



COMMONWEALTH OF AUSTRALIA

## Official Committee Hansard

# HOUSE OF REPRESENTATIVES

STANDING COMMITTEE ON CLIMATE CHANGE, WATER,  
ENVIRONMENT AND THE ARTS

**Reference: Climate change and environmental impacts on coastal communities**

THURSDAY, 26 MARCH 2009

SYDNEY

BY AUTHORITY OF THE HOUSE OF REPRESENTATIVES



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**HOUSE OF REPRESENTATIVES STANDING COMMITTEE  
ON CLIMATE CHANGE, WATER, ENVIRONMENT AND THE ARTS**

**Thursday, 26 March 2009**

**Members:** Ms George (*Chair*), Dr Washer (*Deputy Chair*), Mr John Cobb, Mr Dreyfus, Mrs Irwin, Ms Livermore, Ms Marino, Mr Murphy Mr Scott and Mr Zappia

**Members in attendance:** Ms George, Ms Livermore, Ms Marino, Dr Washer and Mr Zappia

**Terms of reference for the inquiry:**

To inquire into and report on:

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

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

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**Committee met at 9.00 am****STOKES, Mr Alan, Executive Director, National Sea Change Taskforce**

**CHAIR**—I welcome Mr Stokes here this morning. The committee is inquiring into climate change and environmental impacts on coastal communities. The Minister for the Environment, Heritage and the Arts and the Minister for Climate Change and Water have asked this committee to examine the environmental impacts of coastal population growth as well as 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 committee will also look at existing policies and programs related to coastal zone management, mechanisms to promote sustainable coastal communities, and governance arrangements for the coastal zone.

I would like to welcome the representative from the National Sea Change Taskforce to this public hearing. Although the committee does not require you to give evidence under oath I should advise you that the hearings are legal proceedings of the parliament and warrant the same respect as proceedings of the House itself. In this regard, the giving of false or misleading evidence is a serious matter and may be regarded as contempt of parliament. The committee has received your submission and it has been authorised for publication. We would now like to invite you to make a brief opening statement, if you so wish, before we proceed to questions and discussion.

**Mr Stokes**—Thank you. I would like to start with a very brief outline of our organisation and why it was formed. The National Sea Change Taskforce was established in 2004. It was initially formed by a group of chief executive officers and general managers of coastal local government authorities from all states around Australia who came together to discuss a number of common issues that they were facing in their communities. At that initial meeting held on the Sunshine Coast they set in train a process which led to the formal establishment of the taskforce later that year. It was also to outline a number of objectives of the group.

One of the key objectives early on was to undertake research to identify the key priorities facing coastal communities. Local governments all around Australia in coastal areas are aware, and have been aware for a number of years, that they were facing increasing growth pressures, very rapid population growth, and the attendant inability to provide the resources, services and infrastructure to meet that growth in population.

I can give an indication of how extensive that growth rate is. We track the ABS figures on an annual basis. What we found from the most recent figures for the year ended June 2007 is that over the preceding 10 years, from 1997 to 2007, there had been an increase of 1.27 million people living in regional coastal areas around Australia. That figure represents six per cent of Australia's current population. That total figure of people living in regional coastal areas is now over 6.25 million people, which represents 82 per cent of Australia's regional population. We are talking about a very large percentage of people who have moved into these coastal areas over the last two or three decades. Many of these coastal areas have been growing for half a century or so, but the growth has been particularly rapid over the last two decades. That brings with it pressures of many types, and our research found that there are five key priorities facing these communities.

Firstly, there is the infrastructure and services. The population has moved to these coastal areas, but the resources did not move with them. Therefore, it became increasingly difficult for coastal councils to meet the demands for community services and facilities that they were facing as a result of that population growth.

Secondly, there is the environmental impact. All you really need to do is look a couple of hundred kilometres north and south of Sydney, east and west of Melbourne, and north and south of Brisbane to see the effect of that population growth with the suburbanisation of coastal Australia. We are seeing in effect suburbs spread away from the major capital cities over areas that were previously, in many cases, just sand dunes or native vegetation, and it means that there has been a massive impact on the natural habitat along the coast.

Thirdly, there is the issue of institutional arrangements, or governance. We believe and we proposed in our submission that there needs to be a review of the current institutional arrangements as they affect the coast because all levels of government, at this stage, have a finger in the governance pie. The existing institutional arrangements are confusing. There is a lot of duplication. Sometimes it is unclear who is responsible for what in terms of the planning and management along the coast. We believe that a review could clarify some of those issues and also clarify the role of the various levels of government in planning and management.

Fourthly, there is the issue of community wellbeing. The widely held perception is that the people moving to Australia's coastal areas are fairly well off, that they are retirees who are cashed up and in a good position to be able to send up local property prices and so on, but that is in fact not the case. The ABS Social Trends Survey, published back in 2004, analysed the population that had moved into coastal areas around Australia in the year prior to the 2001 Census and they found that during that period 79 per cent of people who had moved into those coastal areas were under the age of 50 and many of them had young children. What we find is that, in fact, the level of social disadvantage in coastal areas is higher than the national average. We find that there is a higher proportion of low-income earners. We are also finding now that there is a very rapid increase in terms of aged populations in these coastal areas. One example is Victor Harbour in South Australia on the Fleurieu Peninsula, which has a median age of 43. I think the Australian median age is around 37 or thereabouts. Coastal communities are at the leading edge of the ageing of Australia's population, and some parts of Australia are going to feel this worse than others. Queensland, in particular, is going to feel the effect as people move south for their retirement.

Those are the key issues that we found in our research and that led to the commencement of a program that the taskforce has undertaken in terms of trying to lift awareness of these issues nationally at a Federal, and at a state government level and also within the broader population, because we believe that this is a national issue. If you look at a map of Australia, it is defined by its coast. We have some of the best beaches and coastlines anywhere in the world and we have lost a good number of them over the past few decades as a result of the suburbanisation that I have referred to earlier. How much more can we afford to lose in terms of coastal habitat and coastal environment, and how sustainable are the communities that live in many of Australia's regional coastal areas? Those are the issues that we are concerned about.

We are particularly concerned at the moment because the impact of the global financial crisis is being felt acutely in coastal areas. We have conducted a survey of our member councils to

assess current economic conditions in those areas. What we find in most coastal areas is a downturn in the property and construction sector, and a downturn in tourism. This is inevitably impacting on local communities and employment in local communities. Coastal councils are also experiencing a significant decline in revenue, as a result of reduced interest rates on their investments, but also reduced rate income and reduced development revenue as well. We are looking at the prospect of a very severe impact of this global financial crisis on coastal communities. I know there is another inquiry established to undertake that and to investigate that further, but I did want to flag that as an issue. It is a current issue affecting many of those communities.

**CHAIR**—On behalf of the committee, can I say how impressed we are by the efforts and the work of the National Sea Change Taskforce and the policy directions. You should be well satisfied that a lot of the issues that the taskforce put on the national agenda have been taken up to one degree or another by the federal government. I know you have been agitating for a long time for the Community Infrastructure Fund to assist local governments and you would have seen that additional funding was provided to those councils that had population growth. Whether the councils have spent the money addressing the sorts of issues that we would all like them to look at is something that will depend on an evaluation, but certainly the principle and the recognition of the pressures on local councils has had an impact at the national level.

You said in your opening remarks that all levels of government have a finger in the jurisdictional pie and that you were recommending that we undertake some review of that. We have been asked not just to review but to recommend possible future governance arrangements, and you do make the comment, as many do, that there is a need for a national framework to lead coastal policy. We are hearing from a lot of people that coastal issues should be national issues and, of course, you would be aware of the limitations constitutionally on what the federal government can and cannot do. Do you have particular views about what you would see as the proper role for a national government on coastal issues? Further to that, you have also proposed that we recommend the creation of a national coastal alliance.

