

ECONOMICS, MANAGEMENT & THE COASTAL ZONE FORUM.

Customs House, Sydney

Thursday 24 February 2011 9.00am - 4.30pm



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Level 14, 456 Kent Street PO Box 1591 Sydney, NSW 2001 www.sydneycoastalcouncils.com.au

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Thanks to the City of Sydney Council for providing the venue at Customs House, Sydney



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Introduction and Welcome to the Forum

The Sydney Coastal Council Group (SCCG) would like to welcome you all to the 'SCCG Economics, Management and Coastal Zone Forum'. The aim of the Forum is to create awareness of the present and future costs involved with the sustainable management of the urban coastal environment.

In order for Councils, State Agencies, and other stakeholders to manage the natural environment sustainably and address the emerging impacts of climate change they require information on the costs and benefits of potential management responses. The desired outcome of today's Forum is to stimulate new thinking and approaches of what is important and what is needed to ensure we have improved management and financial decision-making now and into the future.

The SCCG would like to sincerely thank all of the eminent speakers who have given their valuable time today to talk about some very interesting and diverse range of topics.

The day will be starting by hearing from the highest level of financial decision-making of State and Local Government, moving to key researchers in applied economic based projects, then hearing about international and national re-insurance, and ending the day discussing critical needs and considering future issues in relation to economic assessment and management of our precious coastal zone.

A final report will be provided after the Forum to all attendees and made available online at www.sydneycoastalcouncils.com.au/Events. The report will include biographies, synopsises of presentations, PowerPoint presentations, a summary of panel session discussions and outcomes, and the results of the forum evaluation covering i) the most valuable part of the day; ii) what information people would like to hear more about in this space; and iii) suggestions on additional related forums and projects.

Thank you for coming and enjoy the day!



ECONOMICS, MANAGEMENT & THE COASTAL ZONE FORUM.

The Barnet Long Room, Customs House

Level 1, 31 Alfred Street, Circular Quay, Sydney

Thursday 24 February 2011

IIIdio	day 24 lobidaly 2011	
0830	REGISTRATIONS OPEN	
0900	INTRODUCTION & WELCOME Geoff Withycombe SCCG Regional Coastal Environment Officer Executive Officer	
0915	GATEWAY FAMILIARISATION Elizabeth Williams Principal Advisor Gateway The Treasury	
0950	Tony Pizzuto Financial Services Director	
1030	MORNING TEA	
1100	CAN WE PRICE VALUES? SOCIAL AND CULTURAL VALUES IN DECISION-MAKING FOR INTEGRATED COASTAL MANAGEMENT Dr Neil Lazarow Visitor, Fenner School of Environment and Society	
1130	QUANTIFYING THE VALUE OF SYDNEY'S BEACHES	
	Dave Anning PhD student	
1200	HIGH LEVEL COST-BENEFIT ANALYSIS OF BEACH SAND NOURISHMENT PROGRAM AT THREE SYDNEY BEACHES Katie Feeney Principal Economist Lex Nielsen Technical Director Ports and Marine	
1230	PANEL DISCUSSION AND AND AND AND AND AND AND AND AND AN	
1300	LUNCH	
1345	MANAGING THE UNAVOIDABLE: NATURAL CATASTROPHES AND CLIMATE CHANGE - DATA, TRENDS AND ANALYSIS Dr. Sandra Schuster Research Analyst Munich RE	
1415	OUR FUTURE WORLD Dr Stefan Hajkowicz Director, Human Services Delivery Research Alliance	
1445	AFTERNOON TEA	
1500	GETTING REAL ABOUT ADAPTATION: USING 'REAL OPTIONS' TO ADDRESS CLIMATE CHANGE UNCERTAINTY IN A COST-BENEFIT FRAMEWORK. Dr Leo Dobes Adjunct Associate Professor	
1530 1600 1630	PANEL DISCUSSION CONCLUSION FORUM ENDS For further details visit www.sydneycoastalcouncils.com.au and to register email events@sydneycoastalcouncils.com.au	

Presenter Biographies and Synopsis of Presentations

Ms Elizabeth Williams, Principal Advisor Gateway NSW Treasury

Elizabeth has over 20 years experience in public and private sectors. Currently leading the NSW Gateway Unit, since joining the team in 2003 during the Gateway pilot program.

