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CARING FOR OUR COASTS?

Professor Bruce Thom AM

**Former, Chair Coasts and Climate Change Council
Chair, Australian Coastal Society**

In this presentation I wish to offer a personal reflection on progress and issues that arise from national interests in adaptation to coastal hazards including those arising from potential impacts of climate change. This reflection will embrace initiatives that resulted from the platform of the ALP at the time of the 2007 federal election, “Caring for our Coasts”, and the on-going difficulties in transferring science of climate change into policies at all three levels of government.

First, let us look at some images of coasts of the future.

Venice under a metre sea level this winter; Venice experiences very high tides at all times of the year, but importantly these high levels of inundation are occurring more frequently.

Around our coast, king tides are creeping up. Many areas are beginning to experience this though not at the scale of Venice except perhaps in the **Torres Strait**; photographic records of where **summer king tides** are reaching in NSW also highlight places of inundation including roads, low-lying infrastructure and private properties.

I term this increasing frequency of higher and higher tides the “VENICE EFFECT”.

Kingscliff is undergoing a vicious phase of erosion. Tweed Council is losing valuable community assets and beach amenities, and is faced with a huge dilemma. As sand supplies dwindle to offshore or alongshore sinks, the foreshore caravan park is being cut away.

Loss of beaches is becoming an increasing occurrence on parts of the Australian coasts where sand moves from one embayment to another and this loss is exacerbated by the presence of **seawalls**.

This is what I will term the “**KINGSCLIFF EFFECT**”.

Neither of these two effects can unequivocally be attributed to climate change. **Natural variability** can drive higher and higher sea levels due to sediment compaction or regional subsidence, or changing patterns of ocean circulation. A shift to more easterly waves can induce shoreline erosion, with the beach oscillating around a mean position in the long term. Human intervention, such as training walls at river entrances or sea walls replacing natural foredune buffers, may disturb the patterns of natural variability that causes vulnerability to built assets located in naturally hazardous coastal zones, as seen at Kingscliff.

But houses and public infrastructure are placed at much greater risk to damage from erosion or inundation by rising sea levels and storm surges as the **impacts of climate change** become more obvious. Many beaches, such as **Bondi**, are at present quite resilient to erosion as a result of the way sediment movements within a closed compartment respond to storm events. This is used as “evidence” by some climate change sceptics that climate change is an illusion. However, these beaches must switch to an erosion-dominated condition at some point as sea level continues to rise without costly artificial sand nourishment. Who will be responsible for these costs?

Society may be prepared to put up with the odd king tide “flood” event, but twice a day? And many councils and land owners will not be too concerned about the odd beach erosion event, but not if their land is going to be permanently lost to the sea.

Landowners will fight to prevent their homes from being washed into the sea. But many others in the community will fight to keep their beach as at **Narrabeen** in 2002 when 3000 people joined hands along the beach to protest at a council proposal to build a permanent sea wall to protect private properties. The wall was not built.

So how can we as a democratic society decide when and where to build sea walls; relocate homes or towns; build barrages on the scale of the **Thames**, or protective levees supplemented by pumping systems as in **New Orleans**? Which beaches will be nourished and whose property will be protected? Big decisions must be made along the **pathway of decision making** as natural vulnerability and climate change forces come together at different places and at different times.

All this is very hard at a **local level of government** when faced with cries of loss of beach amenity, or of property value, or even worse a failure to use scarce public funds to protect individual homes. Councillors will be the brunt of these conflicts between landowners and the broader public interest.

SHYLOCK in the **Merchant of Venice** said:

“You take my house when you do take the prop that doth sustain my house.

You take my life when you do take the means whereby I live”.

We recognise many people are prepared to live in hazardous places, and if given the chance pay for the protection even at the expense of a beach. I have seen good examples of this behaviour

in **New Jersey**. This is not the sort of coastal condition that most Australians would ever wish to have imposed upon them: a seawall under constant wave attack, no beach at any tide, and no access to the foreshore!