**Mr Stokes**—That is correct.

**CHAIR**—Sorry, the Australian coastal alliance.

**Mr Stokes**—Yes, that is right.

**CHAIR**—You might spend a bit of time commenting on what you think the Commonwealth government could and should be doing and what the role of such an alliance might be?

**Mr Stokes**—We have been heartened by the statements by the federal government, particularly with the release of the Caring for our Coasts policy prior to the 2007 election. As we see it, the role we would like the Commonwealth to play is a leadership role in terms of developing that policy framework. We do not propose that the Commonwealth would take over responsibility directly, which is currently exercised by the states, but we do believe the Commonwealth is the only government that is in a position to be able to take a leadership role and initiate discussions, perhaps through the COAG process or one of the other ministerial councils, to work cooperatively with the states and with input from local government as well to develop that national policy framework.

I can give you an example of one of the reasons for our concern. Climate change is one of the issues that this committee is focusing on, and yet when I looked at the basis on which adaptation to climate change is being made in the various jurisdictions I was somewhat surprised, as a lot of other people were, to find the differences between projected sea level rises in different states all around Australia. I do not know whether this issue has already been raised with you.

**CHAIR**—It has.

**Mr Stokes**—It goes to the heart of why there is a need for some collaborative national approach to address an issue as fundamental as the projected sea level rise by, say, the year 2100. At the moment I understand that South Australia is one metre, Victoria is 0.8, New South Wales is heading towards 0.9 and Queensland is 0.3 or thereabouts. I do not know whether that has been updated, but that is what it was a few months ago. I think that clearly demonstrates the need for greater cooperation and coordination between the jurisdictions, the states and territories, but also in a process which is initiated by the Commonwealth. I do not see that any other jurisdiction is in a position to be able to initiate that process.

**CHAIR**—Do you see the current cooperative framework as being adequate?

**Mr Stokes**—I do not in terms of the outcomes. There is a whole range of issues affecting the coast, including the environmental and social impacts, the provision of infrastructure and the planning processes. I think they all should come under this national planning framework. It is one national resource that we are talking about and one of the most highly valued natural resources that we, as Australians, have. We all need to work together to draw up the guidelines by which it is going to be planned and managed in the future for future generations.

**CHAIR**—What do you see as the role of the alliance?

**Mr Stokes**—We have adapted the role of the alliance a little since it was proposed and this submission was prepared. We see that as an interface between the end users of research information and the research community itself. In fact, we have formed an interim steering committee to guide the further development of that coastal alliance. We have a steering committee which represents the CSIRO, the local government sector, the NRM groups and catchment management authorities, and also some of the other universities involved in coastal research. We have our first meeting coming up in a month's time to further define the role of that alliance. It has been sitting on our backburner for a couple of years and we felt that it was time to start to put that group together, because there is a need for an exchange of information between the research community and the people who need the information and the findings of that research, which currently does not exist. CSIRO has been very supportive in terms of their research. They are attempting to deal with local authorities, other catchment management authorities and so on all the time, which is really to create that interface and mechanism for information exchange.

**CHAIR**—Some of us went to your conference in Brisbane and noted the limitations of ABS data, and particularly not picking up the tourist component of population growth. Has there been any movement in that regard by the ABS? I had the feeling when I left that they had taken that issue on board.

**Mr Stokes**—Yes. They have taken that issue on board. It is an important issue. The resident population data is published—and the estimated resident population reports on an annual basis—and constitutes the official population data for Australia. It is taken in August, as I understand it, but it does not include the impacts of non-resident population in the coastal areas over the summer peaks. Some of these summer peaks are very dramatic.

**Ms MARINO**—It is in my area.

**Mr Stokes**—I am not sure where you are.

**Ms MARINO**—Southwest of WA—Capel, Busselton and Margaret River areas.

**Mr Stokes**—They are very much affected by that summer holiday peak and would have been particularly affected over the last Christmas/New Year holiday period. If we look at a place like the Byron Shire in New South Wales, you have a population of just under 20,000 but that can frequently spike to over 40,000 during that Christmas holiday period. All of those people are coming in needing to use the facilities in place in the town—the roads, water, sewerage and waste disposal systems. But the data on which the allocation of resources is made to that shire is based on the resident population of around 20,000 and not the 40,000 that is experienced over the holiday period. We have raised this with the ABS. They recognise that it is a concern. This issue was also discussed at our conference at Mandurah, once again with the ABS, and it was suggested that there could be a supplementary data collection over the Christmas/New Year holiday period. We have had discussions, but we have not seen any evidence of any movement towards addressing that.

**CHAIR**—You did mention the Regional Infrastructure Standing Committee, which is looking at the impact of the global financial crisis on regional communities. It is very important that the taskforce put in a submission, particularly looking at the socioeconomic composition of the vulnerability. I think that Professor Gurran has been working on that.

**Mr Stokes**—Yes.

**CHAIR**—That is a very important element that often is not captured. It is important for that to be reinforced.

**Mr Stokes**—We are in the process of finalising our submission at the moment, but the reports that we are getting back from coastal councils, particularly, say, on the mid-north coast of New South Wales, indicate that there is a severe impact of that downturn already. It has particularly affected the construction sector and people working in the construction sector. The Sunshine Coast is also at particular risk in socioeconomic terms.

The government's regional and community infrastructure program is starting to work in some areas. There is no doubt that the economic activity generated by that program is starting to have an effect, but it can only go so far in terms of alleviating the impact of such a severe crisis. Our research has identified that regional coastal communities are characterised, as I mentioned, by lower incomes, higher unemployment levels, and higher level of socioeconomic disadvantage than the Australian population as a whole. They have a higher proportion of families receiving

income support benefits and, as I mentioned, they are also at the forefront of Australia's ageing population. They are particularly vulnerable to the impact of the financial crisis.

**Dr WASHER**—I would like to know about the sense of wellbeing that you are measuring now. It is great that someone is actually addressing this. The issue is certainly in my area where I come from in Western Australia. I was talking to the CEO of the city of Joondalup only a couple of days ago. There is an increasing disenchantment noted in these coastal regions. Joondalup, as you know, is just north of Perth. They are seeing, anecdotally, more criminal behaviour, dysfunction, stretching of services and disillusionment in the community. If I go to a function and ask a group of people, 'Do you think your generation is going to be better off in terms of your children's generation? Stick up your hands if you think that is wrong.' No-one sticks up their hands. There is a sense that a lot of people have moved to the coast, but it is not as they would have anticipated because so many others have done it. The environment and the infrastructure have been compromised and the whole thing is a disappointment.

Basically that leads to my question. I was watching television this morning and I note there is a proposal to double Australia's population by 2050. As you said, 82 per cent of them are now living in the coastal zone region and the bulk of increase in the population in the last 10 years has been in that zone. What do you think is the solution? Should we take a debate on population and start looking at this at a federal level or should regional governments like local governments determine that enough is enough? This happens in England, where you can only get so many people in. Japan has made a determined effort that they will drop the population from 120 million people down to about 70 million people by 2050, and they do not seem too worried about it. This question around the population, its wellbeing and that of the environment is a real issue. I have not seen people pick this up and run with it. Can you comment on that?

