
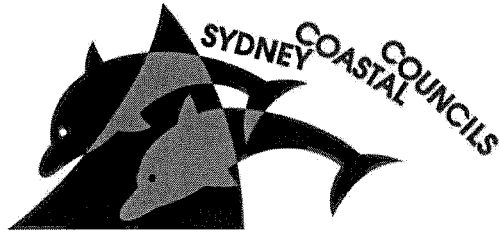


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SYDNEY COASTAL COUNCILS GROUP Inc.  
C/- City of Sydney Council  
Level 14, 456 Kent Street  
GPO Box 1591, SYDNEY NSW 2001  
Phone: (02) 9246 7791  
Facsimile: (02) 9265 9660  
Email: [info@sydneycoastalcouncils.com.au](mailto:info@sydneycoastalcouncils.com.au)  
Internet: [www.sydneycoastalcouncils.com.au](http://www.sydneycoastalcouncils.com.au)  
ABN: 39 638 876 538



CM026-08

The Secretary  
Standing Committee on Climate Change, Water, Environment and the Arts  
House of Representatives  
Parliament House  
PO Box 6021  
Canberra ACT 2600

6 June 2008

***Inquiry into climate change and environmental impacts on coastal communities***

The Sydney Coastal Councils Group (SCCG) is pleased to provide input into the *Inquiry into climate change and environmental impacts of coastal communities*. To address the Terms of Reference for the inquiry, this submission is structured into the following sections:

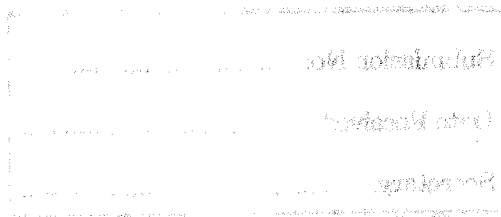
1. Introduction
2. Existing policies and programs related to coastal zone management, taking in the catchment-coast-ocean continuum
3. The environmental impacts of coastal population growth and mechanisms to promote sustainable use of coastal resources
4. The impact of climate change on coastal areas and strategies to deal with climate change adaptation, particularly in response to projected sea level rise
5. Mechanisms to promote sustainable coastal communities
6. Governance and institutional arrangements for the coastal zone
7. Conclusion

Attachment  
Sydney Coastal Councils Group climate change activities

**1. Introduction**

In preparation for this submission the SCCG has surveyed each of its 15 Member Councils to provide a position that is representative of the Sydney coastal region. The SCCG member councils are committed to ensuring coastal communities are prepared for the potential impacts of climate change.

The loss of a national focus on Integrated Coastal Zone Management (ICZM) and the reduced number of initiatives funded by Federal and State Governments in coastal zone management over the last 5-6 years is of significant concern. Federal initiatives lost include very successful national programs such as the Coast and Clean Seas Program and the community focused Coastcare program. Additionally, in NSW there has also been significant reduction in the level of funding and technical expertise provided by the State to Local Government in relation to supporting coastal management initiatives.



The SCCG believes the role of Local Government in providing locally appropriate strategies and solutions to manage the local and regional challenges faced in the coastal zone has been neglected and undervalued by State and Federal government in recent times. This needs to be urgently addressed to ensure that councils are empowered to address the significant issues communities face associated with a rapidly changing climate.

ICZM requires the consideration of more issues than solely the management of natural resources. It involves the integration of Natural Resource Management into the many substantial issues relating to social, cultural and economic values and uses of the coastal zone. It is acknowledged that the Australian coastal zone is the major contributor to the nation's GDP and requires specialist and focused attention to ensure its sustainability. Based on Australian Bureau of Statistics assessments, the coastal zone, constituting more than 80% of the national population, is facing alarming population growth over the next few decades which will create a number of significant planning and environmental pressures.

With guidance and assistance from State and Federal Governments, Local Government is well placed to assist local communities manage the likely impacts of climate change in the coastal zone. To adequately respond and adapt to climate change Local Government requires guidance and assistance from State and Federal Governments in the following areas:

- Defining the roles and responsibilities of each sphere of Government;
- Legislative, policy and regulatory guidance;
- Information and data provision;
- Trial initiatives and demonstration projects;
- Programs that build adaptive capacity;
- New funding and investment strategies; and
- Monitoring and evaluation programs.

Therefore, the SCCG strongly urges the Inquiry to ensure full consideration of climate change issues in the coastal zone and the role Local Government will play in addressing these issues when making its recommendations.

## **2. Existing policies and programs related to coastal zone management, taking in the catchment-coast-ocean continuum**

There are currently few statutory obligations placed on councils in NSW to address climate change within their existing policies and programs. Therefore, councils retain significant discretion in the policy and programs they implement in response to climate change (NSW Environmental Defenders Office 2008). Guidance from both State and Federal Governments is required in statutory, common law and non-statutory contexts to prevent the fragmented and ad-hoc implementation of policies and programs.

### **Statutory**

To assist councils integrate climate change considerations into areas such as strategic planning and development assessment requires legislative and regulatory guidance from State and Federal Governments. The development of standard strategic planning objectives, model planning provisions, building codes and implementation programs are essential to ensuring that management responses to climate change are consistent and undertaken within the appropriate temporal and special contexts.

Within the current legislative framework in NSW, councils are provided with very little guidance as to how they meaningfully integrate climate change considerations into their statutory responsibilities. Coastal councils in NSW must consider climate change through the implementation of their Local Environment Plans and delivery of a range of management plans including but not limited to coastline, estuarine and floodplain management plans as well as water and energy savings plans. At present councils are not provided with the necessary advice, model provisions or funding support to ensure these actions are undertaken and monitored adequately nor consistently across Local Government Areas. Additionally, a legislative requirement to “consider” climate change in the preparation and implementation of plans has not necessarily translated to the adequate integration of climate change considerations into development assessment.

