
The Parliament of the Commonwealth of Australia

Managing our coastal zone in a changing climate

The time to act is now

House of Representatives
Standing Committee on Climate Change, Water, Environment and the Arts

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Canberra

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Foreword

When the Committee received the terms of reference for this inquiry, little did we appreciate the level of interest and engagement it was to generate. Although it has taken some 18 months to conclude our report, it was time well spent.

The issues of concern raised in over 100 written submissions and 180 exhibits are reflected in the contents of our report. Our appreciation goes to everyone who engaged in that process either by written submissions or as witnesses at one of the 28 public hearings held around Australia. We also thank those who took the time to organise a range of informative site visits.

One clear message emerged – and that is the need for national leadership in managing our precious coastal zone in the context of climate change. I am optimistic that the Australian Government will meet that challenge. Indeed, many of the initiatives already instituted by the Department of Climate Change head in that direction.

Our 47 recommendations go to the heart of how national leadership can be provided in a collaborative framework with state and local government and how we can better engage the community in this endeavour.

I thank Committee Members for their bipartisan support on an issue of such national importance. The Committee secretariat, headed by Julia Morris, provided excellent administrative and research support. Thanks go to Dr Kate Sullivan, Inquiry Secretary, for her commitment, knowledge and enthusiasm.

It's one thing to read about the science but another to see first hand, as we did, the obvious and early negative consequences of climate change on our coastal zone. We trust our recommendations chart the way forward in better managing our coastal zone and giving practical expression to the theme: *'The time to act is now.'*

Jennie George MP
Chair



Membership of the Committee

Chair	Ms Jennie George MP
Deputy Chair	Dr Mal Washer MP
Members	The Hon John Cobb MP Mrs Yvette D' Ath MP (to 16/3/09) Mr Mark Dreyfus QC, MP Mrs Julia Irwin MP Ms Kirsten Livermore MP Ms Nola Marino MP (from 10/11/08) The Hon John Murphy MP (from 16/3/09) The Hon Bruce Scott MP Mr Jason Wood MP (to 10/11/08) Mr Tony Zappia MP

Committee Secretariat

Secretary	Ms Julia Morris (from 25 May 2009) ¹
Inquiry Secretary	Dr Kate Sullivan
Senior Research Officer	Ms Sophia Nicolle (from 22 June 2009)
Research Officer	Ms Adrienne Batts (to 19 June 2009)
Administrative Officers	Ms Kane Moir (from 4 May 2009) Ms Jazmine Rakic (to 12 June 2009)

¹ Ms Janet Holmes, Mr Richard Selth and Mr Peter Keele also held the position of Secretary for various periods from January 2008 through to April 2009. Ms Natalya Wells provided research support for the secretariat for a six-week period in mid 2009.



Terms of reference

The Committee will inquire into and report on issues related to climate change and environmental pressures experienced by Australian coastal areas, particularly in the context of coastal population growth. The inquiry will have particular regard to:

- existing policies and programs related to coastal zone management, taking in the catchment-coast-ocean continuum
- the environmental impacts of coastal population growth and mechanisms to promote sustainable use of coastal resources
- the impact of climate change on coastal areas and strategies to deal with climate change adaptation, particularly in response to projected sea level rise
- mechanisms to promote sustainable coastal communities
- governance and institutional arrangements for the coastal zone



List of recommendations

1 Introduction

Recommendation 1

The Committee recommends that the Australian Government commission a study on international coastal zone governance arrangements, policies and programs for addressing coastal climate change impacts, and adaptation strategies. The completed study should be made public.

2 Climate change and the coastal zone: the science and the impacts

Recommendation 2

The Committee notes the importance of mitigation measures in addressing climate change impacts and accordingly recommends that the Australian Government continue to take urgent action to ensure that Australia can best contribute to a reduction in global greenhouse gas emissions.

Recommendation 3

The Committee recommends that the Australian Government increase its investment in coastal based climate change research on:

- sea level rise projections and the dynamics of polar ice sheets, particularly in the Antarctic
- extreme sea level events, including as a result of storm surge and tropical cyclones
- regional variations in sea level rise
- ocean acidification, particularly impacts on Australia's coral reefs, higher ocean temperatures and changing ocean currents

Recommendation 4

The Committee recommends that the coastal zone component of the National Climate Change Science Framework and proposed National Climate Change Science strategy be clearly identified by the proposed high level coordination group and involve key coastal stakeholders.