Elizabeth's core responsibility is to provide strategic advice to NSW Treasury and government agencies on the application and implementation of Gateway. She has facilitated over 100 reviews for major and complex programs and projects, and represents Treasury on the Australian New Zealand Gateway Forum.

Prior to Gateway, she established a solid background in whole of government policy development, through her involvement with the Government's construction reform program of the 1990's, particularly managing the development and implementation of the Government's requirements for OHS Management Systems for the construction industry.

Elizabeth came to the public sector following a role in Human Resources/Industrial Relations whereby she ran a small HR team that serviced nearly 1000 employees in the manufacturing sector.

Gateway Familiarisation - Synopsis:

The Gateway Review System is a series of structured reviews that are held at key decision points (gates) in the procurement process.

The NSW Government has developed the System to help agencies improve their procurement discipline and to achieve better service results from their procurement activity.

A small team of experienced procurement practitioners that are not involved in the projects conduct the reviews. The teams assess the progress of projects against seven criteria: service delivery, affordability, value for money, sustainability, governance, risk management, stakeholder management and change management.

The results of each review are summarised in a report that provides a snapshot of the project's progress. Where appropriate the report will include recommendations to strengthen the project

Presentation available at

www.sydneycoastalcouncils.com.au/sites/default/files/econom_elizabeth_williams.pdf

Mr Tony Pizzuto, Financial Services Director Willoughby City Council

Tony Pizzuto has had career in local government spanning 30 years. Tony is currently Financial Services Director with Willoughby City Council responsible for the Finance and Risk Management functions.

Tony commenced his local government career in the Treasury section at Holroyd Council. He then advanced to senior positions at Marrickville, Penrith, Baulkham Hills and Auburn councils before joining Willoughby.

Much of Tony's time these days is spent on issues related to the delivery of Willoughby's, The Concourse development.

Presentation available at

www.sydneycoastalcouncils.com.au/sites/default/files/econom_tony_pizzuto.pdf

Dr Neil Lazarow, Visitor Fenner School of Environment and Society Australian National University (ANU)

Dr Neil Lazarow is a Visitor at the Fenner School of Environment and Society at the Australian National University and an Adjunct Senior Research Fellow at Griffith University's Centre for Coastal Management. He is currently on contract to the Australian Government Department of Climate Change and Energy Efficiency, where he works in the area of coastal adaptation. Neil's interests cover environment and society broadly, with specific experience in integrated coastal management, policy and institutions, social research, recreation, non-market valuation and climate change adaptation.

Can we price values? Social and cultural values in decision-making for Integrated Coastal Management - Synopsis:

The coast is a highly valued and contested space. Australians' special relationship to the coast is widely recognised and commonly identified in coastal planning documents (e.g. most State coastal legislation or policies). Yet it is often poorly understood and given relatively low priority in policies and plans. This begs new approaches that may test the willingness and capacity of scientists, decision-makers, politicians and other coastal stakeholders.

Traditionally, the coastal economy has been viewed in terms of market values. However, non-market values (i.e. goods and services traditionally not traded through the market such as the value of habitats, recreation, identity and cultural heritage) also play a significant role in determining the health of the coast and they affect the people who use the coast for work and play (Pendleton, Atiyah and Moorthy 2007).

This talk provides a brief overview of economic valuation and its application to coastal planning and management with a focus on the importance of social and cultural values, and how they might be valued. A series of examples from Australian and international case studies are discussed, describing how contested social and cultural values influence both decision-making processes and community resilience. The presentation concludes with the discussion of a number of key points around practical approaches to better incorporating social and cultural values in decision-making for integrated coastal management.

Presentation available at

www.sydneycoastalcouncils.com.au/sites/default/files/econom_neil_lazarow.pdf

Mr Dave Anning, PhD Candidate University of NSW (UNSW)

Dave Anning has recently completed his PhD at the University of NSW. Working in collaboration with the Sydney Coastal Councils Group, his research sought to determine the economic value of beaches at 3 case study sites in Sydney, using a range of methods. This information will be used by Local Councils and State Government agencies to make decisions about current coastal management activities and management options in response to climate change. Dave holds a Bachelor of Science (Marine Biology) and a Masters of Environmental Management (Environmental Tourism), and is finalising his studies towards a Graduate Diploma of Economics. He has also worked in coastal planning and natural resource management.

