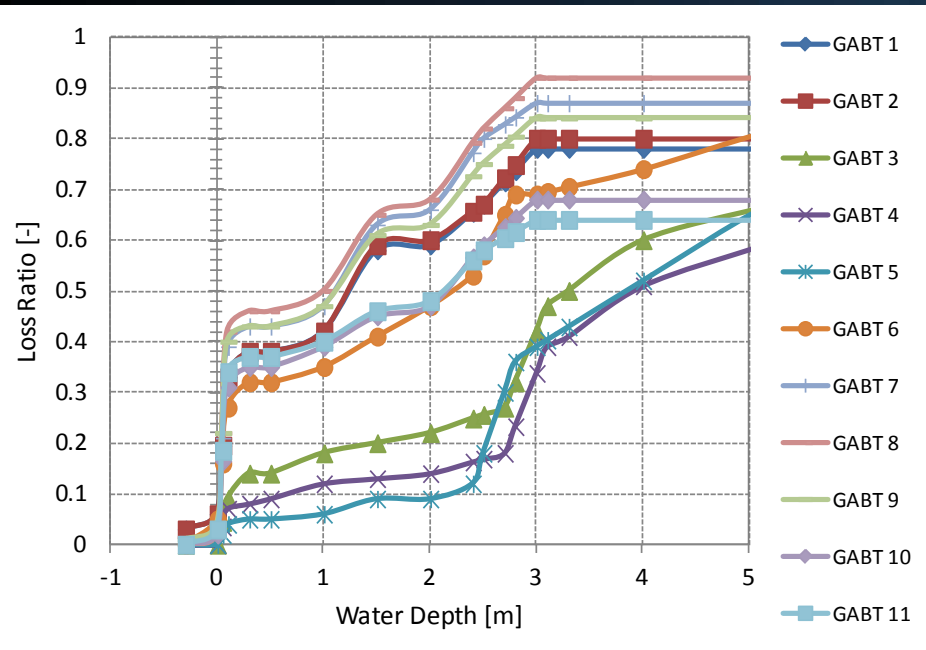
# Flood actions



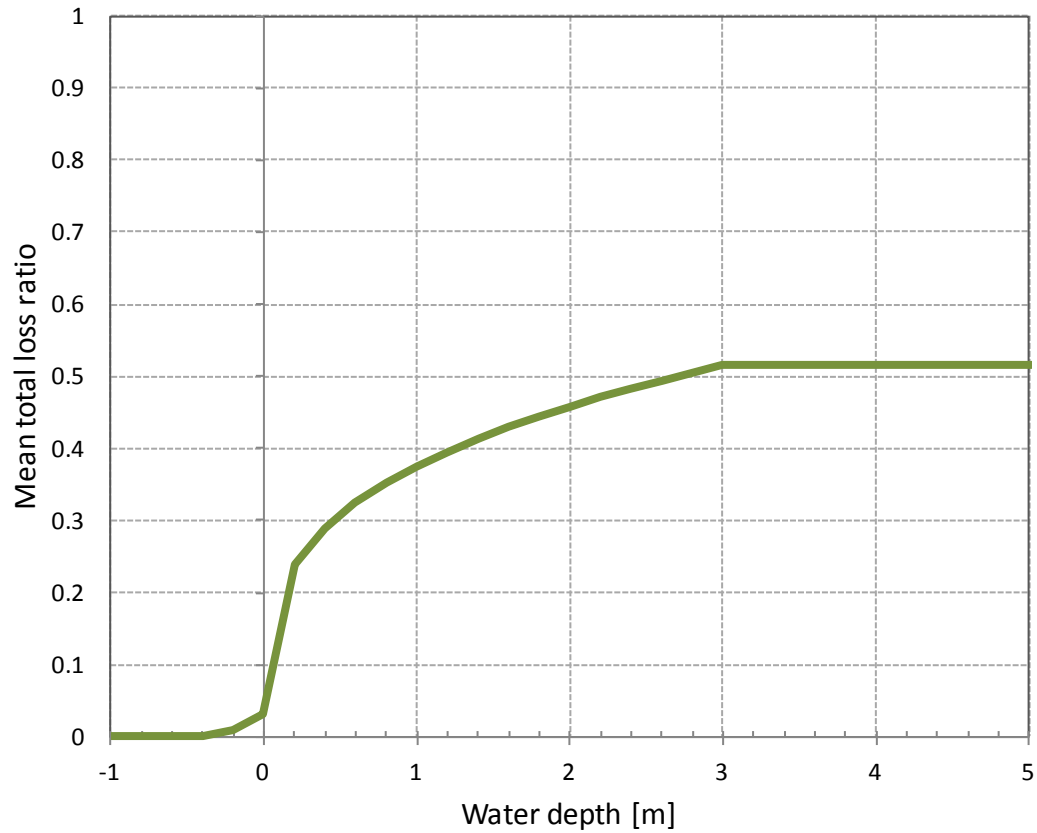
Debris impact & scour