**Mr Stokes**—I note your comments and observations on what is happening in your own community. That feeling of disillusionment is fairly widespread in many of these areas. If we go back to the beginning of this decade, people have moved, in many cases, to a coastal area for two reasons. The reasons at that time were that property prices in capital cities around Australia were escalating very dramatically and a number of people were being priced out of the capital city property markets, so they looked to go elsewhere. There was more affordable property, say, on the central coast here in New South Wales or south of Brisbane down on the Gold Coast, and in similar areas that were still within commuting distance to our capital cities. People could retain the option of moving out of the city but still travelling back for their work. Then the other factor kicked in, and that is the lifestyle factor. People look to the coast as a place that they want to bring their children up because it offers the prospect of a better environment for them to grow up in. At the start of this decade, in particular, those two factors were very powerful.

I have an idea that a number of people maybe did not do as much research in terms of what to expect as perhaps would have been advisable, because making that shift often goes hand in hand with reduced employment opportunities in the local market, or what employment opportunities there are tend to be part time or casual, which are the first ones to go in an economic downturn. Health care is not easy to access in a coastal area. Aged care facilities are also not easily accessible, and I predict this will be a huge problem in the future in these areas. I have no idea how that is going to be addressed. Some people did not expect that. They thought perhaps that they would retain the same level of access to services that they had in a capital city, but it is almost impossible to do that in a coastal area that is outside a capital city.

With respect to management or growth of the population, I have been concerned principally about internal migration in Australia, people moving from the cities and from regional areas into coastal areas. I would have to say that with the areas that our councils represent there is not a lot more capacity there that is sustainable, either in terms of servicing these areas or providing necessary infrastructure. I do not think that anybody really wants to see coastal areas turned into just outlying metropolitan suburbs. People do feel strongly about the coastal environment. They like going to the beach and they like spending their holidays there. They are attracted there. There is something inherently attractive about that coastal strip. I do not know how many more people we can fit into coastal areas in the future. I think we are approaching the limits.

**Ms MARINO**—Thank you for your submission. As you acknowledged, there are several of my councils engaged in your deliberations as a group. Given that so many of these councils are coastal and we are looking at the potential for sea level rises and the impacts on those communities, has there been any discussion in your group collectively as to where the potential liability issue lies for many of these coastal areas in relation to the potential for sea level rise?

**Mr Stokes**—That is a very good question and it is an emerging issue. One of the presentations that we had at our conference at Mandurah was by an environmental lawyer who is looking at this issue at the moment. I suppose the legal situation that local councils are in at the moment is that if they get a development application for an area of land they believe could be vulnerable in the future to sea level rise they are damned if they do and they are damned if they do not in terms of approving that development. If they approve it there could be a liability down the track if it becomes affected and inundated by the rising sea levels and the attendant severe weather events. If they do not approve it they are going to wind up before an appeals tribunal such as VCAT in Victoria or wind up before the Supreme Court in South Australia.

In the Supreme Court in South Australia there are now a couple of precedents that the courts have set. There was a case that was taken to the Supreme Court of South Australia early last year in relation to a development at a place called Marion Bay on the Yorke Peninsula. The Yorke District Council rejected a development application on the basis that, in the council's view, if you factored in sea level rise it was going to be inundated and at risk in the future. The developer took the council to court. The court upheld the council's decision that the DA should have been rejected on this basis and commented in the court's ruling that sea level rise was now expected, not anticipated, and should be factored into planning decisions such as the one by the Yorke District Council. There have been similar cases before VCAT in Victoria. There was a similar case here in New South Wales about a property down south of Wollongong.

My feeling is that the courts are going to play an increasingly important role in terms of establishing to what extent sea level rise and climate change impacts need to be factored into the planning process. Councils are really caught in the middle at the moment, because there have been jurisdictional difference, in terms of planning laws, between all the various states. What might be applicable in one state is not in another, so you cannot just necessarily take the precedent set in South Australia and apply it directly in Western Australia. Nevertheless, it has been flagged as an issue. As I say, local councils are having difficulty with this issue. I suspect it will be the focus of our next stage of research to have a look at how councils can handle that issue and those legal implications, but that is emerging and happening at the moment.

**Ms MARINO**—It is. Many of your councils would have a number of individual property boundary variations as to whether it is right line, riparian or other. Am I correct in assuming there would be a multitude across the councils of various property lines, so that makes that task even more difficult?

**Mr Stokes**—Could you explain that?

**Ms MARINO**—With certain properties you are buying to the edge of the water. In some instances that is a right line property; in others it can be riparian, which is to the middle, if it is a river, of that water. There is a whole raft of complicated issues in relation to the title, the rights and the opportunities that go with that, but also then the liability.

**Mr Stokes**—This once again goes to the heart of the matter of consistency and coordination. Just recently I came across a document published by the Intergovernmental Committee on Survey and Mapping. I do not know whether you are aware of this organisation. It is senior representatives of the New Zealand and Australian state and territory governments. What I was looking for was a definition of where the coastline is. The definition according to this body varies once again on a state basis. The coastline is not defined in certain jurisdictions. In South Australia the Commonwealth does not define it. In Tasmania it does not define it. In Western Australia it is assumed to be a line on a map, wherever that line is. In the Northern Territory it is the highest astro tide mark and in Queensland it is the high water mark. Once again, that might be something that could be looked at in the review of the institutional arrangements to see if we can get some consistency around that. I think many of those lines and planning boundaries and so on that you are referring to would have a similar lack of consistency.

**Ms MARINO**—Given the issues that you have raised about your councils with their funding issues and pressures on them, where would your particular group of 60-odd councils see the funding coming from to develop and implement coastal zone management-type processes?

**Mr Stokes**—They fund quite a number of these requirements at the moment themselves. It is largely, at this stage, state and local government responsibility in terms of coastal planning and management. I am trying to think of a direct Commonwealth contribution.

**CHAIR**—The adaptation program is where councils get involved.

**Mr Stokes**—Yes, that is right, and climate change vulnerability assessments through the Department of Climate Change. I think those costs would be spread across the three levels of government and shared between them.

**Ms MARINO**—Thank you.

**Ms LIVERMORE**—We have already talked a bit about one of your recommendations, the idea of a coordinated national approach, with the Commonwealth playing the role of setting targets and coordinating policy processes. In your experience are there some best practice examples that we would look at that are already operating in Australia? Are there particular states that are doing coastal management well and bringing climate change impacts into their thinking on coastal management?

**Mr Stokes**—The one I would point to is the Victorian Coastal Strategy. I am sure others have referred to this, but this has been developed by the Department of Sustainability and Environment and the Victorian Coastal Council. I know that they have drawn on quite a bit of our research in terms of putting the current coastal strategy in place, which was released in early December last year. One of the changes, as a result of that coastal strategy, was to increase projected sea level rise from 0.6 metre up to 0.8 metre by 2100.

What works, as far as that coastal strategy is concerned, is that it is an integrated strategy. It looks at social impacts as well as environmental impacts. One of the overriding objectives of the coastal strategy in previous iterations has been restriction of further development to within existing settlement boundaries. I think that is a very good principle where possible. Establish boundaries where settlement can occur and maybe move towards an increased density or allow increased densities within those existing settlement boundaries, because this helps to protect the areas of natural coastline in between the settlements. I see this as being effective in the long term.

**Ms LIVERMORE**—On the other side of the ledger within their state plan, does the Victorian government then provide for where greater growth can happen within the state?

**Mr Stokes**—Yes, they do. I know that with the Melbourne metropolitan area, which dates back to Tom Uren and the Department of Urban and Regional Development a number of years ago, which was when Commonwealth government did have a particular role to play in terms of urban planning—the work that the Commonwealth carried out with the state at that time resulted in the identification of growth wedges around the metropolitan area. I think it is worth while going back and revisiting some of that work in terms of looking at what the Commonwealth's involvement was at that time.