Current processes fail to offer councils direction as to what magnitude of climate change impacts they should be planning for or within what planning horizons to be making management decisions. Further, the lack of guidance offered to councils through regional and sub-regional strategic planning processes has left many councils unsure as to how to respond to the potential threats of climate change to integrated or conflicting legislative and policy requirements.

To address these issues, the SCCG strongly recommends the development of national, state and regional frameworks that assist in identifying and implementing opportunities for delivery of climate change management options through statutory process such as strategic planning, implementation of Environmental Planning Instruments and the necessary development assessment, and development of an Australian Standard for climate change risk management.

#### **Common Law**

The absence of a clear statutory duty to undertake activities that reduce or take into account climate change impacts does not mean that under a common law duty of care all spheres of Government can will avoid liability for not undertaking actions that reduce or take into account climate change impacts. At present there is a high degree of uncertainty in relation to current and future climate change liability. If left unaddressed this uncertainty will continue to have a significant impact on decision making processes and information disclosure in relation to climate change hazards.

Whether a ‘duty of care’ exists is determined by examining the relationship between the relevant parties. Factors of relevance include control, the vulnerability of one of the parties, knowledge of the risk of harm and the closeness of the parties. The uncertainty for factors such as control and knowledge of the risk of harm must be addressed consistently at a national scale.

The NSW *Local Government Act 1993* exempts councils from liability for negligence in relation to their activities that relate to flooding and coastal hazards if councils have the appropriate management plans developed in accordance with the appropriate State Government Management Manuals. This applies to the assessment of development applications, the drafting of building standards, and the making of Local Environmental Plans.

The current level of indemnity provided to councils in NSW however does not cover all potential risks posed to communities in the coastal zone. To address this in NSW, the SCCG believes that the indemnity provisions of s733 of the NSW *Local Government Act 1993* should be extended to include the management of all natural hazards (not just

flood and coastal) that will be exacerbated by climate change.

### **Non-Statutory**

As noted above there are currently few statutory obligations placed on councils in NSW to address climate change. Therefore, the manner through which councils respond and adapt to climate change is largely voluntary and therefore lacks coordination and consistency. Additionally, the capacity and expertise of councils to respond positively to the potential impacts of climate change is highly variable and transient across the coastal zone of NSW.

Councils can choose to voluntarily participate in programs such as Cities for Climate Protection, Local Emissions Trading Schemes or Local Government Area (LGA) specific strategies to reduce carbon emissions. Unfortunately, not all councils have the capacity or desire to participate in these programs, leaving significant gaps in the implementation of voluntary initiatives and the ongoing learning and monitoring of councils across NSW.

To address this, State and Federal Governments must prioritise key programs that assist all coastal councils within Australia respond to the impacts of climate change in the coastal zone. Additionally, investment strategies that ensure the coordinated implementation of voluntary mitigation and adaptation activities, such as Cities of Climate Protection, should be maintained and promoted to all councils in Australia.

To address the issues highlighted for this Term of Reference the SCCG recommends the following activities.

#### **Recommended actions:**

##### **Statutory**

The inquiry recommends that a systematic review of all relevant environmental planning policies and legislation is undertaken and ensure that adequate and nationally unified provisions are made to appropriately mitigate and adapt to climate change.

The inquiry identifies the need and nominates responsibility for the provision of model policy and planning provisions for inclusion in:

- State and Federal policies and Acts;
- National, State, Regional and Local Strategic Plans;
- Environmental Planning Instruments;
- Local development controls; and
- National and State Building codes for assets at risk in the coastal zone.
- An Australian Standard for climate change risk management

##### **Common Law**

The inquiry recognises that the definitions relevant to common law including *control* and *knowledge of the risk of harm* must be addressed consistently at a national scale.

The inquiry recommends the exploration of relevant state and national indemnity provisions for Local Government. Including the indemnity provisions of s733 of the NSW *Local Government Act 1993* being extended to include the management of all natural hazards (not just flood and coastal) that will be exacerbated by climate change.

**Non-Statutory**

The inquiry identifies the need for coordinated and integrated policies and programs to minimise the national carbon footprint including the necessary supporting programs to;

- Enact a national emissions trading scheme;
- Introduce national energy, fuel and building efficiency standards; and
- Develop clean and renewable energy production technologies.

The inquiry recommends that national strategies for benchmarking, planning, monitoring and evaluation of mitigation and adaptation programs continue to be funded by the Federal Government.

**3. The environmental impacts of coastal population growth and mechanisms to promote sustainable use of coastal resources**

Based on Department of Planning and Australian Bureau of Statistics assessment, the NSW coastal zone contains more the 80% of the states population and will experience population growth of up to 60% over the next 20-25 years. Nationally, the Seachange Taskforce, have estimated population growth of 1 million people to regional coastal areas over the next 15 years.

Minimising the environmental impacts of coastal population growth in Greenfield sites requires careful and controlled planning. Planning for population in the coastal zone throughout Australia must focus on expanding existing coastal centres and minimising the spread of new development outside these areas.

To manage the environmental impacts of coastal populations in highly urbanised areas such as the Greater Metropolitan Region of Sydney requires a focus on:

- Infrastructure management;
- Maintaining existing amenity and ecological services;
- Associated capacity building programs; and
- Sound risk management and emergency response.

**Infrastructure Management**

The stormwater, sewer and transport infrastructure in urban coastal environments such Sydney is in need of renewal and often operating beyond its intended capacity. The likely increase in extreme events such as rainfall and storm surge combined with increased commercial, residential and tourism pressures will place future pressure on councils to maintain or replace the associated infrastructure assets.