Foreshore landowners now pay a premium in enjoying the location, the view, and access to the sea. Many are prepared to accept natural hazards of beach erosion and storm surges as just another risk. And one of the risks may include no insurance cover! I am informed by valuers that **property value** may bear little or no relation to being informed of risk; for them the market interest and status for living at such prime locations outweighs knowledge of the risks.

At what cost do governments and hence the rest of us tax and rate payers carry in allowing continued occupancy of such hazardous places? Put another way, to what extent is society prepared to allow these landowners to put themselves and their highly valued assets in **harms way** with the expectation that a government will serve as the **insurer of last resort** and come to their financial or property protection rescue when the inevitable destruction of asset occurs?

Governments at all levels have the **responsibility** of seeking the advice scientists and engineers who can define the probability of assets being destroyed or damaged by extreme storm events, or as a result of longer term adverse circumstances such as those arising from global warming.

Climate and ocean scientists, coastal geomorphologists and engineers are in a position to **model and monitor** long-term impacts. Nations have invested billions in the science that underpins international and national efforts to address the horrors of a 2 to 4 degree warmer world. Since the 1990s, governments have been in a position to receive the advice from these scientists through the IPCC following exhaustive reviews of the scientific literature. Many countries are developing both

mitigation and adaptation strategies based on this advice including Australia. Countries such as The Netherlands are undergoing major investments in climate change adaptation.

They are not taking these huge adaptation steps for fun! Observations coupled with models of ice sheet, ocean temperatures, and sea levels all point in one direction: that it is highly likely that human activities are inducing climate change. The **Climate Commission** is documenting physical and biological changes in Australia.

One example which is yet to be reported in the climate change literature, but is well known to the taxonomists and ecologists studying sea weeds and that is the southern migration and break-up of **kelp** beds along the east coast accompanying periodic bursts of warm waters in the East Australian Current. Alan Millar from the NSW Botanical Gardens has made me aware of the scale of such changes.

While uncertainties exist, the drivers are firmly in place to take humans way beyond the comfort zone of present-day climate variability into a world of greater weather extremes, disease, heat, food and water insecurity, and for us coastal folk both Venice and Kingscliff effects many times over. This is not “**alarmism**”; it is the SCIENTIFIC basis for sound strategic planning and coastal management.

The fact that some in the community do not see evidence of climate change is no basis for denying that it is occurring. That it will involve increasingly adverse impacts, most likely at an exponential rate, in the future, is projected by most reputable climate scientists. Society may seek certainty and definite answers to risks. However, the very nature of the biophysical world requires scientists to communicate their projections in terms of probabilities and no matter how uncomfortable that may be to decision makers, it is the reality of the “new climate change era”.

Therefore, no “head in the sand” or denying is reasonable when faced with the issues of exposure to hazards like those seen in the past PLUS the potential exposure from climate change. **LONG-TERM RISK MANAGEMENT** requires of decision makers to strategically plan for such impacts. This is both equitable and precautionary and must be the basis of **wise investment** decisions by both private and public sectors. Maps are needed to define levels of risk expected in hazardous areas where built assets are under threat. The new Queensland Coastal Plan adopts this approach.

I take the very strong view that we have obligations to **future generations** to seriously examine and develop policies and programs to address these future risks and limit the costs to society of placing built assets in harms way. It should be possible and very prudent to meet the demands of those living and working on the coast today to limit current and future exposure to risk even though future generations do not vote!

So what has the **AUSTRALIAN GOVERNMENT** been doing that may help the cause?

My experience as a coastal scientist in advising governments on national and state **coastal policies** goes back to the late 70s. I have observed periodic eruptions of interest in coastal issues leading to parliamentary inquires or initiatives. In general, the result of these activities has been a stop-start set of programs and policies with many limitations to long-term implementation designed to improve environmental health and minimisation of risk to natural and built assets along the Australian coast.