I think it is important that areas which may be subject to growth are carefully selected taking into account all of the criteria that need to be established, and I think that is a role that state government can play working with councils within a region to define where those areas are. Just to make a point that I made earlier, it is much better to concentrate development within defined areas than just see it spread inexorably along the coast.

**Ms LIVERMORE**—I would like to go back to the resident population versus the visitor population. Are there councils that have a different rating system on holiday houses versus shire residents? Do they actually pay a premium to cover costs?

**Mr Stokes**—I understand that in Queensland there are. Some of the councils that helped to form the Whitsunday Regional Council area did have a rate differential. The Sunshine Coast Regional Council is considering that at the moment. It is not common, but I know that it is one option that is very seriously being looked at and it has been used in a couple of areas.

**Ms LIVERMORE**—Are there any councils that you are aware of that, in setting their rates, are up front about saying, 'There is an amenity associated with living here in this coastal community and we're going to charge higher rates to do that coastal protection and additional activities that you would not have if you were living in suburbia'? Is anyone up front about that?

**Mr Stokes**—No. I am not aware of councils adopting that.

**CHAIR**—Some have an environmental levy.

**Mr Stokes**—Yes, that is true; some of them do.

**Ms LIVERMORE**—They do not explicitly place a value on what the shire offers?

**Mr Stokes**—No. The parallel I am thinking of is the Surf Coast in Victoria, where there is a premium placed on some commercial properties to cover local tourism expenditure and so on, but that is not quite the same thing. I am sorry that I cannot help you.

**Dr WASHER**—Certainly in the Western Australian situation the Valuer-General, which is a state government office, revalues property in the coastal areas very highly and then the city or local governments will put their rating on that valuation. And let me tell you that is hiked up.

**Ms LIVERMORE**—It happens indirectly.

**Dr WASHER**—Yes.

**Mr Stokes**—Generally, it would be picked up in the general rate within the city based on those valuations.

**CHAIR**—It is an interesting concept to have some kind of quasi-hypothecated tax where ratepayers understand that X-per cent of your rates are going to go for coastal protection, looking after the lake or whatever it might be. We have the local government department coming in Canberra, so we might think a bit more about that. The problem is that even in the submissions that we have received we have talked about a variety of issues but there are consequences and impact of development on natural habitat and habitat loss. I think it is because everything else has a monetary or an economic value attached to it. Environmental issues can float under the radar because they are not seen as mainstream economic values.

**Mr Stokes**—I suppose the principle that I would see in that circumstance is that if the community values an asset then the community really should be the source of funding to support it, and not necessarily the local community. If we are talking about an asset on the coast, it is not just an asset for the local residents; it is an asset for all the people who visit there. The Twelve Apostles in Victoria are an asset to the local community but they are also an asset to international visitors and tourists from other states who all have a stake in maintaining them for the future.

**Ms LIVERMORE**—That is the rationale behind the reef tax. Visitors to the reef pay a levy. As far as I know, it is hypothecated. It is dedicated towards protection of the reef.

**Mr Stokes**—Yes.

**Ms LIVERMORE**—The example is there.

**CHAIR**—Did anything new come out of the recent conference at Mandurah that we should be taking on board? I know it is a long time after the written submission.

**Mr Stokes**—I think the legal liability issue is one that is growing in importance.

**Ms MARINO**—I can understand that.

**Mr Stokes**—We are going to hear a lot more about that in the next year or so. In many respects, councils are at a loss as to how to respond at the moment. What we are seeing is developments being approved right now that, if some of the projections coming out of the IPCC are proved correct, will be placed at risk in the future. Minister Wong has estimated that there could ultimately be something like 700,000 coastal properties around Australia that could be at risk, but there are still properties being approved today which perhaps it would be prudent not to.

**CHAIR**—We have spent a bit of time on these issues over the last day or so. You would be aware of the new draft sea level rise policy in his state and the fact that it does not come with any regulation or statutory support, which is causing some concern, and the 3A provisions continue to cause anxieties where the call-up provision at times, we are told, has had no reference to what the local government's instrumentality policies are in relation to coastal development. It is a source of difficulty. The other thing that we are also finding is that some of the councils that have done their own digital elevation modelling are loath to make that public because of the potential legal consequences that might arise from that. We were saying yesterday that it could be a double-edged sword if they have got that information, are sitting on it and approving developments.

**Mr Stokes**—Yes, they are still liable.

**Ms MARINO**—Of your member councils, how many have issues with the state government overriding their local planning processes and where do they see the liability in that instance?

**Mr Stokes**—That is a good question. You are in the right state to be asking the question. That is a major issue because, as you would be aware, a couple of years ago here in New South Wales the planning minister introduced a new provision whereby significant developments over a certain value would be called in along the coast, which would take away from the local council and the local community their ability to play a role in that process. That is a concern. As far as I am aware, it does not happen to that extent in other states.

It is a question of working with some degree of certainty. That is an issue. What we find at the moment is that an increasing number of local councils are making planning decisions in a state of great uncertainty about, say, the future impact of climate change and also in terms of a lack of clearly defined coastal policy either by the state or anyone else. It is a difficult position for a local government to—

**Ms MARINO**—They are at the coalface.

**Mr Stokes**—They are. They are making decisions today based on information currently available to them that is not necessarily up to date. Sea level rise is only one factor.

**Ms LIVERMORE**—You are saying that councils have a not very simple choice at the moment between approving development applications and making sure that they have all the information to make a strong decision, or rejecting development applications. As to a middle ground, do councils have the ability to approve a development but subject to all sorts of conditions? Byron Bay council yesterday was talking about certain areas of their shire where,

yes, you can build there but on the proviso that the developer knows that if certain points are reached in the future they will have to relocate.

**Mr Stokes**—Withdraw.

**Ms LIVERMORE**—Or just pull back or build further back on a block. Is there not more of a spectrum between those two choices that councils can operate within?

**Mr Stokes**—There really is not at the moment. The idea of a sunset clause on a development has been proposed. It was proposed in Victoria that coastal developments in potentially vulnerable areas could be issued with a development approval on the basis that it would have to be renewed in 20 years time. That is being proposed, but it has not been adopted, to the best of my knowledge. It is one way of addressing that issue. Of course, the other factor that is going to impact on these developments in the future is insurance. The insurance industry are the risk managers.

**Ms MARINO**—Within reason.

**Mr Stokes**—They are the ones with the most experience of that risk management. In terms of withdrawing insurance cover at some time for properties considered at risk, we have seen that happen in the state of Florida in the US, where private insurance was withdrawn from around 800,000 houses going back two or three years.

**CHAIR**—Where was that?

**Mr Stokes**—In Florida in the US. Some 800,000 coastal properties that were affected. They had their insurance withdrawn, and the state government was put in a position where it had to develop some sort of alternative insurance plan, but it was very basic and expensive. I think inevitably we are going to see major changes in the extent to which the insurance industry is prepared to cover these properties in the future.

**Ms LIVERMORE**—At the moment we are in this sort of grey area. Is it a bit of a chicken and egg situation where, if the developer can go to the insurance company with their development application approved, the insurance company will say, ‘The council said it is okay, so it must be okay’?

**Mr Stokes**—I think the insurance sector is going to make up its own mind.

**CHAIR**—They were due to come before us yesterday but because of the bushfire situation they will come a bit later.

**Dr WASHER**—Just out of interest’s sake, near Mandurah the insurance coverage for a lot of houses there where there has been recurrent wind damage has increased dramatically. The insurance industry is playing a role already.

**CHAIR**—On the issue of insurance, when I read this again last night I thought about Lake Illawarra, where I am. It states:

Those in temporary housing, like caravans and manufactured homes, are at particular risk in the event of a major natural disaster. This housing form an important source of housing for low income Australians and retirees, particularly along the coast, without proper insurance or ownership of land.

