Student project

Key Topics:

- coastal [1]
- decision making [2]
- resilience [3]

Improving adaptation planning for future sea level rise and coastal flooding [4]
Preparing communities for sea level rise and increased coastal flooding is a difficult task. This research has helped advance the development and analysis of improved long-term coastal adaption strategies under the conditions of uncertainty. Billions of dollars of infrastructure in Australia could be threatened by rising sea levels by the end of the century. Although such timeframes appear distant, planning and development decisions made today will help to mitigate these future threats. Coastal infrastructure, such as roads, utilities, rail, residential and commercial buildings, often last between 20-100 years. This research developed an interdisciplinary approach to advance the planning of long-term adaptation pathways in the context of coastal flood risk management.

Research team

Student researcher

[5]

Dr Timothy Ramm
[5]
RESEARCH LEADER

UNIVERSITY of TASMANIA

[6]

Full description

Preparing communities for sea level rise and increased coastal flooding is a difficult task. This research has helped advance the development and analysis of improved long-term coastal adaption strategies under the conditions of uncertainty. Billions of dollars of infrastructure in Australia could be threatened by rising sea levels by the end of the century. Although such timeframes appear distant, planning and development decisions made today will help to mitigate these future threats. Coastal infrastructure, such as roads, utilities, rail, residential and commercial buildings, often last between 20-100 years. This research developed an interdisciplinary approach to advance the planning of long-term adaptation pathways in the context of coastal flood risk management.

Utilising three case studies in south east Australia, the study combines the strengths of robust decision making and dynamic adaptive policy pathways – both prominent tools to support decision making under conditions of uncertainty – together with solicited values-based information to make three novel advances towards flexible adaptation pathways planning. The findings can support local government in planning sustainable strategies to manage long-term flood impacts. This has global applications for coastal flood risk management that will become increasingly important throughout the coming century.

This project was completed in 2018.

Download:
Tim Ramm - Making better long-term coastal adaptation decisions [7]

Related News

21 FEB 2019

PhDs completed by students
EMERGENCY MANAGEMENT, FIRE

[8]

29 MAR 2018

Disaster reduction forum and research into floods, sea level rise and fire thunderstorms

COMMUNITIES, EMERGENCY MANAGEMENT

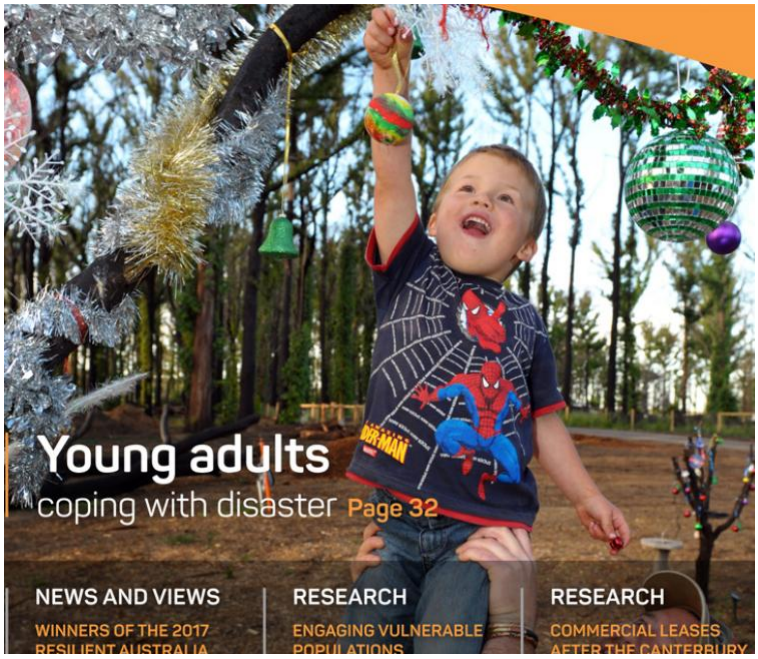
[9]

29 MAR 2018

Can your community cope with rising tides?