To assist with prioritising spending on key infrastructure maintenance and upgrades, a national, state, regional and local inventory of existing essential infrastructure is required. Such an inventory would identify key infrastructure likely to be adversely impacted by climate change and population change as well as assist in prioritising spending on the necessary maintenance and replacement works.

Councils have limited financial capacity to respond to the increased pressures on the existing infrastructure posed by climate change. Therefore the SCCG recommends the Federal Government investigate opportunities, including the Building Australian Fund, to provide financial assistance to councils (and State agencies where appropriate) in order

to undertake annual renewal and maintenance works for essential infrastructure of regional significance that may be adversely affected by the impacts of climate change and population change. SCCG strongly urges the inquiry to recognise that preventative expenditure on infrastructure renewal and maintenance will result in significant future cost savings to the Australian public.

### **Maintaining existing amenity and ecological services**

Climate change will have a negative impact on the existing amenity and ecological services of all coastal environments. In maintaining the existing amenity and ecological services it is important that management decisions ensure the iconic status and existing ecological values of the coastal zone are maintained for future generations.

In large urban coastal centres such as Sydney the existing ecosystems and beach environments provide a broad range of ecological, social, cultural and economic benefits. These values must be maintained and protected from the potential impacts of climate change. This will require the implementation of investment programs to undertake the necessary research and application of appropriate management responses.

To achieve this, the SCCG recommends:

- Federal and State Governments work with councils to identify and prioritise management actions that protect the existing access, amenity and ecological services of coastal environment in Australia; and
- Opportunities for strengthening existing legislation and regulation in order to protect vulnerable threatened species, populations and communities impacted by climate change be explored and implemented at the appropriate scale and locations.

### **Sound risk management and emergency response**

Minimising the potential ecological, social, cultural and economic costs of climate change will require the implementation of sound risk management responses across all spheres of Government. Through activities such as the development and implementation of plans including coastline, estuarine and floodplain management plans councils already participate in some processes that provide an appropriate model to assess and manage risk in a strategic and efficient manner.

Without increased guidance and funding support from State and Federal Governments the capacity of councils to integrate climate change considerations into these activities is very limited. To address this, the SCCG recommends that State and Federal Governments revise the existing management policies, manuals and funding strategies for all hazards likely to be caused or exacerbated by climate change.

With a likely increase in the intensity of extreme events such as rainfall, flooding and storm surge, defining responsibilities and improving emergency response practices are also needed to guarantee the safety of coastal communities and appropriate disaster recovery. To address this the SCCG recommends that the Federal Government work with councils to develop nationally consistent emergency response provisions and agreed actions for all combat agencies in the event of damage to or loss of public and private property and assets in the coastal zone.

To address the issues highlighted for this Term of Reference the SCCG recommends the following activities.

**Recommended actions:**

The inquiry identifies the need for a national, state, regional and local inventory of existing essential infrastructure and management tools. This to include the appropriately scaled geospatial maps and associated scenario modelling applications needed to adapt to a changing climate.

The inquiry recommends that the Federal Governments investigate opportunities, including the Building Australia Fund, to provide financial assistance to councils in order to properly assess and then undertake annual renewal and maintenance works for infrastructure of regional significance that may be adversely affected by the impacts of climate change and population change.

The inquiry recommends Federal and State Governments work with councils to identify and prioritise management actions that protect access, existing amenity and ecological services of coastal environment in Australia; and

The inquiry recommends that opportunities for strengthening existing legislation and regulation in order to protect vulnerable threatened species, populations and communities impacted by climate change be explored and implemented at the appropriate scale and locations.

The inquiry identify the need for a revision of existing State and Federal management policies, manuals and funding strategies for all hazards likely to be caused or exacerbated by climate change.

The inquiry recommends that Federal and State Governments work with councils to develop nationally consistent emergency response provisions. This to include agreed responsibility and actions for all combat agencies in the event of damage to or loss of public and private property and assets in the coastal zone.

**4. The impact of climate change on coastal areas and strategies to deal with climate change adaptation, particularly in response to projected sea level rise**

The uncertainty surrounding the local impacts of climate change presents a significant problem for Local Government in developing and implementing strategies to respond in an economically efficient and timely manner. The development of programs that map potential risks and integrate climate change science and research into clear management responses should not be limited to sea level rise, but extended to the following issues:

- Storm surge;
- Beach erosion/Cliff instability;
- Biodiversity loss and maintenance of ecological function;
- Bushfire hazard;
- Water scarcity; and
- Extreme weather events.

In responding to these issues improvement in the following areas is required:

- Information provision;
- Relevant and enhanced available expertise and capacity building programs;
- Development and implementation of trial projects; and
- Ongoing funding programs that increase the resilience of coastal environments to the impacts of climate change.

### **Information provision**

The provision of consistent information on climate change impacts (applicable at regional and local scales) needs to be available centrally and “marketed” to various audiences. To achieve this requires the development of a framework that allows for the integration of climate change research and data on potential impacts into local policy and adaptation actions. The SCCG recommends the Federal Government work with the relevant research and academic providers as well as State and Local Government practitioners on a process and framework that allows for the consistent integration of climate change science and research in policy and strategies for all spheres of Government.

The SCCG believes that the first piece of information required is high resolution national Digital Elevation Model (DEM) data integrated with bathymetry data for the coastal zone. Many councils have already obtained DEM models for their LGAs from a range of providers with varying scales and data sharing and licensing agreements. This has resulted in the inconsistent, piecemeal and inefficient collection of this information. To address this, the SCCG recommends that the Federal Government take the responsibility for the development of an appropriately scaled national DEM model (eg LiDar) available to all spheres of government for the coastal zone and near-shore environments.