Of course, in those manufactured home villages they do not own the land. It continues:

There is a high likelihood that tenants will face long-term displacement in the event of a disaster.

**Mr Stokes**—That is one of the findings that has emerged from our third stage of research, which was undertaken by Professor Gurrán and her team. Their finding was that low income residents tended to be at greater risk from the effects of climate change for those very reasons. They do not have the flexibility to be able to reinforce the properties that they are living in, or do not have the means, or they are living in mobile homes or caravans. They have limited capacity to make sure the dwelling is fortified to withstand flood and other severe weather events, so they are at risk. As I mentioned earlier, there is a high proportion of low income families living in these areas.

**CHAIR**—Do you know whether any specific mapping has been done of that specifically? Can we identify areas that are particularly vulnerable on the socioeconomic index?

**Mr Stokes**—Professor Gurrán's research has identified some areas. You mentioned Lake Illawarra.

**CHAIR**—We went to the central coast, where they had that big flooding incident. I am told Lake Macquarie is very vulnerable as well.

**Mr Stokes**—There are parts of northern New South Wales that are particularly subject to flooding.

**CHAIR**—We would like you to take that on notice and also any further details of the mapping of that kind of level of disadvantage correlated with climate change impacts.

**Mr Stokes**—Yes.

**Mr ZAPPIA**—I noticed from the list of the members of your organisation there are many coastal councils that are not members.

**Mr Stokes**—Yes.

**Mr ZAPPIA**—I also noticed that none of the state local government associations have representation on your organisation either. Have they been approached to be represented?

**Mr Stokes**—Our organisation is made up of coastal councils, individual local government authorities. We have a reasonably good working relationship with a number of the state associations and also with ALGA, but they are not individual local government authorities.

**Mr ZAPPIA**—I understand that. My point is that, given there are many councils that are not represented, ALGA and other associations could have been the voices for those councils. Indirectly, they could have been represented through their state association.

**Mr Stokes**—Yes. As I said, we work closely with the state associations. Two weeks ago I was addressing a conference for the Local Government Association of Queensland held in Townsville. We do distribute our information even to councils that are not our members, because these issues are common to pretty well all coastal areas, and climate change issues obviously also affect metropolitan coastal areas as well. We were specifically formed as an organisation to represent non-metropolitan coastal councils. Yes, there are some who are not members, but more than half of them are.

**Mr ZAPPIA**—It is not for me to debate that, but from my observations I certainly would not share that comment in respect of my state.

**Mr Stokes**—If we look at it in terms of population, the population of non-metro coastal areas is about 6.25 million. The total population of the LGAs that we have is just over four million. It is about two-thirds of that non-metro coastal population. What state are you from?

**Mr ZAPPIA**—South Australia.

**Mr Stokes**—We do not have a high membership in South Australia.

**Mr ZAPPIA**—Thank you.

**CHAIR**—You have raised the issue of agricultural land in your submission and we have not spoken much about that. I know even in my area the last bits of agricultural land are prize sites for potential future development. Can you expand on that? Is that a common issue being raised by your member councils?

**Mr Stokes**—It is a common issue. It is really about the future use of that productive land and losing a resource that is a particularly value resource. If we look at the history of a lot of these coastal areas, they were originally generated by traditional industries. It was either for farming, fishing or timber getting. Those industries are not as important to local economies as they once were, but that is where those local communities were founded, normally in association with one of those industries. What happens with a dairy farmer on the south coast of New South Wales, for example, who has 500 hectares? I can think of one who has two kilometres of coastline as a boundary. If dairying is no longer a viable option to him, then his options are pretty restricted in terms of what he can do with that land. The most valuable return he could get on that land would be selling it to a developer. That does a couple of things. It takes productive rural land out of the system. At what stage would that land become important in terms of meeting the needs for local food production? If we got to the stage where the cost of fuel and transporting fuel reached a point where it was no longer viable to import oranges from Argentina or whatever, that productive rural land in the coastal hinterland would become increasingly important for food production purposes.

**Ms MARINO**—How many of the councils that you represent have carried out soil analysis along the lines that you are talking about for land use planning within their shire to look at what

is the best productive or other capacity—say, where is the best place to build your residential areas, given the soil types and its actual productive capacity? I know that brings about a whole raft of planning, restriction of use and trade practices issues. However, how many of your councils would have done that type of basic soil analysis in a land use planning context? I know Busselton and a couple of others have done this.

**Mr Stokes**—I could not tell you how many have done that. The issue is that there are a whole lot of values attached to rural land. There is also the scenic value apart from the productive value.

**Ms MARINO**—There is the cultural value.

**Mr Stokes**—Exactly.

**Ms MARINO**—And the tourism value with the tourists that come to see the paddocks and the open spaces—all of that.

**Mr Stokes**—Yes, that is right; that is part of the experience.

**Ms MARINO**—I understand that.

**Mr Stokes**—It is important from each of those perspectives.

**Ms MARINO**—In certain parts of my electorate they have looked at the fact that a diversity of small different activities is more attractive to tourism than rows and rows of the same type of productive capacity. There are some shared and conflicting issues in there as well, but there is a whole raft of issues in there.

**Mr Stokes**—Yes. That rural land, generally in the hinterland, is an important part of the environment within those areas.

**Ms MARINO**—It is critical.

**Mr Stokes**—As I say, there is a great temptation there that, if it is no longer possible to run a viable commercial enterprise on that land, to make it available for other purposes. How do you compensate the farmer who is placed in that position? The cane lands in Queensland are a very good example. In southern Queensland we saw the mills close and the viability of that local cane industry not being there anymore. I know the Sunshine Coast councils were under extreme pressure to release that land for residential development. In the end, the state government, through the southeast regional plan, drew a line on the map saying, ‘If you’re on the east side of this line you can’t release that land for development purposes. If you’re on the west side you can.’

**Ms MARINO**—I understand in parts of Europe they allow subdivision into small lots, although you cannot build a dwelling or other. It is basically acknowledging that the land has a productive capacity and needs to be retained for that. It is about how you allow that within the changes in productivity and efficiency gains to reflect that. I think there are a number of challenges coming for councils.

**Mr Stokes**—That can reflect the use of property development densities. You can address that issue.

**Ms MARINO**—Thank you.

**CHAIR**—Thank you for attending the hearing today. The secretariat will send you a copy of the transcript for any corrections that need to be made. I would be grateful if you could also forward on to the secretariat any additional material that you have taken on notice and provide this as soon as possible. Thank you very much for your attendance. Keep up the good work and we are looking forward to reading your submission to the infrastructure inquiry on the impact of the global financial crisis on regional Australia.

**Mr Stokes**—Thank you. We really appreciate the opportunity of coming along and taking part.

**Proceedings suspended from 10.08 am to 10.38 am**

**WOODROFFE, Professor Colin David, Private capacity**

**CHAIR**—I welcome Professor Woodroffe to this public hearing. Although the committee does not require you to give evidence under oath, I should advise you that the hearings are legal proceedings of the parliament and warrant the same respect as proceedings of the House itself. In that regard the giving of false or misleading evidence is a serious matter and may be regarded as contempt of parliament. The committee has received your submission and it has been authorised for publication. We would now like to invite you to make a brief opening statement before we proceed to questions and discussion.

**Prof. Woodroffe**—Thank you for the opportunity to appear before the inquiry. As indicated in the submission that I made to the inquiry, I am a coastal geomorphologist, I was a lead author on the coastal systems chapter of the Intergovernmental Panel on Climate Change, the IPCC's Fourth Assessment Report, I have been involved in several assessments of the vulnerability of parts of the Australian coastline, and I am a member of the steering committee for the first pass national mapping of shoreline stability.