3 Climate change and the coastal zone: adaptation strategies and practices to promote resilience

Recommendation 5

The Committee recommends that the Department of Climate Change continue to fund research to:

- establish the wave climate around the coast so as to identify those locations most at risk from wave erosion
- examine how the wave climate nationally interacts with varying landform types

Recommendation 6

The Committee recommends that the Australian Government continue funding under the Climate Change Adaptation Skills for Professionals Program. In addition, the Australian Government should liaise with tertiary institutions to ensure an adequate supply of appropriately skilled coastal planners and engineers.

Recommendation 7

The Committee recommends that the Australian Government:

- continue the Local Adaptation Pathways Program as a competitive funding program
- review the program's guidelines to secure better outcomes by:
 - ⇒ use of consistent methodology for vulnerability assessments
 - ⇒ evaluation of the outcomes of the projects that are undertaken with the grants
 - ⇒ encouraging regional applications from local councils whenever possible

Recommendation 8

The Committee recommends that the Department of Climate Change share all data collected through vulnerability assessments undertaken as part of the Australian Government Local Adaptation Pathways Program on the proposed National Coastal Zone Database (see also recommendation 42).

Recommendation 9

The Committee recommends that the Australian Government establish a coastal zone research network within the National Climate Change Adaptation Research Facility and that it complete a coastal zone research plan.

Recommendation 10

The Committee recommends that:

- the Department of Infrastructure, Transport, Regional Development and Local Government undertake a study into the human and resourcing needs of local governments to effectively plan for and adapt to the impacts of climate change
- this study be carried out in conjunction with the Australian Local Government Association and the National Sea Change Taskforce

Recommendation 11

The Committee recommends that the Australian Government establish a National Coastal Zone Database to improve access to and consistency of information relevant to coastal zone adaptation. The National Coastal Zone Database should be an online portal that allows ready access to:

- 'first pass' National Coastal Vulnerability Assessment data
- state and local Digital Elevation Modelling
- National Climate Change Adaptation Research Facility reports
- federal Local Adaptation Pathways Program reports
- state and local coastal vulnerability assessment results

Recommendation 12

The Committee recommends that, following the completion of the 'first pass' National Coastal Vulnerability Assessment, the Australian Government consider the resourcing and financing of second and third pass assessments, in conjunction with state, territory and local government authorities.

Recommendation 13

The Committee recommends that the Australian Government take urgent action to protect Australians from the threats of dengue fever and chikungunya virus. The knowledge gaps identified by the National Climate Change Adaptation Research Facility research plan with regards to the relationship between climate variation and vector-borne disease should be urgently addressed. The Australian Government should:

- undertake research into the relationship between climate change and vector-borne disease
- produce modelling to allow for advanced early warning of impending threats from vector-borne disease
- continue to work towards producing a structured national framework for dealing with mosquito outbreaks in Australia
- increase biosecurity measures to better protect against chikungunya virus entering Australia

Recommendation 14

To further enhance Australia's disaster mitigation, preparedness, response and recovery arrangements in the event of possible major coastal disasters, the Committee recommends that the Australian Government establish a grants program, the Coastal Natural Disaster Mitigation Program, to fund natural disaster mitigation projects in the Australian coastal zone.

The Committee also recommends that the Australian Emergency Management Committee (AEMC) consider the following issues:

- improved data on coastal disaster risk assessment and vulnerable coastal sites
- improved access and evacuation routes for coastal communities
- improved coastal community awareness of and resilience to natural disasters
- improved coordination of coastal disaster mitigation arrangements with other initiatives currently underway, such as reviews of the Australian Building Code and land use planning policies to take into account climate change impacts
- improved early warning systems for coastal areas in the event of an extreme sea level event (storm surge, erosion, flooding)

The Committee further recommends that the AEMC provide a report on these matters to the Ministerial Council for Police and Emergency Management.

Recommendation 15

The Committee recommends that the Australian Government, through the Ministerial Council for Police and Emergency Management, recognise the extensive Surf Life Saving Australia network and take appropriate steps to integrate this network into emergency services preparedness, planning, and response systems and activities.

Recommendation 16

The Committee notes that major initiatives relating to climate change adaptation risk assessment and infrastructure are currently in progress. Given that much of Australia's infrastructure is in the coastal zone and the particular threats facing the coastal zone from climate change, involving significant socioeconomic costs, the Committee recommends that the Australian Government ensure there is a comprehensive national assessment of coastal infrastructure vulnerability to inundation from sea level rise and extreme sea level events.