COASTAL, COMMUNITIES

[10]



01 FEB 2018

Journal focus on recovery and resilience

RECOVERY, RESILIENCE

[11]

13 SEP 2017

New online - September 2017

[12]

17 NOV 2016

New online - November 2016

[13]

Publications

Year	Type	Citation
2018	Journal Article	Ramm, T. [5], Watson, C. Stephen [14] & White, C. J. [15] **Describing adaptation tipping points in coastal flood risk management** [16]. *Computers, Environment and Urban Systems* **69,** (2018). DOI
2018	Journal Article	Ramm, T. [5], Watson, C. Stephen [14] & White, C. J. [15] **Strategic adaptation pathway planning to manage sea-level rise and changing coastal flood risk** [21]. *Environmental Science & Policy* **8**
2018	Thesis	Ramm, T. [5] **Improving adaptation planning for future sea level rise and coastal flooding** [26]. *Environmental Engineering* (2018). at <https://eprints.utas.edu.au/29624/ [27]> Google Scholar [28] E
2017	Journal Article	Ramm, T. [5], Graham, S. [31], White, C. J. [15] & Watson, C. Stephen [14]. **Advancing values-based approaches to climate change adaptation: A case study from Australia** [32]. *Environmental S*
2017	Journal Article	Ramm, T. [5], White, C. J. [15], Chan, A. H. C. [37] & Watson, C. Stephen [14]. **A review of methodologies applied in Australian practice to evaluate long-term coastal adaptation options** [38]. *Cl*
2015	Conference Paper	Ramm, T. [5] **Accounting for uncertainty in cost benefit analysis: A generalised framework for natural hazard adaptation in the coastal zone** [43]. *36th Hydrology and Water Resources Sympos*

Resources

DATE [48]	TITLE [49]	DOWNLOAD	KEY TOPICS
24 Oct 2016	Making fairer coastal adaptation decisions in an uncertain world [50]	303.77 KB	[51] (303.77 KB) coastal [1], decision making [2], resilience [3]
28 Oct 2016	Tim Ramm - Making better long-term coastal adaptation decisions [52]	0 bytes	[53] (0 bytes) coastal [1], decision making [2], resilience [3]
16 Mar 2018	Fire Australia Issue One 2018 [54]	5.37 MB	[55] (5.37 MB) coastal [1], emergency management [56], fire severity [57]
24 Jun 2019	The social values at risk from sea-level rise in Kingston Beach [58]	495.21 KB	[59] (495.21 KB) coastal [1], emergency management [56], flood [60]
06 Nov 2019	Adaption pathways to manage increasing coastal flood risk [61]	296.3 KB	[62] (296.3 KB) coastal [1], flood [60], storm surge [63]

Posters

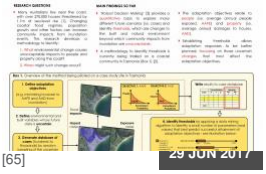
24 OCT 2016

Making better long-term coastal adaptation decisions under conditions of uncertainty

[64]

COASTAL [1], DECISION MAKING [2]

Coastal risks arise from a combination of hazards, community exposure and vulnerability. Often deterministic...



[65]

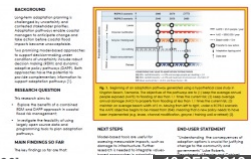
29 JUN 2017

Identifying risk thresholds in coastal communities to inform adaptation planning

[65]

COASTAL [1], DECISION MAKING [2]

The impact of changing coastal inundation hazards to people and property becomes increasingly uncertain...



[66]

19 SEP 2018

Planning strategic adaptation pathways to manage future coastal flood risk

[66]

COASTAL [1], DECISION MAKING [2]

Future sea level rise will exacerbate coastal flooding globally. Adaptation pathways provide a dynamic plan...

Linked Projects

Resilience to clustered disaster events on the coast - storm surge [67]

FLOOD AND COASTAL MANAGEMENT [68]

Dr Scott Nichol
Geoscience Australia [69]

[69]

Developing better predictions for extreme water levels [70]

FLOOD AND COASTAL MANAGEMENT [68]

Prof Charitha Pattiaratchi
University of Western Australia [71]

[71]