



5th Western Australian State

COASTAL CONFERENCE 2009

*Whose Coast Is It?
adapting for the future*

1D:

Coastal
Vulnerability:
2.30–3.00pm
Thursday 8th
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Sirius Room

Coastal Climate Change Risk Assessments in Australia: A View from the Beachface

PRESENTER:

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Introduction

Over the last 18 months there has been an explosion in activity to assess the potential impacts of climate change on the Australian coast (Figure 1). Coastal climate change assessments have been driven by programs and initiatives of all levels of Government, including (Kay *et al.*, 2009; Preston & Kay, in press) (*WA examples bracketed and italicised*):

- The Integrated Assessment of Human Settlements (IAHS) initiative—projects funded through the Australian Department of Climate Change (DCC). All five projects were completed by early 2009 (*no IAHS studies in WA*).
- National Coastal Vulnerability Assessment (NCVA) Case Studies—six pilot studies funded by the DCC to illustrate a range of policy issues, risks and threshold sensitivities related to climate change impacts. All NCVA projects are planned for completion during mid-2009 (*NCVA Pilbara study*).
- Local Adaptation Pathways Program (LAPP) Phases I & II—thirty-two Local Government assessment projects were selected on a competitive basis for the LAPP Phase I. These projects were to apply the Commonwealth's risk management framework (AGO 2006) using approved commercial providers in an attempt to standardise and quality-assure project outcomes (CZM is one provider). LAPP Phase I projects were scheduled for completion by 30 June 2009. A LAPP Phase II has already commenced with an increased emphasis on regional-scale projects. Seven projects have been funded and work is scheduled to commence in late 2009 (*LAPP I: Shire of Murchison, City of Mandurah, Southern Metropolitan Regional Council (SMRC), Eastern Metropolitan Regional Council (EMRC), Shire of Wongan Ballidu; LAPP II: Batavia ROC, Mid-West ROC*).
- Various projects and studies on climate change impacts and adaptation assessment, either directly funded by the Commonwealth or self-funded by Local Government or individual land developers

(in some cases as part of development approval processes) (e.g. Cottesloe (CZM & Damara, 2008); the Northern Agricultural Community Climate Adaptation Program (NACCAP); City of Stirling review of Scarborough Beach Urban Design Masterplan; Bridgewater North Bridgewater Climate Change Vulnerability & Adaptation Assessment (Kay, 2008)).

An initial analysis of the constraints and opportunities in the current approach to coastal climate change impact and adaptation assessments in Western Australia is presented. This draws on recent practical experience 'from the beachface' gained from participation in some of the above studies (Cottesloe, Mandurah, EMRC, Murchison, Bridgewater North, City of Stirling and Kakadu NCVA), international experience (e.g. CZM 2008), together with the outcomes of an initial national review (Preston & Kay, in press). The major lessons learnt from this practical experience are presented. Key challenges explored will include:

- Methodological issues related to:
 - The estimation of likelihood in Risk Assessment studies.
 - Identifying thresholds for change—quantifying relationships between process and response.
 - Identifying thresholds for action—setting social thresholds for implementation of adaptation actions.
- Aligning expectations with delivery:
 - Clearly communicating the trade-offs between strategic decision making versus on-ground management decisions for site-specific problems/issues.
 - Linking impact to adaptation—assessing impact at a level that enables movement beyond strategic adaptations to place-specific adaptation options.

Our experience suggests that the risk assessment framework used for many coastal climate change vulnerability studies will require significant tailoring in order to meet local demands of coastal managers and decision-makers who want to know **what** the threats of climate change are, **where** these could be, **when** impacts may occur, and importantly, what to do about it. For example, there may be scope to work on integrating elements of risk assessment frameworks together with the emerging focus on sediment cells as a basis for defining meaningful scales of assessments (*Eliot, I. pers comm*).

Finally, policy implications of the analysis will be presented to stimulate discussion by conference participants within the context of State, local government, private sector and community roles and responsibilities. The recent work undertaken by the State Government to develop an Issues Paper for the State Climate Change Adaptation and Mitigation Strategy will form the context of this discussion.

References

- Australian Greenhouse Office (AGO). (2006). Climate Change Impacts and Risk Management—A Guide for Business and Government. Report prepared for the Australian Greenhouse Office, Department of Environment and Water Resources, Commonwealth of Australia. <http://www.climatechange.gov.au/impacts/publications/risk-management.html>
- CZM Pty and Damara Ltd (2008) 'Vulnerability of the Cottesloe foreshore to the potential impacts of climate change.' Report prepared for the Town of Cottesloe, <http://www.cottesloe.wa.gov.au/?p=942>
- CZM Pty (2008) 'Coastal vulnerability and adaptation assessment: a contribution to the compendium of coastal resources tools and methodologies'. Submitted to the United Nations Framework Convention on Climate Change. CZM Pty, Perth, <http://www.coastalmanagement.com>
- Kay, R.C (2008) Climate Change and the Coast. Presentation to the Urban Development Institute of Australia (WA). One Day Sustainability Conference—The Climate Change Challenge, 16th September 2008. http://www.udiawa.com.au/upload/documents/1Events2008/CCC/Robert_Kay_Presentation.pdf
- Kay, R.C., Elrick, C. and Travers, A. (2009) Coastal Climate Change Risk Assessments in Australia: A View from the Beachface. Abstract Submitted to the WA Coastal Conference.
- Preston, B.L. and Kay, R.C (in press) Managing Climate Risk in Human Settlements. Proceedings of the Greenhouse 2009 Conference, Perth, 23–26 March 2009.

Figure 1 Overview of local-to-regional scale assessments in Australia (2004–2009)
(Preston and Kay, in press)