Quantifying the value of Sydney's beaches - Synopsis:

Dave will present a summary of the results of the Sydney Beaches Valuation Project, which explored the existing economic importance of beach visitation and recreation in the Sydney region, and how this could be affected by beach closures due to erosion. It also

examined the effect of coastal risk information disclosure on the beachfront property market, to draw conclusions about the market response to coastal protection decisions. The presentation will conclude with an analysis of the strengths and weaknesses of economics as a coastal management tool, particularly in terms of selection of climate change responses.

Presentation available at

www.sydneycoastalcouncils.com.au/sites/default/files/econom_dave_anning.pdf

Ms Katie Feeney, Principal Economist Mr Lex Nielsen, Technical Director Ports and Marine AECOM

Katie is a Principal Economist with nearly 10 years experience covering both the private and public sector and specialising in energy, sustainability, land use and infrastructure economics. Katie's expertise is in preparing business cases, economic and financial appraisals, economic and social impact assessments, industry consultation, demand analysis, evaluation of policy and socio-economic analysis. Katie has led a number of projects addressing some of the key policy issues facing Governments around the world including electric vehicles, renewable energy, climate change and adaptation, and nanotechnology. Recent projects Katie has led include:

- Coastal Inundation at Narrabeen Lagoon: Optimising Adaptation Investment.
- Economic assessment of designing a road to incorporate climate change adaptation for RTA.
- Economic Viability of electric vehicles.
- Economic viability of cycling in Sydney.
- NSW Walking strategy.
- Feasibility of large scale solar precincts.
- Policy advice on solar feed in tariffs.

Lex Nielsen is Technical Director Ports and Marine at AECOM and has over 35 years professional experience in all aspects of coastal and estuarine hydrodynamics, beach erosion, sediment transport, shoreline evolution, coastal zone management, maritime structural analysis and design.

High Level Cost-Benefit Analysis of Beach Sand Nourishment Program at three Sydney beaches - Synopsis:

The results of a high-level cost-benefit analysis of investment in a beach sand nourishment program at three case study beaches in Sydney are presented. The investment program objective was to mitigate loss of beach amenity as a result of historical and future sea level rise associated with climate change. The analysis was undertaken before completion of the Sydney Beaches Valuation Project conducted at the UNSW for the SCCG. It used data from secondary sources on key parameters of expenditure on coastal goods and services and on indicators of other attributes of beach amenity where the market does not provide a satisfactory measure of economic value.

Presentation available at

www.sydneycoastalcouncils.com.au/sites/default/files/econom_katie_feeney.pdf

Dr Sandra Schuster, Research Analyst Munich RE

Dr. Sandra Schuster is a research analyst for Munich Reinsurance in Australasia, assessing the risk associated with natural hazards like bushfires, floods, hailstorms, tropical cyclones, earthquakes as well as climate change related risks and opportunities. She completed a degree in meteorology/climatology before going on to complete a PhD researching the impact of severe hailstorms. Prior to this, she worked in Cambridge, UK on climate change related topics concerning the polar regions, focusing on sea ice (including field work in the North Pole and Arctic region). As chair of AMOS (Australian Meteorological and Oceanographic Society) she organised a series of public lectures following the release of the Intergovernmental Panel on Climate Change (IPCC) reports. Recently, she was appointed as Lead Author of Chapter 25, Australasia, of the Working Group II (Impact, Adaptation and Vulnerability) contribution to IPCC's Fifth Assessment Report (AR5).

Managing the unavoidable: Natural Catastrophes and Climate Change - data, trends and analysis - Synopsis:

Munich Re's experts have been researching loss events caused by natural hazards around the globe for over 35 years. These losses are documented in the NatCatSERVICE database, currently documenting more than 27,000 single events and one of the most comprehensive of its kind in the world. Analysis of this data shows that natural catastrophes have increased throughout the world and are causing more and more damage. However, the upward trend is mainly due to the increase in both frequency and intensity of weather-related events. For instance, globally there has been a more than threefold increase in loss-related floods since 1980 and more than double the number of windstorm natural catastrophes, with particularly heavy losses as a result of Atlantic hurricanes.