### **Development and implementation of trial projects**

To allow for the integration of information such as DEM into local policy and action will also require undertaking trial projects. The aim of such projects should be to integrate climate change information into adaptation policies and strategies as well as determine the costs and benefits of undertaking adaptation actions. Ongoing reporting of the monitoring and evaluation of any trial adaptation projects will assist identify future opportunities for adaptation activities and their transferability.

Therefore the SCCG strongly supports continued funding for programs such as the National Climate Change Adaptation Program and Local Adaptations Pathways Program. Each of these programs offers Local Government the opportunity to identify, trial and implement adaptation actions within a risk management framework. It is recommended that the Federal government now also start to address implementation funding opportunities with all 3 spheres of government.

### **Ongoing funding programs that increase the resilience of coastal environments to the impacts of climate change.**

The loss of many successful coastal and marine initiatives undertaken by Federal and State Governments over the last five years has forced Local Government to rely on limited budgets or compete for restricted grant funding to undertake coastal initiatives previously supported by the Federal Government. The SCCG believes the end of the Coasts and Clean Seas Program and the recent demise of Coastcare in NSW coupled



with the new significant pressures facing the coastal zone have limited councils and their community's ability to protect and enhance coastal areas in response to climate change.

SCCG recommends that the Federal Government allocate funding for the reintroduction or development of initiatives and activities, such as the Coasts to Clean Seas Program, that are specifically undertaken in coastal and marine environments. Funding that supports coastal monitoring programs, marine species protection, coastal marine planning and capacity building would also greatly assist Local Government protect the nationally significant environmental, social, cultural and economic values of the coastal zone.

To address the issues highlighted for this Term of Reference the SCCG recommends the following activities.

**Recommended actions:**

The inquiry identifies the need for the development of programs that map potential risks and integrate climate change science and research into a clear local management response for the following nationally significant issues:

- Sea Level Rise
- Storm surge;
- Beach erosion / Cliff instability;
- Biodiversity loss and maintenance of ecological function;
- Bushfire hazard;
- Water scarcity; and
- Extreme weather events.

The inquiry recommends the Federal Government takes responsibility for the development of a central information source that allows for timely access to regionally and locally relevant climate change projections and scientific research.

The inquiry recommends the Federal Government work with the relevant research and academic providers as well as State and Local Government practitioners on a process and framework that allows for the consistent integration and application of climate change science and research in policy and strategies for all spheres of Government.

The inquiry recommends the Federal Government take the responsibility for the development of usable national Digital Elevation Model, available to all spheres of government for the coastal zone inclusive of near-shore environments and bathymetric data.

The inquiry identifies the need for the application of pilot and demonstration projects that integrate climate change information with adaptation strategies and determine the costs and benefits of undertaking adaptation actions.

The inquiry recommends continued long term funding by the Federal of programs such as the National Climate Change Adaptation Program and Local Adaptations Pathways Program with a renewed emphasis on implementation support.

The inquiry recommends Federal Government allocate funding for initiatives and activities, such as the Coasts to Clean Seas Program to directly assist local communities respond to climate change.

## **5. Mechanisms to promote sustainable coastal communities**

Councils are in the ideal position to directly employ a number of mechanisms across the following activities to promote sustainable coastal communities via partnership and support from State and Federal funding programs.

- Strategic Planning;
- Development Assessment;
- Education;
- Community engagement and consultation;
- Research; and
- Compliance.

### **Strategic Planning**

The strategic planning processes undertaken by all spheres of Government offer an opportunity to develop consistent and coordinated actions to promote sustainable coastal communities. To achieve this requires the development clear national, state, regional goals, actions and terminology that can be applied and implemented at the appropriate scales. This would ensure the consistent and coordinated integration of climate change considerations into strategic planning of all spheres of government.

Additionally, strategic planning responses to climate change are limited by the scientific uncertainty and the need for consistent national, regional and local information and associated management tools. At present there is lack of a national coastal information system structured to provide state and local decision makers the information to develop and implement the relevant strategic plans.

As discussed above, the SCCG believes the development of a national DEM for the coastal zone and near shore environments is an essential first piece of information required. Additional strategic planning activities that are required include:

- Improve public transport networks and connectivity to centres of population;
- Increase population densities in those major centres with infrastructure best able to cope;
- Protection of remaining farmland and the encouragement of more agriculture and food production in proximity to centres of population; and
- Securing existing water resources and identifying alternative sources.

### **Development Assessment**

The integration of climate change considerations into development assessment is an activity all spheres of government have struggled with to date. To address this, the SCCG recommends, a nationally coordinated program to encourage states and territories to undertake a systematic review of all relevant environmental planning instruments to identified opportunities for consolidation, consistency and efficiency.

### **Education**

The general public needs better and consistent information about climate change and its potential impacts. Additionally councils require communication tools for engaging residents about sustainability and climate change vulnerabilities. The central development of tools and strategies for a wide range of audiences would ensure this is done consistently and appropriately. The SCCG recommends that the Federal

Government develop centrally available education tools and strategies for a wide range of audiences that can be utilised by all stakeholders.

### **Community engagement and consultation**

Amongst coastal communities there is significant variation between knowledge, understanding and management of risk in relation to climate change. Within coastal environments it is not possible to remove all likely risk to life, property and the environment that results from naturally occurring coastal processes. The uncertainty associated with the timing and intensity of extreme events is likely to increase with the impacts of climate change.