Recommendation 17

The Committee recommends that the Department of Climate Change, in collaboration with the Queensland Government, CSIRO and Indigenous communities in the Torres Strait, undertake a major study into the vulnerability of the Torres Strait to the impacts of climate change and provide assistance in the development of an adaptation plan.

Recommendation 18

The Committee recommends that the Australian Government give the five recommendations calling for information, studies and data, as proposed by the Torres Strait Regional Authority, early and urgent consideration with a view to their implementation.

4 Key emerging issues: insurance, planning and legal matters relating to the coastal zone

Recommendation 19

The Committee recommends that the Australian Government request the Productivity Commission to undertake an inquiry into the projected impacts of climate change and related insurance matters, with a particular focus on:

- insurance coverage of coastal properties, given the concentration of Australia's population and infrastructure along the coast
- estimates of the value of properties potentially exposed to this risk
- insurance affordability, availability and uptake
- existing and emerging gaps in insurance coverage, with a particular focus on coverage of coastal risks such as storm surge/inundation, landslip/erosion and sea level rise (including the combined effects of sea inundation and riverine flooding)
- the need for a clear definition of the circumstances under which an insurance claim is payable due to storm surge/inundation, landslip/erosion and sea level rise, as well as due to permanent submersion of some or all of the land
- the possibility of a government instrument that prohibits continued occupation of the land or future building development on the property due to sea hazard
- gaps in the information needed to properly assess insurance risk and availability of nationally consistent data on climate change risks
- examining the key actions for governments proposed by the Insurance Council of Australia and the Insurance Australia Group in their submissions to this inquiry
- possible responses to a withdrawal of insurance for certain risks or regions, noting the increased burden this could place on government and taxpayers

Recommendation 20

The Committee notes the Council of Australian Governments initiative (through the Local Government and Planning Ministers Council) to develop state-specific climate change planning policies by mid 2011, to inform local governments and regional planning responses to climate change. The Committee recommends that the Australian Government ensure that the outcomes of this initiative are included as part of the action plan under the proposed new Intergovernmental Agreement on the Coastal Zone.

Recommendation 21

The Committee recommends that the Australian Government consider the benefits of adopting a nationally consistent sea level rise planning benchmark and, if so, whether this be done on a statutory basis or otherwise. The outcomes of this consideration should then be included as part of the action plan for the proposed Intergovernmental Agreement on the Coastal Zone.

Recommendation 22

The Committee recommends that the Building Code of Australia, including cyclone building codes, be revised with the objective of increasing resilience to climate change.

Recommendation 23

Noting the gap in research on legal issues and climate change impacts on the coastal zone, the Committee recommends that the Australian Government request that the Australian Law Reform Commission undertake an urgent inquiry into this area, with particular focus on:

- clarification of liability issues with regard to public authorities acting or not acting in terms of climate change adaptation and possible coastal hazards (eg legal basis to implement adaptation strategies of protect, redesign, rebuild, elevate, relocate and retreat)
- clarification of liability issues with regard to private property holders acting to protect their properties from the impacts of climate change
- legal issues associated with the impacts of climate change on existing developments, as opposed to planned new developments
- mechanisms to ensure mandatory risk disclosure to the public about climate change risks and coastal hazards (eg legislation harmonised across all states requiring mandatory disclosure of all known and predicted risk data by state and local governments to property purchasers during property conveyance and title search processes)
- whether there should be broader indemnification of local government authorities

5 Sustainable coastal communities and environmental impacts on the coastal zone

Recommendation 24

The Committee recommends that the Australian Government, through the Council of Australian Governments process, examine the establishment of a system of national coastal zone environmental accounts, employing the model developed by the South East Queensland Healthy Waterways Partnership.

Recommendation 25

The Committee recommends that the Australian Government, through the Australian Bureau of Statistics, ensure that:

- accurate and consistent methods of measuring the numbers and the impact of tourists and other non-residents in coastal areas are undertaken to enable resources to be better matched with demand for infrastructure and services
- improved data on long-term demographic trends in coastal areas is made available to assist in coastal zone planning and management

Recommendation 26

The Committee recommends that the Australian Government:

- expand the list of national priority areas identified under the Caring for our Country program to include climate change impacts on biodiversity
- give consideration in future funding rounds to projects that:
 - ⇒ involve working with state/territory and local governments to improve coastal land use planning
 - ⇒ seek to address loss of coastal habitat as a result of coastal development and population pressures

Recommendation 27

The Committee recommends that, in seeking to expand the area protected within Australia's National Reserve System (NRS) under the Caring for our Country program, the Australian Government focus on high biodiversity coastal habitat, including more effective off-reserve coastal zone conservation and expanded coastal reserves that provide larger buffer zones. In undertaking this initiative, the Australian Government should continue to work with state/territory and local governments, Indigenous groups, conservation organisations, private landholders and other stakeholders to ensure that these protected areas are added to the NRS in a timely manner.