This contrasts to some degree to what we observe in the federated system of the **USA** where we can show examples of sustained federal-state government commitment in coastal management. In Australia, constitutional responsibility for land

use planning, coastal management and local government is vested in the states. The result is often very different approaches to coastal management and land use planning between the states. There is no consistent national approach or even a requirement for such an approach in Australia.

For administrative and budgetary cycle reasons, it has proven very difficult for long-term partnerships to emerge similar to those under the federal coastal legislation and estuary programs in the USA. Yet recent natural disasters increasingly point to our Commonwealth Government being the **insurer of last resort**. And it could be argued that any increase in the frequency and intensity of such extreme events along with rising sea levels and associated costs that will result from climate change impacts, will necessitate greater federal engagement in long-term strategic risk management in Australia. Is there a need for a “future” fund to cope with these anticipated costs?

In 2007, we had a new Labor Government in Canberra with a coastal platform, **Caring for our coasts**, which included a review of coastal pressures arising from climate change as well as population growth and infrastructure deficiencies in fast growing “sea change” coastal regions.

The **House of Representatives 2009 report** (“**The time to act is now**”) with its 47 recommendations was one outcome. Many here participated and we have much to thank the chair of that committee Jenny George for its comprehensive work. The Government has responded to that committee’s report leading to more recent actions some of which are discussed below.

The new Government also established **DCC** and through that department we had the promised **national coastal forum (2010)** and several coastal reports focussed on risk to natural and built assets (2009, 2011).

This department took an enormous step in producing “indicative” **coastal risk maps** at a local government scale, an enormous and challenging experience for all involved. These national risk assessments covering 35000km of coast are the first of its kind anywhere in the world. Essentially they offer each coastal local council a base for more detailed local hydraulically controlled studies—**Gold Coast** has done this.

Minister Greg Combet has shown an active interest in developing the Government’s response to the House of Representatives report. He is now in a position to build on various adaptation initiatives such the CAP program. He has also strongly supported the activities of the Coasts and Climate Change Council.

I have been privileged to serve on the **Coasts and Climate Change Council** over the last two years; in 2011 I was its Chair. Our role has been to develop advice to the Minister for Climate Change on key issues facing coastal decision makers in responding to climate change impacts.

In working up these recommendations we had the benefit of the expertise and experience on the Council of local government including the President of ALGA, two highly respected mayors, a lawyer, a planner and an engineer. **Two legal reports** were commissioned, one on liability issues in conjunction with ALGA, the other on legal instruments related to coastal management in all states and territories. Our work enabled us to further examine some of the George report recommendations such as those on legal liability facing local councils.

We took the view that **Australian Government leadership** is fundamental in driving co-ordinated action so that the nation as a whole could better address key barriers and build capacity to manage climate risks more effectively. We also addressed ways for the federal system to develop more coordinated and

sustainable programs with direct Australian Government engagement.

There are **FIVE AREAS** that the C&CCC felt would benefit from action now, with relatively little immediate cost to government:

1. National coastal **climate risk standard** to guide planning and investment where Australian government funding is involved.
2. Improving decision making through better **science and information** on climate change risk in collaboration with the states and local government, including the use of regional modelling and nationally consistent hazard assessment methods
3. **Coastal policy and regulatory reform** to address existing barriers to adaptation such as building codes and legal liability, as well as emerging issues such as the application of the public trust doctrine to help balance public interests and the rights of property holders
4. **On ground adaptation**---tackling hot spots of extreme risk through the identification of locations and infrastructure where early planning is needed (it took 30 years to plan and construct the Thames barrage
5. Integrating climate change into **national agendas** currently underway, including insurance, natural disaster risk and urban and regional policy.

It was very clear to the Council that **local government** was at the front line of coastal climate change adaptation. **Andrew Beatty** has made this point many times to local councils from a legal perspective. Yet political divisions, lack of technical and financial resources, and **timidity** in the face of legal challenges and insurance threats, make it hard for most local councils to implement policies, guidelines and even legislation that link to climate change, if it exists at all.

But is that all?