In the IPCC Fourth Assessment Report, and specifically in our chapter on coastal systems, we indicated that there were a number of aspects of climate change that pose a threat to the coast. Of the six climate drivers that can have an impact on the coast—sea level rise, temperature rise, carbon dioxide concentration, storm occurrence, wind and wave changes, and changes to rainfall and runoff, sea level rise generally poses the greatest challenge, particularly when associated with extreme events such as storm surges. However, the AR4 report expands on material in the Third Assessment Report, the TAR, in that it recognises some of the impacts that other aspects of climate are having and are likely to have. For example, there is now far greater acceptance across the scientific community of the effects of temperature on coral reefs and the greater incidence of coral bleaching that is a consequence of global warming.

Sea level rise poses particular threats. In my submission I drew attention to the vulnerability of the heavily populated river delta regions of Asia and the low lying atoll nations of the Indian and Pacific Oceans. In Australia we have many shorelines that are directly comparable with these in terms of the coastal land forms, but in most instances there are fewer people who will be so directly impacted because there remain large stretches of the Australian coast that are remote, inaccessible and uninhabited. However, I did make the point that we should certainly not be complacent and that sea level rise will exacerbate existing natural hazards on the coast. The Australian coast deserves particular attention in the national context in relation to climate change because such a large proportion of the Australian population lives along or visits the coast.

I also emphasise that Australian tide gauges indicate that the sea is rising and that the high resolution sea frame tide gauges imply that in many places it is rising at an accelerating rate, with several places in northern and western Australia recording rates that are above the global average. The rate of sea level rise will vary regionally and locally, and I believe that there is a need for a broader national consideration of both the current trends and the projected rates that are adopted at state and local government level.

My geomorphological training and the results of my research on tropical shorelines across the Australian region reinforce the dynamics of coastal land forms and provides a framework within which to view the likely range of natural responses of shorelines to environmental and climate changes. It is a wondrous picture of some of the most inspiring sections of coast anywhere in the world and something that we tried to capture in our latest book, *The Coast of Australia*, which I have co-authored with Professor Andy Short, from whom the inquiry has already heard.

It will be essential to adapt to the consequences of climate change on the coast because the sea will continue to rise even if emissions could be stabilised. Sea level rise will continue into the next century because of the long time scales involved in ocean response to climate drivers. Prudent planning now can minimise future disruption. Geomorphology provides an important context and one that underpins the first pass national mapping of shoreline stability.

I would also add that I am very pleased to be able to speak to this inquiry and I am delighted that the national government is looking at coasts. It is a very important area for the national government to look at. I notice that this inquiry talks of coastal communities. I hope it does not exclude parts of the coast that do not have communities on them. I note the National Framework for Marine Research and Science that was released a week or two ago talks about ‘marine coastal’. I do want to emphasise that the coast is that continuous area between the land and the sea. I am conscious that national reviews have often found it difficult to cover the whole range of jurisdictions and complexities that are part of that coastal zone, but it is very important that we look at the coastal zone and not stop at the high water mark, the low water mark, or any of those sorts of issues that often occur when we are looking at them in inquiries.

**CHAIR**—Thank you very much for being here with us and for your very interesting submission. I would like to explore some issues with you. You state that you are a member of the steering committee on the first pass national mapping assessment team. One of the constant concerns we have, and which you raised in your submission, is the dearth of detailed data about much of the coastline. We understand from the department—and we have spoken to Professor Sharples—that, as laypeople, we need to get a better handle on what this first pass assessment will actually provide. What do we need to do beyond that? Is it true that there are some funding constraints which mean that everything we had expected to come out of the first mapping exercise may not be available? What is happening when councils go off to do their own digital elevation modelling? Is that going to be encompassed? Can you walk us through some of those technical issues in a way that adds a bit of clarity for us? Very importantly, once we have got that, are these tools that can be accessed by people at the local government level that need to be doing some thinking about their future land use regimes?

**Prof. Woodroffe**—I am very pleased to speak on that topic. I have watched with interest and been involved with the Department of Climate Change when it decided how it should assess vulnerability of the coast. In fact, I was one of the authors of the assessment of international techniques, and how people would approach this overseas. The approach that they are adopting is one that was developed in Tasmania by Professor Sharples, as you indicated. In his Tasmania work he considered both the digital elevation models and the nature of the coast in his classification—the Smartline—which involves the form and the fabric of the coast, as he calls it, that is, the landforms and what the landforms are made of. The Smartline is not directly doing the digital elevation model, which I understand has been contracted out to other people who are going to provide a different product. There will be an issue there about whether those two come

together as seamlessly as they would have done with Professor Sharples's own work in Tasmania.

The Smartline mapping will describe a line for the coast and segment it into sections of different characteristics. The characteristics will be useful, say, sand from the rock, low lying sand backed by a dune or low lying sand backed by a cliff, which therefore is not as susceptible to change and stability. That will be a very useful exercise in accumulating data on our coast. I should say that this is not a new mapping exercise. This is merely an exercise of bringing together existing information. It is based on digital information that is already available. There is no direct going out and mapping the coast as there would have been in the Tasmanian study in some instances. That is another level of detail that is possible and would be a very useful ground-truthing for this. Will the information on these coastal types be available? Yes, it will be available through OzCoasts—that is, the web portal that Geoscience Australia manages. I think that is a good indication that it will be available to the people who want to use it—coastal managers, policy makers and so on, who will have access to the line.

As I said, I have been involved in planning meetings and steering the project as it has gone on. The questions that are arising now are: how do we use this and what do we do? It shows what the nature of the coast is. Professor Sharples has talked about a second pass and ultimately a third pass, but it does not consider adding other factors. For instance, it will say nothing about how the coast has behaved in the past, which in many cases is our best guide to what it is going to do in the future. That could be added and that happens to be one of the elements of the American approach. It is a fairly prominent aspect of the way that they map their coasts. In the case of the American coasts there are very clear reasons why the east coast is gradually going through subsidence, experiencing a more rapid sea level rise than most of the world, and has a general trend of the coast receding.

In our coasts here, we get a big storm, it cuts the sand back, the sand moves into the inshore and then over subsequent months and perhaps years that sand comes back onto the beach, so we have a massive cut and recovery pattern that completely dwarfs any long-term trend. We cannot see a long-term trend or, if we can, in some places the coast is built out and in some places it is cut back. They are small values compared with this storm and storm recovery pattern. Something that tries to capture future behaviour on the basis of the past behaviour is going to be relatively ineffective in most of our Australian coastlines.

There are aspects like that which could be incorporated in to build greater usefulness into the mapping that is being done, which is very fundamental, but very important. It gives us our first overview at the national level of the nature of the coast. It is a very easy-to-use method of portraying, because there is the shoreline. There might be some questions about what shoreline and high water marks.

**CHAIR**—Yes. We will not go there.

**Prof. Woodroffe**—It will be a tool that will be accessible and useful, but of course it does not go all the distance to answering all the questions that you might want to answer.

**CHAIR**—Are you aware of the developments with the digital elevation modelling and can that be superimposed onto the Smartline project?

**Prof. Woodroffe**—I am not familiar with all of the developments. There may have been some more recent ones. My understanding, through the Department of Climate Change, about a year ago was that they were going to require high resolution spot satellite imagery and that that resolution would be something that would allow slightly better mapping than Professor Sharples had achieved in Tasmania from a coarser digital elevation model. Again, it will not be down to the level that we can achieve with LiDAR. Probably the best set of data to get elevational information about the coast—and indeed the whole country, including of course our urban areas that have already been mapped in that form—is airborne LiDAR. That is a type of laser mapping.