While this is not apparent in the same way for events with geophysical causes, there is some justification for assuming that at least part of this trend is the result of anthropogenic global warming.

Munich Re's NatCatSERVICE defines a natural catastrophe as an event resulting in substantial material or human loss. Catastrophes are divided into specific categories and require various criteria to be met. Whilst some events are identified as being of regional significance, others will be defined as major disasters in global terms.

The database distinguishes between the following main types of events in Oceania:

- Geological events, like earthquakes, tsunamis, volcanic activity and eruptions.
- Atmospheric events, like storms (e.g. tropical cyclones, winter storms, severe weather), floods (river floods, flash floods, storm surge), mass movements (landslides, avalanches), bushfires, droughts, heatwaves, cold spells and snow load.

The presentation will provide an update, focusing on the global natural catastrophe picture and contrasting it to the local situation.

Presentation available at

www.sydneycoastalcouncils.com.au/sites/default/files/econom_sandra_schuster.pdf

Dr Stefan Hajkowicz, Director, Human Services Delivery CSIRO

Dr Stefan Hajkowicz is a principal scientist with CSIRO. He thinks about how people make choices and plan for the future. His decision models have guided government and industry investment choices worth hundreds of millions of dollars. He has published widely in the international scientific literature and routinely talks about his research at public seminars and conferences. He has a Bachelor of Arts and Doctorate from the University of Queensland and postgraduate economics qualifications.

Our Future World - Synopsis:

How will our children, grand children and great grand children be living? What policies, research and investments do they need us to make today to make their lives better tomorrow? A team of over 50 scientists and business analysts in CSIRO identified five megatrends, several megashocks and two scenarios for the next 20 years. A megatrend is a pattern of environmental, social and/or economic activity with profound implications for how we live. Megashocks are sudden, hard to predict, single events. Scenarios are a mix of science fiction and science fact and explore how the trends and shocks might play out into an uncertain future.

Presentation available at

www.sydneycoastalcouncils.com.au/sites/default/files/econom_stefan_hajkowicz.pdf

Dr Leo Dobes, Adjunct Associate Professor

Crawford School of Economics and Government, The Australian National University

Dr Leo Dobes is an Adjunct Associate Professor at the Crawford School of Economics and Government at the Australian National University. Following a DPhil (Oxford), he worked for almost 30 years in public service positions including the diplomatic service, the Office of National Assessments, Defence, the Australian Treasury and telecommunications reform, as well as being appointed to the College of Experts of the Australian Research Council. In 1992 he established an Environment Branch within the Australian Bureau of Transport Economics, publishing a series of reports on the costs and benefits of mitigating greenhouse emissions in the transport sector. His key current interest is the application of 'real options' in the formulation of policy on adaptation to climate change.

Getting real about adaptation: using 'real options' to address climate change uncertainty in a cost-benefit framework - Synopsis:

Coastal councils face both budget constraints and uncertainty about the likely effects of climate change. Both issues are readily addressed within a cost-benefit context using a 'real options' approach to adaptation. Conceptually analogous to financial options, real options are an intuitive methodology based on flexible planning, combined with continued monitoring, that can reduce the overall costs of projects in situations of uncertainty. The application of Monte Carlo methods and the use of extreme value ('fat tail') distributions can further help planners assess likely future social costs and social benefits.

Presentation available at

www.sydneycoastalcouncils.com.au/sites/default/files/econom_leo_dobes.pdf

Panel Discussions

PANEL DISCUSSION 1

Various topics discussed in this panel session covered:

- The different evaluation methods:
- How we determine different values and social values; and
- What we need to think about for the future of coasts in NSW and the costs of management.
- How much are we willing to pay to have the beach saved? Beaches are all different but they do have common attributes. A question was asked regarding the 'Valuation of Sydney beaches' project of why choice modelling was not used. At the time Mr Anning was advised under review that choice modelling is a very complex method, trying to describe beaches by any number of attributes. The decision was made not to go down that path for his PhD. However the next project leading on from the PhD (Quantifying the Value of Sydney's Beaches) will be using choice modelling to explore in more detail some of the things that were touched on in the research. It was noted that methods of research do go through a certain evolution, with things being constantly improved or worked on, and this is what has happened in the PhD project. The choice modelling method is much more robust and examines a range of options, however it is not just a one stop shop for contingent valuation research.
- A concern was raised that there is no accounting for future debt by reclaiming land, and there is no economic modelling for values that have already been lost. The response from the panel was in agreement that cost benefit analysis has limitations only taking into account certain values and not others. However a goal must be to have a consistent approach of decision making and use standardised methodology.
- It was noted that coastal and marine ecology should be protected for the whole coast and not just certain areas. The main problem is the overall contribution to the national economy from coasts is limited but locally significant. In response to this the panel agreed that the only economic way to nourish beaches would be to nourish all of Sydney's beaches not just one, as the economic value to nourish individual beaches are discounted by nourishing adjacent beaches due to sediment transport. It was also mentioned that going to the beach and the social values from those experiences could defend the level of money needed to nourish beaches instead of spending on other amenities, which would not have the same social / mental benefit / value of using the beaches.
- A question was raised about considering equity and valuation methods used in different areas of the coast. For example it will cost the same amount to replenish the beaches in southern NSW, but the value of housing and tourism values in these areas are considerably less than in areas around Sydney. This would make a difficult case for southern Councils trying to obtain money from Government for sand nourishment activities. It was felt that this is not only a State and National question, but also involves the community. For example at Old Bar the local community are so concerned about beach erosion they are raising funds themselves for some offshore studies to be conducted to see what is going on in the beach zone. They do not want to be left out of this matrix, they want to be involved in protecting their houses, their beach, their community. This issue is only going to multiply in the future.
- The panel was asked about how the sand nourishment study was received by State and Federal government, was there any feedback? In response letters and final

outcomes were sent broadly however there has been no formal feedback as yet. The research has pushed the debate forward and it is moving forward at an international level with the UK recently releasing guidelines in relation to sand nourishment procedures. It was noted that the SCCG designed the study with the Gateway process in mind so that it could easily be assessed.

- In the NSW Government State Plan there were five references to NSW beaches showing
 it was on the agenda, however in Queensland's Q20 Strategy public open space does
 not include beaches in the evaluation as there is apparently no accounting for
 beaches as they cannot be defined.
- It was discussed that in order to have acceptance of sand nourishment of beaches it needs to be brought into the political domain and the issue mainstreamed, perhaps breaking down the vales and economic benefit to both State and Federal Governments. We need to make a case, a good story to enable a choice.

PANEL DISCUSSION 2

The afternoon panel discussion focused on planning for the future.

- Should we have a national insurance scheme or a futures fund?
- What would these funds cover?
- What do the people want?

The panel was asked is it a good or bad thing that there is a transfer of risk from private to government with a suggested National insurance scheme and would a National insurance scheme work? In response the group was informed there is currently a nationwide re-insurance pool for terrorism, and the question has been raised if there should be a national flood identification of funding. It was noted that in the 1970's a National policy was proposed to the Government but it was rejected by Treasury.

A discussion followed about fixed budgeting, having a futures fund which would take on board future climate change issues. The response was that having a compulsory insurance could potentially be a moral hazard. For example people will protect their property first and continue to build in vulnerable areas. Additionally how do you set this insurance form, is it a natural hazards policy or just a flooding policy. People who do not live at the coast would not be interested in a coastal flooding insurance; the only people who would want to buy this type of insurance would be the ones that get flooded.

A point was made by a delegate that there is a potential policy problem in regards to natural hazards. There are increasing circumstances of natural hazards and because of uncertainty the tendency is to push the risk and cost back onto property owner. Currently coastal insurance that is available does not cover coastal erosion or inundation by the sea. How is it that we treat these things differently to bush fire, which you can be covered for?

It was noted that these are decision-making problems and essentially is social cost benefit analysis. Currently we assess natural hazards in very different ways and these need to be addressed in an integrated fashion. As cost benefits, politics and legislation responses are also currently not aligned and this needs to be addressed. For example flooding reinsurance is only just starting for residential properties and we need to ask people what they want to be able to adapt to climate change.