Coastal communities need to be accurately informed of the likely impacts of climate change so they can make a meaningful contribution to the development of plans and strategies that make them more resilient to climate change. Further, Local councils must be able to disclose information related to the economic, social, cultural and environmental impacts of climate change without fear of liability.

To assist with this the SCCG recommends:

- The Federal Government work with State and Local Governments to identify processes for the consistent and appropriate disclosure of the potential impacts of climate change to coastal communities; and
- The Federal Government work with State and Local Governments to identify frameworks for the meaningful integration of the views and desires of coastal communities into the appropriate plans, projects and policies.

To address the issues highlighted for this Term of Reference the SCCG recommends the Federal Government coordinate the following activities.

### **Research**

On-ground and long term monitoring of natural resources has been shifted from Federal and State agency responsibility to local government and in some cases community groups and volunteers. In response, Local government has been forced to attempt to assess environmental condition on both temporal and spatial scales. The SCCG recommends greater assistance and partnerships with research organisations be developed to aid predictive and consequential understanding of the impacts of climate change.

### **Compliance**

Local government is given the principal responsibility of ensuring policy and planning provisions are adhered to and implemented accordingly. Therefore, the SCCG recommends the federal government provide greater assistance and incentives to assist other levels of government for compliance and additional resources to state and local authorities to enforce and monitor such compliance.

#### **Recommended actions:**

The inquiry identify the need for the development of clear national, state and regional strategic planning goals, actions, terminology and performance indicators that can be applied and implemented at the appropriate scales.

The inquiry recommends that Federal and State Governments work with councils to strengthen national, state and regional strategic planning provisions to:

- Improve public transport networks and connectivity to centres of population;
- Increase population densities in those major centres with infrastructure best able to cope;

- Increase the functional diversity of locations to reduce the need for extensive commuting between home, shop and work.
- Protection of remaining farmland and encouragement of more agriculture and food production in proximity to centres of population; and
- Securing existing water resources and identifying alternative sources.

The inquiry identifies the need for the Federal Government to work with State and Local Governments to identify frameworks for the meaningful integration of the views and desires of coastal communities into the appropriate plans, projects and policies.

The inquiry identifies that a nationally coordinated program to encourage states and territories to undertake a systematic review of all environmental planning instruments and legislation to ensure that adequate and nationally consistent approaches to consideration of climate change through development assessment.

The inquiry recommends the Federal Government work in cooperation with all State Governments to develop centrally available capacity building and education tools and applications for use by decision makers at all levels.

The inquiry recommends the Federal Government work with State and Local Governments to identify processes for the consistent and appropriate disclosure of the potential impacts of climate change to coastal communities;

The inquiry recommends the Federal government work with state and local governments to develop research initiatives that involve, inform and provide guidance to local government in addressing the impacts of climate change; and

The inquiry recommends the Federal government provide state and local government with greater capacity to ensure communities compliance with planning instruments and initiatives undertaken to mitigate climate change impacts.

## **6. Governance and institutional arrangements for the coastal zone**

Climate change will have an impact on coastal communities around the nation and will necessitate federal leadership with strong coordination amongst Federal, State and Local Governments. There can be no doubt that mitigation and adaptation to climate change will require strengthening governance and institutional arrangements between all three spheres of Government in cooperation with community and industry.

At present governance and institutional arrangements in relation to climate change and the coastal zone are extremely disjointed and lacking accountability. Since 1980, there have been a range of inquiries into coastal management in Australia. The submission made to the inquiry by Professor Bruce Thom summarises the findings of these inquiries. The SCCG supports the view of Professor Thom that time is wasted and existing problems as well as frustrations become engrained when the many recommendations of these inquiries have not been acted upon by successive governments.

To address this, leadership is required from the Federal Government to develop the necessary governance and institutional arrangements that identify the roles and responsibilities of Local, State and Federal Governments in responding to climate change. This will ensure that all spheres contribute in an effective and timely manner

and reduce potential overlap in activities and programs. It will also assist in recognising issues and actions for which preventative expenditure is likely to result in significant future cost savings. Without this leadership the opportunity to identify and strengthen essential partnerships and implement strategies at the appropriate scales will be lost until the next inquiry.

Responding to climate change also offers a pivotal opportunity for us all to rethink how government, community and industry interact and do business. New approaches and policy are needed across a wide range of areas already identified in this submission and outlined in the recommendations above. Possible new policy approaches not already covered include:

- The introduction of pricing mechanisms that reflect the true value of water and energy resources with appropriate incentives to conserve resources and encourage higher levels of self sufficiency;
- Increased long term investment in existing and new infrastructure, particularly large scale water recycling and renewable energy production; and
- Introducing a national system of standardised incentives such as rebates, feed-in tariffs and taxation reductions to encourage domestic renewable energy production and the rapid adoption of appropriate “clean” technologies.

To address the issues highlighted for this Term of Reference the SCCG recommends the following activities.

**Recommended actions:**

The inquiry recommends that the Federal Government take responsibility for developing domestic multilateral agreements to accelerate the process of implementing comprehensive and achievable mitigation and adaptation actions to assist local climate change strategies and measures.

The inquiry identifies the need for the development of national, state and regional frameworks to assist in identifying and implementing opportunities for delivery of climate change management options through statutory process such as strategic planning, implementation of Environmental Planning Instruments and development assessment.

The inquiry recommends the drafting of a Federal , State and Local Government tripartite agreement that make local government an equal partner in the determination of planning, management and funding arrangements to address climate change.