# Financial loss

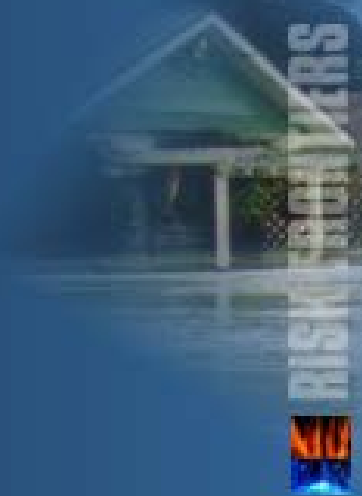
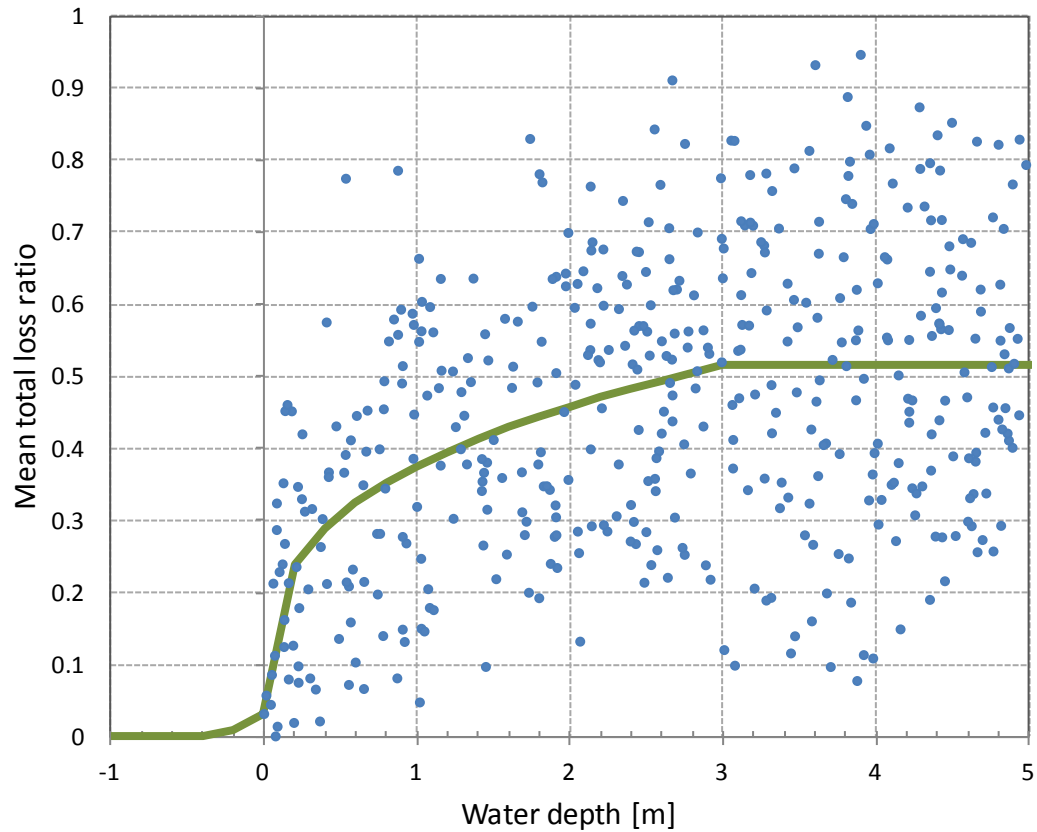
- Semi-empirical formulation