The panel discussion ended with some specific questions in relation to Dr Leo Dobes presentation. Firstly asking for clarification on how long do you need to wait to know the definites about climate change? In response it was said we do not know, we have to keep looking, thinking, and researching. It will get to a point where too much damage is being caused by climate change and then we will have to decide what to do. Dr Dobes noted that intergeneration equity is quite irrelevant to adaptation. The question needs to be asked why are we adapting so the current generation can ride out the next 'X' many years in comfort. Intergeneration is 50 years forward and they would have different ideas, technologies and solutions to today's problems. For example today's choices are build a sea wall.

Dr Leo Dobes was asked if planned retreat was an example of a real option?' In response Dr Dobes thought it was a decision and not a 'real option' in the sense he was talking about. It is an absolute decision you either retreat or do not retreat and are investing fully, so it is not a real option. However it is a flexible approach, do not retreat today but will retreat in 'X' many years time.

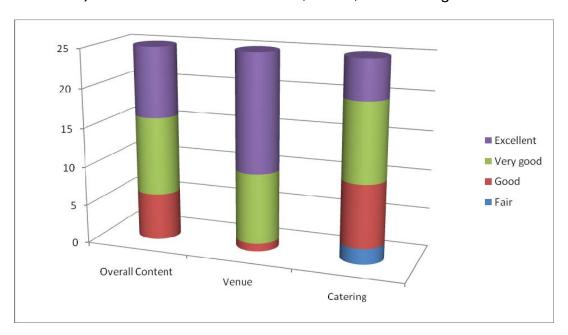
CONCLUSION

SCCG would like to sincerely thank all the presenters who gave up their valuable time to share their knowledge and experience. Thanks also go to all those who attended and contributed to the panel discussions. The SCCG will further scope future events from the suggestions made at this forum.

Evaluation Results

Evaluation was conducted at the end of the Forum to assess the value of the day and investigate future opportunities / topics the SCCG could address in relation to economic management of the coastal zone. 25 out of 62 attendees completed the evaluation forms providing the following results.

Question 1) Please rate the Overall Content, Venue, and Catering.



Question 2) What did you feel was the most valuable part of today's Forum?

The responses fitted into two clear groups, 1) experience of the day and 2) content.

1) Attendees thought the Forum was a good opportunity to build relationships and for cross disciplinary exchanges of information. The panel discussions were highly valued by the majority of attendees. 2) In terms of content people commended the diversity of presentations and exposure to new concepts, stating the insurance presentation complemented the more economic focused presentations. The CSIRO Future World presentation was most favoured, followed by the presentations on valuing social importance and quantifying the values of Sydney's beaches, and the AECOM presentation on sand nourishment of Sydney's beaches.

Question 3) What would you like to hear more information about in this space?

There were five areas attendees would like to hear more information about: 1) Planning and Management, 2) Funding, 3) Adaptation, 4) Risk / Insurance, and 5) Other. Specific requests were as follows:

1) Planning and Management

- Environmentally sensitive methods to manage beach erosion.
- Ways to fast track approvals to undertake beach management programs.
- Sessions targeting planning and management decisions for Local Government.
- How we can use data and trends to manage for the future policies, procedures, risk, and community involvement.
- How to utilise this thinking across a diverse array of management options a management plan rather than a large project / investment

2) Funding

- Sources of funds to manage beaches.
- How Councils can source funding for protection works (please see the SCCG Funding Guide 2011 found at www.sydneycoastalcouncils.com.au/Funding_Guide)
- Funding options for adaptation.

3) Adaptation

- Integrating climate change adaptation into Council asset management plans & infrastructure management upgrades programs.
- Analysing the benefit / cost ratio of adaptation measures and options.

4) Risk / Insurance

- Actual coastal economy reinsurance, risks and climate change in coastal areas
- Risk insurance planned retreat, mal adaption to liability solutions

5) Other

- Emerging technology / approaches for valuing social & economic use of beaches / coastal areas
- Solutions for coastal development conflicts between NSW legislation and council responsibilities
- Application of theoretical ideas and critical review so we can learn from the projects how has the knowledge been transferred to influential action
- Better understanding of how many people visit the beach

Question 4) What are you currently working on that you think might interest the SCCG?