Recommendation 28

The Committee recommends that the Australian Government, in considering its response to the Independent Review of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), take into account concerns about the EPBC Act and coastal zone management raised as part of this inquiry – in particular, the need to address the cumulative impacts of coastal development. This could be achieved by numerous means, including:

- a land clearing trigger
- defining coastal ecosystems as a matter of national environmental significance
- making more use of landscape-scale assessments through strategic assessments or bioregional plans

Recommendation 29

The Committee recommends that the Australian Government:

- continue working with the Queensland Government and local councils under the existing Great Barrier Reef Intergovernmental Agreement to improve land use planning in the catchment
- commission analysis of the Great Barrier Reef as a case study for integrated coastal zone management (ICZM) in Australia. The study should draw out possible directions for ICZM in Australia with regard to:
 - ⇒ addressing challenges associated with climate change impacts on biodiversity

-
- ⇒ declining water quality from catchment runoff and loss of coastal habitat from coastal development and population pressures
 - ⇒ building cooperative partnerships between Commonwealth, state and local government, and other stakeholders
 - ⇒ establishing governance and institutional frameworks

Recommendation 30

The Committee recommends that the Australian Government urgently commission a detailed climate change vulnerability assessment for Kakadu National Park, in consultation with the park's traditional owners and other stakeholders and drawing on the results of the 'first pass' National Coastal Vulnerability Assessment of the park. This assessment should specifically focus on the vulnerability of Kakadu's freshwater wetland systems to saltwater intrusion. A key outcome of the assessment should be the development of a Climate Change Action Plan for Kakadu National Park, with coordinated input from the Australian Government and Northern Territory Government, Indigenous land owners, researchers and other stakeholders.

Recommendation 31

The Committee recommends that the Australian Government:

- require that all Ramsar listed wetlands have effective and operational management plans and that resources are allocated by governments to monitor the implementation of these plans
- increase the number of coastal wetlands classified as Ramsar sites, particularly those classified as Nationally Important wetlands
- work with state and territory governments through the Natural Resource Management Ministerial Council, and in consultation with other stakeholders, to improve the management and monitoring of coastal wetlands, particularly Ramsar sites located in close proximity to development
- improve public awareness about what actions impacting on a Ramsar wetland should be referred to the Minister under the *Environment Protection and Biodiversity Conservation Act 1999*
- ensure that the National Guidelines for Ramsar Wetlands also include modules on the process for nominating Ramsar wetlands

- develop a climate change action plan for coastal Ramsar wetlands and Nationally Important wetlands

Recommendation 32

The Committee recommends that the Australian Government:

- work through the Natural Resource Management Ministerial Council and in consultation with Birds Australia and other stakeholders to implement a National Shorebirds Protection Strategy. The strategy should focus on tightening restrictions on beach driving and access to bird breeding habitat, preserving habitat, identifying suitable buffer zones for migration of coastal bird habitat, managing pest animals and increased public education
- provide further funding to Birds Australia and other research groups to ensure continued monitoring and data collection with regard to migratory and resident shorebirds
- provide funding to strengthen partnerships between domestic and international shorebird conservation groups to increase awareness and conservation efforts in other countries
- commission a detailed climate change impact study on Australia's migratory and resident shorebirds
- in its consideration of amendments to the *Environment Protection and Biodiversity Conservation Act 1999* following the independent review, give consideration to the formal listing of coastal shorebird and sea bird communities as threatened species/ecological communities under the act

Recommendation 33

The Committee recommends that the Australian Government:

- work with the Natural Resource Management Ministerial Council and other stakeholders to develop an action plan to:
 - ⇒ ensure that coastal buffers, coastal habitat corridors and high ecological value areas are identified and included in Commonwealth, state and local government management processes
 - ⇒ ensure appropriate infrastructure planning and that land is made available to allow for the migration of coastal ecosystems

- ⇒ promote cooperative ecosystem-based planning and management approaches across jurisdictions
- ⇒ implement a nationally consistent coastal and marine biodiversity monitoring and reporting framework
- ⇒ develop a targeted strategy to address key gaps in knowledge of coastal and marine biodiversity and improve access and sharing of knowledge and data
- ⇒ develop regional climate change adaptation policies and plans and integrate them into coastal and marine bioregional planning processes
- ensure that all future national coastal zone policy incorporates these priorities, as well as future revised national sustainability, biodiversity, climate change and environmental policy frameworks

Recommendation 34

The Committee recommends that coastal based Natural Resource Management bodies seeking funding under the Caring for our Country program have coastal and marine priorities, as well as coastal zone management principles integrated in their management plans.