# Financial loss



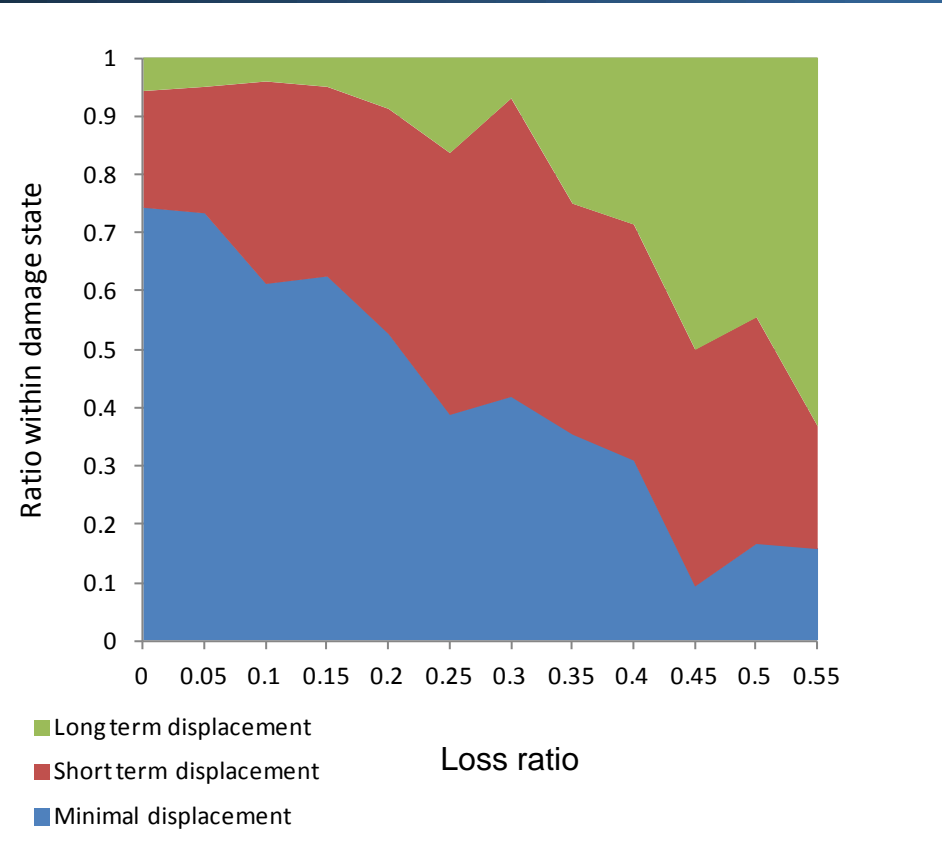
# Financial loss



# Displacement

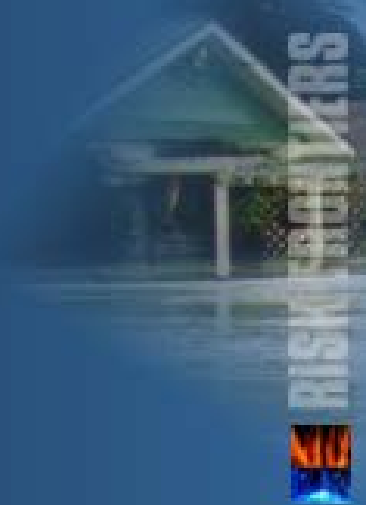
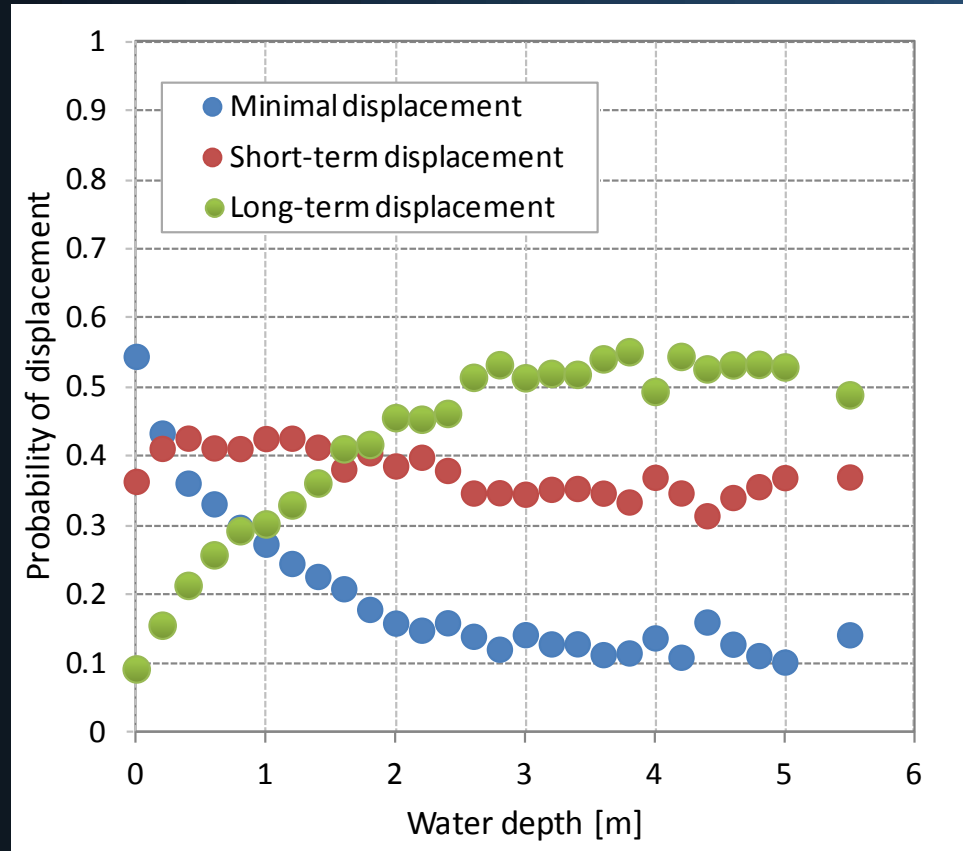
- QFRS damage states