The inquiry identifies the need for in new policy approaches for including but not limited to:

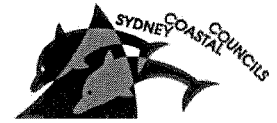
- The introduction of pricing mechanisms that reflect the true value of water and energy resources, (such as a carbon tax), with appropriate incentives to conserve resources and encourage higher levels of self sufficiency;
- Increased long term investment in existing and new infrastructure, particularly large scale water recycling and renewable energy production; and
- Introducing a national system of standardised incentives such as rebates, feed-in tariffs and taxation reductions to encourage domestic renewable energy production and the rapid adoption of appropriate “clean” technologies.

I trust that the information provided in this submission will receive appropriate attention when finalising recommendations for the *Inquiry into climate change and environmental impacts of coastal communities*. We look forward to the opportunity to elaborate on this submission at any public hearing. If you wish to clarify any matter in the submission or require further information, please contact the Groups, Coastal Projects Officer, Craig Morrison on (02) 9246 7702 or [craig@sydneycoastalcouncils.com.au](mailto:craig@sydneycoastalcouncils.com.au).

Yours sincerely,

A handwritten signature in black ink, appearing to read 'George Copeland', written in a cursive style.

Clr George Copeland  
**Chairperson**



# SYDNEY COASTAL COUNCILS GROUP CLIMATE CHANGE ACTIVITIES

The SCCG provides the below information in relation to key activities the Group is undertaken to assist its member councils and their communities understand and deal with impacts associated with climate change. These included:

1. A Systems Approach to Regional Climate Change Adaptation in Metropolises
2. Quantifying the Value of Sydney (NSW) Beaches in order to assess cost / benefit of necessary coastal protection works / abatement measures as a result of enhanced climate Change impacts
3. An assessment of Australian and NSW legislation and government policy provisions in relation to Climate Change relevant to regional and metropolitan NSW coastal Councils.
4. Climate Change Fact Sheets

## 1. A Systems Approach to regional Climate Change Adaptation in Metropolises.



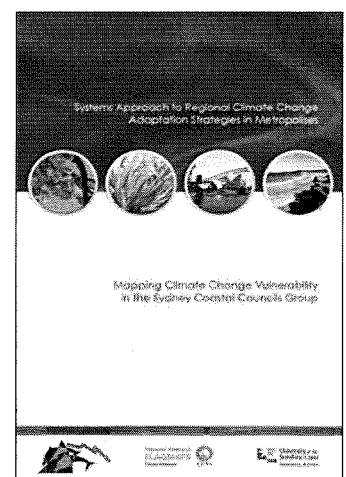
Australian Government  
Department of Climate Change

As part of the Australian Government's Department of Climate Change (DCC), National Climate Change Adaptation Program, the Sydney Coastal Councils Group (SCCG) have partnered with two CSIRO Divisions (Sustainable Ecosystems, and Marine and Atmospheric Research) working in collaboration with the University of the Sunshine Coast to undertake research on regional approaches to managing climate vulnerability in the Sydney region. The program is funded by the Australian Government with co-investment by the CSIRO and the SCCG.

### Project Objectives:

The aim of the project is to develop and trial a method for a systems approach to regional climate change adaptation strategies in large urban areas. The project aim directly addresses DCC priorities through:

- Developing and testing an integrated (systems) method to generate information about the likely impacts of climate change and feasible adaptation strategies in the Sydney region;
- Deepening the understanding of the likely impacts of climate change and resulting adaptation options in the Sydney region through integration of existing models, generation of new knowledge where there are significant gaps, scenario analysis, an analysis of adaptive capacity, and assessment of demonstration projects.
- Assessing the transferability of the integrated (systems) method to other large urban areas, with transfer to be facilitated through the project National Reference Group.



### Project Outcomes:

The project will benefit stakeholders in the Sydney region through:

- Generating information about the likely impacts of climate change (eg. flooding, coastal erosion and temperature) and feasible adaptation strategies (eg. capital works, education, and planning) in the Sydney region;

- Deepening the understanding of the likely impacts of climate change and resulting adaptation options in the Sydney region through integration of existing models, vulnerability mapping, and an analysis of adaptive capacity;
- Building the capacity of stakeholders in the Sydney region to implement, and monitor the success of, adaptation strategies (eg. for infrastructure, health, and biodiversity);
- Working with stakeholders (eg. SCCG member councils and other stakeholders) to build adaptation strategies into institutional structures and processes (eg. asset management plans, coastal management plans, estuary management plans, floodplain management plans, local environment plans, and regional environmental plans).

## Elements of the Research Project

### a. Creation of a template for vulnerability mapping in the SCCG.

In order to provide an initial basis for awareness raising and discussion, a template for vulnerability assessment and mapping in the SCCG has been created. This template utilises existing outputs from CSIRO and other relevant projects (e.g. UPRCT project) and presents them as simple spatial overlays. A major aspect of this phase is also to collate information on ongoing or planned studies and also identify possible impact models for application in the analysis of existing adaptive measures and capacity latter in the project.

Key outcomes of this project phase have included:

- Climate vulnerability is driven as much by the physical changes in the climate, as factors such as demographics, economic, landscape and infrastructure that influence the sensitivity of places and people to climate changes and their capacity to respond to reduces risk.
- Different areas of Sydney will experience climate change in different ways depending on their geographic location, demographics, and the resources and tools at their disposal to manage future climate change risk.
- Vulnerability is closely correlated with human development patterns, indicating human activity and decision-making as core components of vulnerability.
- Almost every council has at least one area of critical vulnerability that may be a focal point for management efforts. Also, every Council has at least one impact to which it appears to be particularly resilient. Generally the majority of Councils appear to face multiple vulnerabilities.
- The Landscape diversity associated with large Councils creates the additional burden of having to cope with different types of vulnerability scattered over large geographic areas.