Recommendation 35

The Committee recommends that the Australian Government, in consultation with Indigenous Australians and other coastal stakeholders, commission work to provide a national repository identifying Indigenous and non-Indigenous cultural heritage sites in vulnerable coastal areas.

Recommendation 36

The Committee recommends that the Australian Government urgently commission further research on socioeconomic vulnerability to climate change impacts, particularly in coastal communities.

Recommendation 37

The Committee recommends that the Australian Government:

- consider the Victorian Government's model of a sustainable coastal community as part of the proposed Intergovernmental Agreement on the Coastal Zone to be concluded through the Council of Australian Governments
- ensure an early response to the recommendations provided in the Sustainability for Survival: Creating a Climate for Change – Inquiry into a Sustainability Charter report and the Sustainable Cities report

6 Governance arrangements and the coastal zone

Recommendation 38

The Committee recommends that the Australian Government request that the Centre for Excellence for Local Government ensure a particular focus on capacity building for coastal local councils. Capacity building should focus on addressing issues relating to:

- population growth pressure
- planning and design of new infrastructure
- integrated coastal zone management
- climate change impacts and adaptation

Recommendation 39

The Committee recommends that the Australian Government give consideration to establishing a separate funding program for infrastructure enhancement in coastal areas vulnerable to climate change. Such funding should be provided according to a formula requiring contributions, either financial or in-kind, from state governments and relevant local government authorities.

Recommendation 40

The Committee recommends that the Australian Government undertake an awareness campaign to alert coastal communities to the key challenges facing the coastal zone and the value of community engagement in addressing these challenges. The campaign should aim to build understanding and awareness of coastal management issues to encourage the continued membership and support of volunteer networks in the coastal zone.

Recommendation 41

The Committee recommends that the Australian Government nominate 2012 as the Year of the Coast, to further build community awareness about the issues facing the coastal zone. The Australian Government should work with coastal stakeholders, volunteer groups and the general community in determining key activities as part of this initiative.

Recommendation 42

The Committee recommends that the National Coastal Zone Database be expanded over time to include information on environmental data and management and planning information relevant to the coastal zone.

Recommendation 43

The Committee recommends that the Australian Government provide funding support for the ongoing activities of the Australian Coastal Alliance in providing a national information and communication interface between research organisations and local government authorities and other coastal stakeholders.

Recommendation 44

The Committee recommends that the Australian Government, in cooperation with state, territory and local governments, and in consultation with coastal stakeholders, develop an Intergovernmental Agreement on the Coastal Zone to be endorsed by the Council of Australian Governments. The intergovernmental agreement should:

- define the roles and responsibilities of the three tiers of government – federal, state and local – involved in coastal zone management
- include a formal mechanism for community consultation
- incorporate principles based on strategic regional coastal planning and landscape scale/ecosystem based coastal zone management
- include an effective implementation plan with resources allocated to ensure that objectives are realised
- be overseen by a new Coastal Zone Ministerial Council
- be made public

Recommendation 45

The Committee recommends that the Australian Government:

- ensure that the Intergovernmental Agreement on the Coastal Zone forms the basis for a National Coastal Zone Policy and Strategy, which should set out the principles, objectives and actions that must be undertaken to address the challenges of integrated coastal zone management for Australia
- establish a broad based National Catchment-Coast-Marine Management program to provide funding for initiatives relating to:
 - ⇒ sustainable coastal communities
 - ⇒ climate change and biodiversity
 - ⇒ implementation of projects to progress integrated coastal zone management
- establish a National Coastal Zone Management Unit within the Department of Environment, Water, Heritage and the Arts to support the implementation of these national initiatives
- develop a Coastal Sustainability Charter based on the Victorian Government model

Recommendation 46

The Committee recommends that the Australian Government establish a National Coastal Advisory Council to:

- provide independent advice to government
- advise the new coastal unit within the Department of the Environment, Water, Heritage and the Arts
- ensure community input into national coastal zone policy, planning and management

Recommendation 47

The Committee recommends that proposals for a National Oceans and Coast Act and a statutory Coastal Council be the subject of ongoing consideration once the Intergovernmental Coastal Zone Agreement is determined.