1. No damage
2. Minor damage
3. Medium damage
4. Severe damage
5. Total damage





# Displacement



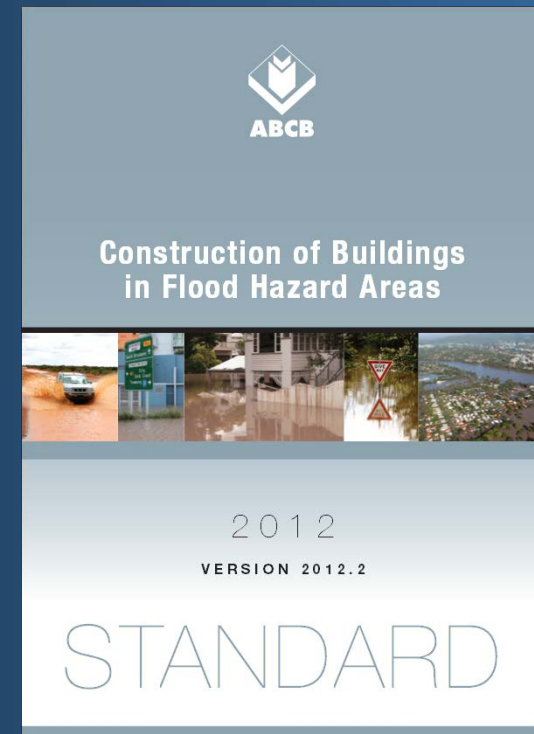
# What can be done? *Local*

- Displacement
- Barriers
  - Structural flood defences
  - Dry flood proofing
- Wet flood proofing



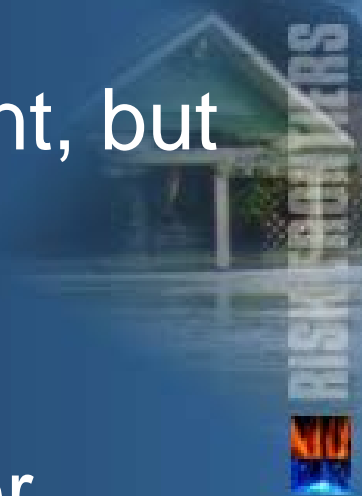
# What can be done? *Regulation*

- ABCB has developing a flood standard for new residential buildings (until 1 May 2013).
- NOT applicable in coastal zones!
- QDC adopt prior to BCA – not for rebuilding!



# Outcomes

- Updated tools for estimating financial loss and displacement probability.
- Buildings can be more flood resilient, but not always cheaply.
- New regulations will improve flood resilience of new buildings but older buildings remain a problem.



# Acknowledgements

- Geoscience Australia
- Qld Department of Community Safety
- Australian Building Codes Board
- Building Codes Qld
- Unnamed national insurer
- Unnamed insurance assessors
- Risk Frontiers staff: T. Okada, E. Phillips, J. O'Brien, P. Somerville

Matthew Mason  
Risk Frontiers  
Macquarie University  
Sydney, NSW  
[matthew.mason@mq.edu.au](mailto:matthew.mason@mq.edu.au)