Key uses identified for the report to date include:

- Stakeholder feedback via the workshops suggested the approach taken to mapping vulnerability offered a number of advantages, particularly with respects to communicating the spatial dynamics of risk as well as the diversity of factors that contribute to vulnerability.
- The assessment indicated where some of the key challenges for each council are and where councils may opt to do more detailed assessments.
- The vulnerability assessment is an essential first stage to better understand the impacts of climate change on the region, and to help move towards effective and adaptive management.



- By combining the vulnerability assessment results with Councils own knowledge and risk management experience will improve the understanding and thinking behind the implications of climate change and what will be needed for communities to respond.
- While relative vulnerability maps may be useful for identifying and prioritising at-risk areas, they are just one of a broad range of tools that can be used to inform planning and decision-making.

#### **b. LGA priorities and capacity for adaptation and determination of local contextual variables**

Workshops have just been completed in each LGA represented by the SCCG (15 LGAs across Sydney, representing over 1.3 million people). These workshops discussed the output of the regional vulnerability mapping process and used this tool to discuss individual priorities for adaptation and determine local contextual variables which may affect adaptation. The workshops also highlighted perceived specific local strengths and weaknesses with regards to building future capacity for responding to climate change.

A regional synthesis report is currently being prepared. Some initial outcomes of the workshop phase have included:

##### **Key Barriers identified by member councils:**

- Funding / Resources
- Lack of political will
- Lack of social cohesion
- Public awareness / perception
- Constraints of State and Federal policy
- Topographic/geographic constraints
- Poor planning for future needs
- Aging infrastructure
- Uncertainty of science
- Historical planning decisions
- Asset management and ownership
- Reluctance to change/accept new technology

##### **Key Opportunities identified by member councils:**

- Political will – clear leadership
- Opportunity for education and awareness
- Availability of funding and research
- Strong sense of place / Social cohesion
- New Technology and innovative ideas
- Opportunity for regional approaches
- New development
- Funding
- Regional advocacy
- State and Federal policy direction
- Partnerships – Government, Utilities, Education, Business

##### **Some of the key learnings that Council delegates highlighted from the workshops included:**

- Climate change is a regional issue that requires a regional approach to management
- Barriers and opportunities for a council to respond to climate change
- Heightened awareness of vulnerability and adaptive capacity of Council
- The complex and varied impacts of climate change
- Link between climate changes and long term strategic planning
- Complexity and variability of issues surrounding impacts of climate change
- Identification of key focus areas for council

#### **c. Analysis of existing adaptive measures and capacity**

3 Case study phase is now underway examining local council's adaptation strategies for three key cross sectoral issues that emerged from the regional and local workshops (Community, Infrastructure, planning and decision making. Recommendations will be made to councils on how to improve their adaptation strategies. Local councils will also be provided with initial monitoring and evaluation frameworks to help benchmark and improve those strategies into the future. The



analysis will also help select and design demonstration projects for the 2nd stage of the project (2nd stage currently unfunded).

#### **d. Write up of method, results, and transferability to other large urban regions**

The write-up will include detailed discussion of the application of a systems method to understanding climate vulnerability and adaptation strategies. The major focus of the final report will be the discussion of the transferability of the method to other large urban regions.

For more information on this project see:

<http://www.sydneycoastalcouncils.com.au/system-approach-to-regional-climate-change-adaptation-strategies-in-metropolises/index.php>

## **2. Quantifying the Value of Sydney (NSW) Beaches in order to assess cost / benefit of necessary coastal protection works / abatement measures as a result of enhanced climate change impacts**



The Sydney Coastal Councils Group (SCCG) has engaged the University of NSW to undertake a valuation of Sydney beaches, and develop a process to assist Local and State Governments to make more informed decisions on how to protect coastal property, infrastructure, beach environments and amenity at threat of coastal erosion due to enhanced climate change impacts.

This project is to be undertaken as a three-year PhD project, supported by a grant from the NSW Greenhouse Office Community Action Grants Program worth over \$220,000. The project began in December 2006, following the appointment of the PhD candidate.

#### **Project Objectives:**

This project will determine the total economic value of selected Sydney beaches, in three different local government areas. These beaches have now been chosen after a rigorous specific selection process. The sites are intended to represent different biophysical environments: oceanic, estuarine and urbanised coastlines (sites are Narrabeen-Collaroy, Manly Ocean Beach, and Brooklyn-Dangar Island). This will provide a baseline value against which changes (natural or otherwise) may be tracked. The results of the valuations, including identification of stakeholder preferences for coastal attributes, will also be key knowledge inputs to the future management of the NSW coastal zone, particularly in the decision of how to protect coastal assets in response to sea level rise and other enhanced climate change impacts.

These results will then be used in developing a process for assessing coastal protection measures against social, environmental and economic criteria. This will enable more efficient utilisation of available beach management resources at a state and regional level, and explicitly demonstrate consistency with the principles of Ecologically Sustainable Development so to protect coastal infrastructure and beach amenity at threat of coastal erosion due to enhanced climate change .