Ann Stewart Gosford City Council	 Research project with CSIRO to identify a range of social, environmental and economic triggers for a range of management options in the long term. The management options come from the coastal, estuary and floodplain risk management plans. Dependant on monitoring systems to be identified with options for responsibility for investment in these systems.
Adam Weir Surf Life Saving Australia	Conducting research relating to rip currents and behaviour. Also looking into coastal public safety risk assessment and treatment, looking at new technology to assist this process.
Kurt Sorensen Wyong Council	 Economic impacts of climate change on property prices. Sediment transport dynamics of The Entrance Channel. Wyong CZMP.
Colin Mable Rockdale City Council	 Addressing ongoing beach erosion along the western boundary of Botany Bay between Cooks River and Georges River. High cost of beach nourishment works beyond Council funds. Study to address predicted sea level rises in the low lying areas of the City.
Alistair McIlgorm ANCORS, University of Wollongong	 I have several publications on the marine economy (a) general review, (b) study of 7 Asian coastal economies. Hope to follow future research in coastal economy climate change adaptation in the marine sector. At ANCORS we have several legal, policy and governance academics specialling in marine and coastal issues.
Bronwyn Englaro Randwick Council	 Flood study results and implications for affected properties / landowners. Reviewing Green Building Councils draft "Green Precincts"

	rating tool which addresses many aspects of climate change adaptation and seeks to identify best practice measures.
Doug Lord	Ranking hazards to coastal infrastructure under control of
Coastal Environment	Councils.
	 Adaptation (protection) option guidelines through NCCUE.
Peter Coad	Funding for Coastal Management Plans.
Hornsby Shire Council	Estuary Management.
Rafiq Islam	• Strategic management of coast and encouraging community
Manly Council	participation.
Ivon Sebastian	 Coastal hazard study, due for completion by the end of 2011.
Waverley Council	From there a coastal zone management plan and amended
	s149 planned.
Leo Dobes	Emergency management. Valuations by people in Cairns on
ANU	different aspects.

Question 5) Please recommend any additional related <u>forums</u> that you would like to see in this space.

There were three main areas attendees would like to see additional related forums, these were 1) Policy, planning and insurance, 2) Adaptation responses, and 3) Climate Change. Specific requests were as follows:

1) Policy, planning and insurance

- Coastal management policy forum: strengths & weaknesses, implementation of effectiveness of the NSW coastal reforms, opportunities and constraints for adaptation.
- Coastal management planning: risk management tools applicable, and conflicting and complementary responsibilities.
- Insurance, valuation related to flood studies.

2) Adaptation responses

- More information on the beach nourishment project: the costs, performance and acceptance by the public, Council and other government agencies.
- Implementing structural change for climate change adaptation: ways to refurbish existing sea walls / revetments effected by the increases in storm surges and sea level rise.
- Flexible adaptation pathways
- Implementation strategies in local areas inundation, predicted impacts, disaster planning.

3) Climate Change

- Effective community consultation processes in relation to conveying and creating awareness of climate change risks and hazards in your LGA i.e. flood studies
- Identifying staff development needs in Councils to meet these coastal and climate change issues.
- Public safety and usage of the coast by people. How will extreme weather events and climate change affect the way people use the coasts and how this impacts on public safety.
- Workshop focusing on environmental accounting how to link values to economic accounting methods to raise profile of environmental / social aspects in decisionmaking / budget setting projects

Question 6) Please recommend any additional related <u>projects</u> that you would like to see in this space.

There were several additional related projects suggested, as follows:

- Research on risk assessment. Disaster emergency management: are councils and communities suitably prepared and who is responsible?
- Manual of economics for Integrated Coastal Management.
- Methods for evaluating the future effectiveness of existing coastal protection works and strategies.
- Examining the coastal economy in Eastern Australia as a basis for Councils being involved in policy making and for climate change adaptation.
- Case studies of real options (successful low cost) and limitations for adaptation (build it into the SWC / SCCG program). Evolving strategies for adaptation and mitigation.
- Effects of predicted sea level rise on existing wetlands or salt marshes that will be inundated by higher sea levels.
- Assessing the cumulative impact of implementing all SCCG Member Councils LEP's.
- Conflict resolution approaches in coastal management.



SYDNEY COASTAL COUNCILS GROUP Inc. Level 14, 456 Kent Street GPO Box 1591, SYDNEY NSW 2001 Phone: (02) 9246 7791

Facsimile: (02) 9265 9660 info@sydneycoastalcouncils.com.au www.sydneycoastalcouncils.com.au