My understanding is that quite a lot of the Australian coast has been mapped, largely by contractors but also state government and perhaps local government. I am not aware of the full extent of which areas have and have not been mapped. Again, that is an issue where I can draw attention to the American example. The National Oceanic and Atmospheric Administration, NOAA, has taken responsibility not to acquire that data but to put together a database of where that data has been acquired. Aerial photography and LiDAR are fundamental sources of data for the coast and other areas. In America, it is very often the case that one organisation flies part of the coast unaware that another organisation has previously flown it, so NOAA has stepped into a national role to coordinate which areas have and have not been mapped. LiDAR will give a far better digital elevation for the detail that we are really going to need to know about what is going to happen to water levels along the coast, and I understand national remote sensing spot imagery, which I believe the Department of Climate Change was undertaking.

**CHAIR**—What is the latest timeline on the release of the Smartline project? When is that likely to become public?

**Prof. Woodroffe**—I am only a member of the steering committee so I observe the status via the telephone meetings that we have. My understanding is that it is as close to being there as it can be. I think there is a bit of data to be put together for the Northern Territory. The question seems to be when was there a suitable opportunity for the Department of Climate Change to release this. I know they are beginning to talk about what opportunities are available.

**CHAIR**—To the layperson at the local government level, once they access this Smartline through the OzCoasts website, will they be able to detect areas of potential vulnerability? For example, will that mapping exercise confirm the vulnerability of Pittwater Council or other areas? In looking at that project can they say, ‘I think we are not at the stage of extreme vulnerability at the moment’? Can we then move on and focus in on further mapping and data collection for those parts of the coastline that are determined to be at high risk?

**Prof. Woodroffe**—Unfortunately, I do not think it will be quite as simple as that. The mapping will be there, but it will tell you that this section of coastline is sand backed by low lying plains, which is more vulnerable than an area that is sand backed by cliffs or backed by rock. But there is no forward modelling involved in this static view mapping. There was an attempt to use some magic formula to work out how fast the coast is going to retreat. I am sure you have come across the magic formula many times. There is enormous resistance from scientists—less resistance from engineers—to adopt that, because there are so many reasons why we know it does not work. For instance, in my own situation, I have had students study the Wollongong coast. The tide gauge tells us that the sea level has risen by about 10 centimetres

over the last 20, 30 or 40 years, so one would assume that the shoreline should have retreated by the order of a few metres. The shoreline retreated by 10 metres when we had our big storms in July of last year and it has recovered. We are in that area where we really cannot detect the long-term change that we might envisage would happen and in fact many of the areas, largely through good dune management, have shown accretion of the fore dunes over that period. Our Bruun concept is too simplistic a concept in this context. I believe there is still some sort of wish to portray the coastline with this, as in this is how far it is going to retreat, but I have been cautioning against that, as have a number of other researchers.

We are talking perhaps about a zone of uncertainty. We can be more certain that sandy shorelines have greater opportunity to move, but we are not altogether sure that some of them will not, in fact, accrete. If there is a big river supplying sediment and sand moving along the shore, there are areas that are still building up sand and they will still be mapped in the same category. They will be mapped as ones that are unstable. It is a shoreline stability mapping exercise.

**CHAIR**—Is there any prospect of the integration of wave action on this static shoreline and has any modelling been done in that regard?

**Prof. Woodroffe**—Yes, there is and should be. I think I noticed that the CSIRO marine division is already doing trials through some of the wave modelling that they are doing. They have recently released a report on what they believe waves are doing in the long term, but also the factors that are driving those waves. I have not seen the results of the trial, but I know they were going to try to integrate that into the shoreline mapping. That is exactly the sort of way we ought to be heading. Again, I can recognise that we are trying to integrate apples and pears and there is going to be quite a bit of the wave modelling that is doubtlessly very good for telling us about waves, and the shoreline mapping is very good at telling us about the nature of the shoreline, but it is not as simple as ‘big waves on soft shore means X’. We will need to get a better understanding of what actually happens with the shoreline to really integrate those two.

**CHAIR**—One of the major reasons why we are undertaking this project is to give advice, guidance and good data for planners at the local level. What do you see as the main practical import once the Smartline is released, and what should this committee be recommending to the federal government for future data collection and mapping? Where do we go from that basic Smartline project?

**Prof. Woodroffe**—I think the mapping is very important. It is one of the essential things that we need to do—capture baseline data. This is mapping the geomorphology. I think there needs to be more work on the digital terrain model. I hesitate to say ‘digital elevation model’, because we also need to know about the bathymetry. I will come back to the point that I made at the beginning. The really big challenge for the coast is that we need to see the coast as a seamless stretch of terrain. We need to actually know what the morphology is above the high water mark, across the intertidal zone and also in the shallow water areas, because beyond the mapping exercise the next most important is the modelling. There have been various attempts of modelling, such as wave modelling. The physics of waves is well understood and so wave modelling may be very effective in telling us what is happening out in the open ocean, but the more subtle interactions of the bathymetry and the natural nature of the shoreline are still areas where much more work will need to be done in terms of modelling. The way that then impacts

on sediment movement, again, is an area of coastal sediment dynamics that is an active research area, but the models in there are still too premature to give us a good view of what happens. They are very general models, just like the Bruun rule is, so there will be a need to do more modelling.

I suppose a really important issue is monitoring, because we need to be able to say in 10 years time what has really happened and not merely just take a time slice. This is part of the problem with looking back at what has happened in the past. We have aerial photographs. We might have had five times in which aerial photographs have been taken on a particular shore and we say, 'Well, there is a general trend', but we miss the big storm of 1974 that actually had a major impact. Without good monitoring the database ages and so on. There is an important role there in terms of monitoring.

**CHAIR**—We are advised by the Department of Climate Change that the Australian government has purchased a complete coastal coverage of medium resolution data. The DEM data is extracted from stereo pairs of satellite imagery that allow for the three-dimensional modelling of the Earth's surface. The data covers the whole coast and islands greater than 600 square metres. However, they go on to say that in the long term we really do need high resolution data. Do you know of any plans for the Department of Climate Change to release this at the same time as the Smartline project?

**Prof. Woodroffe**—To be honest, I do not know. I have been on study leave for six months. I have only had very brief contact with the Department of Climate Change since I came back. I would say that their plans for release of the Smartline are still evolving, which would be a couple of months away. I do not know about that high resolution imagery. There should be less of an issue about releasing it, because it is simply acquired digital data. But as you say, they do make the point that it is medium resolution. I am not sure what the size on the ground of the pixels of the cells are that we have elevation data for, but some of the subtle variations where really tidal water will penetrate into a low lying area are only going to be captured with LiDAR or a really high resolution survey data. Even a metre squared digital elevation model could miss some of the very small subtle micro topography.

**Dr WASHER**—I wanted to pick your brains on this hard and soft engineering concept. We have seen sea walls, breakwaters and so on built on the Western Australian coast with different consequences, as you would know, and then of course you also mentioned the soft-type engineering where we run up and down the coast grabbing the sand and dropping it back out. All of these things already happen on Western Australian beaches. My impression is that sometimes these sea walls and break walls cause problems, but I would like you to comment on that.