I have been frustrated by the **forces of resistance** to coastal reform across the spectrum of Australian governments. Inquiries back to 1979 all speak of difficulties facing federal and state governments in embracing the **cross-sectoral** demands of coastal management and planning. Despite the best intentions of incoming governments, often allocation of portfolios along with the need to defend portfolio responsibilities, inhibits any capacity to develop and implement **ICZM**; the dominant paradigm is **Disintegrated CZM**!

Abolition or constraining state expert **coastal councils** that report to Cabinet (or even a parliament) through a Minister is testimony to an indifference or reluctance to receive independent coordinated advice. So the coast suffers. Having said that, I am very pleased to hear that the new Victorian government has retained its coastal board structure, a structure highly commended in the House of Representatives inquiry.

In addition, time and time again I have observed **coastal reform** being hindered by bureaucratic inertia, changes in funding priorities, administrative and personnel restructuring, and lack of available information; there are also failures to coordinate decisions within and between governments and agencies of government, and a lack of interest in the “long term” by those who are forced to make decisions within a present-day economic, political and budgetary framework. Often I feel we are a nation enthralled by the political and commercial demands of “short-termism”!

On top of all these fairly well-known barriers to adaptation, which I hope the Productivity Commission will address, climate change policy is faced with the **ever-growing influence of the science deniers**. They are targeting local councils. Recent events at Lake Macquarie in NSW are an example. The threat is

that at a local level the “popularity” of climate change denial will lead to the election of candidates with a platform that will resist long-term strategic risk management that embraces the impacts of extreme events and climate change.

What legal **liabilities** will this entail for local government?

How will councils and landowners combat the opposite pressure that comes from **insurers** who are astutely aware of future risks?

And to counter the mantra that long-term risk management is anti-jobs, anti-progress, denial of freedom, etc, how can councils ensure that **investors and developers** be given more **certainty** using a strategic, risk management approach based on the best available science?

I see the necessity for federal and state governments to be in a coordinated position to support local governments achieve long-term objectives without destroying the economic, social and environmental health of coastal regions.

The **Coasts and Climate Change Council** has offered the federal government and COAG with a set of measures that should guide better long-term decision making. If the Commonwealth has firm **standards** and investment guidelines, those guidelines could be used to inform state and local governments, the courts, insurers, banks and the property market as to how best to limit the risks. It also should offer agreed methods to map and provide consistent information on what has been termed the “hierarchy of coastal risk” at regional scales.

But this all requires **champions** in politics, and in private and public sectors, to give such recommendations a priority. Your interests demand that they do. We face a grave loss of **momentum** from those flowing from the 2009 and 2011 reports.

Here is where the **National Sea Change Task Force** can play a major role in advocacy. It has done a magnificent job already and to my mind is in a position with ALGA to push the federal government in delivering on the recommendations of the C&CCC, and even achieve through the **COAG** process, inter-government commitments in line with the George report.

The **Australian Coastal Society** is now in existence to help. It is pushing for a National Coastal Commission based on the model of the National Water Commission, but with teeth to see implemented a long-term vision in the national interest. As a nation we must take seriously models of management that exist in the USA and The Netherlands.

Critically we **MUST** improve support the capacity of local councils or at the very least regional groupings of councils in their management roles. Clearly state governments must recognise the need to work with local councils in planning and management decision-making including the production of maps based on the best available science. State agencies should also support the legal challenges that may arise from those who perceive disadvantage and not allow councils to cover all the legal costs given the uncertainties of projections that underpin the decisions. And states would be better served in terms of coordination and implementation levels through independent, advisory, "whole of government" coastal councils. The worst we can do is nothing and then allow the **courts or insurers** to be the arbiters of coastal policy!

The coast transcends so many sectoral boundaries---that is why reforming governance and decision making is so hard.

Sustaining our efforts to date is a huge challenge and one the Commonwealth, state and local governments must continue to resource. **Climate change adaptation** is an imperative that cannot be ignored.