## **Project Outcomes:**

The project will benefit stakeholders in the Sydney region through:

- Enhancing the understanding of the likely impacts of climate change and available coastal protection measures in the Sydney region
- Working with stakeholders (eg. SCCG member councils and other stakeholders) to improve the management of coastal assets in response to climate change impacts
- Developing a baseline value for coastal assets in three study sites to inform management actions, and against which management effectiveness can be assessed
- Identification of a process to value coastal assets, transferable between locations and at different spatial scales
- Developing an open and transparent decision making process to assess coastal protection options against social, environmental and economic criteria

## **Elements of the Research Project**

### **Stage 1: Calculation of Total Economic Value of selected Sydney beaches - Calculation of value from existing data sets within Sydney and NSW**

Existing proxy data sets from a number of key sectors (housing, tourism, fisheries etc.) will be identified, and information sharing arrangements with relevant data holders will be established. Environmental values captured by surrogate markets (such as the effect of proximity to the coast on housing values) will then be calculated for the three study sites, using a range of methods. Expected completion: June 2008

### **Estimation of willingness to pay (WTP) for coastal goods and services**

Key stakeholder groups will be involved in the development and testing of a questionnaire to determine willingness to pay for coastal amenities. Stakeholders will include: domestic and international tourists, residents of 'at risk' coastal locations, local business owners, and decision-makers in Local and State Governments. A number of survey delivery methods will be employed to capture values for both users and non-users. Questionnaires will be designed in such a way that they can be used at other sites in the Sydney region and elsewhere on the NSW coast. Expected completion early 2009.

### **Integration of values derived from previous steps**

The results of these valuations will then be combined to give an estimate of the Total Economic Value (TEV) of beaches in the three study sites, to be displayed graphically. The spatial distribution of values can be used to identify key privately and publicly owned coastal assets threatened by enhanced climate change impacts, and prioritise sites for allocation of coastal protection resources. The method/s of coastal asset valuation, including identification of publicly available and controlled information sources, will be transferable between locations and at a number of spatial scales. Expected completion early-mid 2009.

### **Stage 2: Development of process for assessing coastal protection proposals**

#### **Analysis of existing coastal management framework and decision-making process**

The next component of the project is to develop a decision-making process in partnership with the coastal councils that will allow them to prioritise beach protection works necessary to respond to enhanced climate change impacts.



A key objective is to identify a process that allows for rapid assessment of projects against a range of environmental, social and economic criteria, and is transferable between locations and at different spatial scales. The selection of criteria will be informed by the values of coastal assets and social preferences identified during the valuation process.

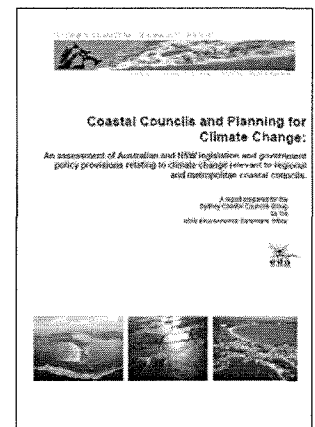
### Write up of method, results, and transferability to other coastal locations

The findings will be presented in a final report to the SCCG and the NSW Greenhouse Office and will be broadly distributed to all interested stakeholders. Regular project updates will also be available via the SCCG website.

### 3. An Assessment of Australian and NSW legislation and government policy provisions in relation to Climate Change relevant to regional and metropolitan NSW coastal Councils.



The SCCG has recently engaged the NSW Environmental Defenders Office to undertake a project titled *An assessment of Australian and NSW legislation and government policy provisions in relation to climate change relevant to regional and metropolitan NSW coastal councils.*



#### Project Objectives:

- Identify where the terms **climate change, greenhouse and sea level rise** occur within all Acts, Regulations, Environmental Planning Instruments and Policies at Commonwealth, NSW and (NSW) Local Government levels.
- Provide an analysis and interpretation of the responsibility and necessary actions of Councils in NSW to implement the provisions identified.
- Examined potential common law liability

#### Project Outcomes:

##### The report found the following:

- Of 137 legislative instruments examined, only 16 make reference to 'climate change', 'greenhouse' or 'sea level rise'.
- 20 NSW and Commonwealth policies make reference to 'climate change', 'greenhouse' or 'sea level rise'.
- There are currently few statutory obligations placed on councils to address climate change. Although provisions were identified that require the consideration of climate change impacts in objects clauses and as matters for consideration, there is currently no requirement to make 'climate friendly' decisions. Councils retain significant discretion as long as the correct processes are followed.
- The New South Wales *Local Government Act 1993* exempts councils from liability for negligence in relation to their activities that relate to flooding and coastal hazards. This applies to the assessment of development applications, the drafting of building standards, the making of Local Environmental Plans, etc. However, there is a requirement for 'good faith' which can be satisfied by applying the *NSW Coastline Management Manual 1990*.
- Councils are likely to owe a duty of care to residents when considering development applications in the coastal zone. To meet this duty of care councils should adopt clear climate change management plans, appropriate building standards, mandatory precautionary conditions and prohibited development zones. The *NSW Coastal Policy* and

*Coastline Management Manual* should also be followed. However, the scope of the response expected of an individual council will depend on its resources.

- This report has identified a clear need for state government guidelines to assist councils in setting benchmarks for strategic planning in relation to coastal hazards, and in providing guidance on when and how to conduct adaptive activities that address climate change risks in the coastal zone.

#### 4. SCCG Climate Change Fact Sheets

The SCCG Climate Change fact sheets have been produced as part of the Macquarie University / SCCG Partnership Memorandum of Understanding. 3<sup>rd</sup> year Environmental Science students were asked to prepare the fact sheets.

The Fact Sheets have been prepared for use by SCCG member councils to assist and inform their elected representatives and communities of the potential impacts of Climate Change.

The five Fact sheets include:

- Coastal communities in the Sydney coastal region
- Biodiversity in the Sydney coastal region
- Human health in the Sydney coastal region
- Sea level rise in the Sydney coastal region
- Storm intensity and frequency in the Sydney coastal region

Final facts sheets are available for download via the SCCG web page:  
[www.sydneycoastalcouncils.com.au/climatechange\\_factsheets.htm](http://www.sydneycoastalcouncils.com.au/climatechange_factsheets.htm).