**Prof. Woodroffe**—Yes, indeed. I am sure there are many more qualified engineering people who have appeared before the inquiry, but there is no doubt. That is a point that we make in our book and Professor Short would have made to you when he was here as well. Our Australian coast is one of the most pristine coasts in the world. It is also one of the most spectacular coasts in the world in so many respects. We are very fortunate that, by and large, we have not had to defend it. You can contrast that with the coast of Britain, which I am familiar with, where the seafront is a promenade concrete structure, and in North America where there is a boardwalk and the beaches are replenished on a regular basis simply to keep the sand there because it gets washed away over time. Those are the two options. The hard option is the option of actually

protecting the coast. I guess there are places near Sydney Airport where clearly there is infrastructure that has to be protected, but one would not want to see the groins and breakwaters that are a feature of British beaches becoming a feature of Australian beaches. We do not need that to happen. With most beaches we have been fortunate not to have built on the fore dunes. There are a couple of exceptions. I am sure that Professor Short would have spoken about Narrabeen and areas in Adelaide where it is already the case that there is a need either for sand to be added to the beach to be replenished or for some sort of protection. By and large we need to recognise that.

A good example of protection is Tweed Heads, where the sand from New South Wales was moving north into Queensland at an average of about 500,000 cubic metres of sand every year. By putting in the training walls at the mouth of the Tweed, it stopped that movement of sand and the Gold Coast beaches began to lose sand, because those natural processes that continued to take the sand were not coming. Now we have this enormous infrastructure of pumping works up there that pump a set amount of sand. Of course, nature does not work on 500,000 cubic metres a year exactly, so in some years you would pump the 500,000 cubic metres and the beaches have too much sand, and other times with a big storm it could mean you actually lose the sand. That is the sort of coastal protection and engineering that goes on around the world. I think we are very fortunate in Australia not to have had to go very far down that route. We do see in those examples, such as Narrabeen and the beaches of Adelaide, the sorts of issues for settlement for urbanisation and the maintenance issues that suddenly arise. I think we must avoid that as far as we can in Australia. We are very fortunate that we can. Most of our settlements are built well enough back from the high water mark at this stage, so that is not a major feature of the Australian coastline in an international context.

**Ms MARINO**—I would like to take this one step further from a Western Australian perspective. Are there any areas where you can see the sand shift in Western Australia being an issue? Part of my electorate encompasses the Port Geographe area, where there have been some real challenges with sea grass and so on. From your modelling, are there any areas of vulnerability that you are aware of that will need that type of potential soft engineering assistance along that coastline?

**Prof. Woodroffe**—I am not as familiar with those areas as Professor Short. I do know we describe a couple of them in this book, *The Coast of Australia*. I believe Professor Short may have addressed the inquiry on that issue. I cannot address the specific ones. There are a couple of places in Western Australia and there is a very good example in the book. There are two case studies. One talks about where a bypassing system was adopted into some structure that was built on the coast.

**Ms MARINO**—That would be the Peel-Harvey Inlet with the cut.

**Prof. Woodroffe**—Again, that is an area where we are interfering with nature. We have learnt our lesson and there are many lessons to learn. I believe that is being reasonably sustainably managed in this case, but I am not familiar enough with your electorate or your area to answer those questions specifically.

**Ms MARINO**—Thank you.

**Mr ZAPPIA**—Thank you for your presentation. I was interested in your earlier comments in respect of the work you have already done on the IPCC and the impacts of rising sea levels in other parts of the world. Given that there are many cities in other parts of the world that, on my understanding, are already at sea level or below sea level and have survived successfully for tens if not hundreds of years, is it really such a risk to allow development on our coastlines, and is it the case that, rather than restructuring our planning laws, we should simply be preparing for how we can adapt to the rising sea levels as they continue to rise?

**Prof. Woodroffe**—Yes. That is a very interesting question and I am still learning about these things. One of the learning experiences I had just last year was going to a conference in Venice. You will hear from Professor Thom this afternoon, who described it as the Venice effect. The issue that we most need to be concerned about for our coastal settlements is perhaps not erosion on the coast that we might think of but the subtle rising of water levels through the city and so on. Venice was a very interesting experience for me because they told me, ‘If you come in tomorrow you will need to get in here before 9 o’clock because at 11 o’clock the water will be up here and the walkways will be out. You will not be able to get here.’ My feeling was that here is a community that has adapted to climate change. The week after I was in Venice they had the biggest storm surge in 30 years. The city was closed and the mayor was saying, ‘Don’t come to the city if you can possibly avoid it. We have been taxed to the limit.’ In my mind, this indicates that we need to not only think in the physical sense of there being a non-linear response. An example of that is that as water rises in our estuaries eventually it will overtop the subtle levees. It will not just be another few centimetres that we need to think about, it will be a major threshold that we pass. That brought home to me that there are very many thresholds that we know nothing about, these non-linear thresholds in terms of communities and people. The city of Venice is appearing to manage and adapting very well, but in fact you do get an extra storm. These events, of course, are still within the magnitude of what is happening today. We will not have the hurricane that hits the city such that we say, ‘That was the consequence of climate change.’ If Cyclone Tracy occurred tomorrow, Darwin is many times more vulnerable. It might be exactly the same magnitude event, which was not a particularly high magnitude event for Darwin.

I think there are some really quite frightening thresholds when you look at what happened in New Orleans with Katrina. People knew that the population would not leave. There were many people who did not have access to a car, people had pets and so on. There have been questionnaires run and it was realised that there would not be a mass evacuation. I am not sure whether we have gone to that level of saying, ‘We’ll evacuate people’ and whether that will really take place. There were some shocking revelations in terms of the Victorian fires in that respect. We need prudent planning now to avoid those sorts of disasters. I recognise that you can insure against them and there are other sorts of attitudes.

There is no question that the sea is rising. There are questions about how fast. It is clearly prudent to plan not to build in those areas that are vulnerable. It is very sad to see building in the storm surge zone in Darwin. I am quite surprised. Surely the devastation of Christmas Day 1974 in Darwin should have given us a lesson. It did of course; building codes were improved and so on. But it is my understanding there is now building allowed in the storm surge zone, and that does not seem to be the sort of thing that you would want to do given the rates of sea level rise, which are quite frighteningly fast in Darwin as it happens.

**Mr ZAPPIA**—You may or may not be able to answer this. Are other countries where perhaps they do not have as much choice about where they do their development similarly looking at what they will do as a result of possible sea level rise, or is this an area worldwide that has not been properly addressed? Were you able to form any conclusion from the work of the IPCC?

**Prof. Woodroffe**—There has been work and consideration, but not as much as you might expect. I would say, to a large extent, that it reflects something of a change of view globally with the release of the Fourth Assessment Report. Certainly in the UK, where I just spent a couple of months, there is already managed realignment. There are areas where reclaimed land is being allowed to revert to tidal wetlands. There are obviously big planning issues around the Thames and what happens in London. There are real planning and policy issues taking place.

I am not so sure that I can come up with clear examples of actual relocation and so on that have happened around the world. Of course, it depends on the nation you are talking about. If you think of Bangladesh, which is particularly vulnerable, there is really so little adaptive capacity in that country that it is by no means their first priority.

**Mr ZAPPIA**—Thank you.

**Ms LIVERMORE**—In your submission you talk about the National Cooperative Approach to Integrated Coastal Zone Management Framework and Implementation Plan. Can you go into more detail about the progress that has been made, and also tell us whether that is what we should be persisting with in terms of a governance model that allows the Commonwealth to drive some of the policy responses to planning and particularly adaptation to climate change in the coastal zone?

**Prof. Woodroffe**—I thought the framework was nicely laid out. The logic of looking at what happens internationally, building up our national capacity, building up models and so on relative to the Australian coast was a very logical way in which to progress. I am not really in the best position to indicate to what extent it has or has not been taken up. Having worked with the Department of Climate Change, my feeling is that we are still in the early stages of that national response. My lack of familiarity with the national levels has been indicated by my complete surprise at discovering the National Framework for Marine Science and Research and to discover that it talks about ‘marine coast’, which I think means that it stops at the high water mark. The nice thing about that committee that put together the national guidelines was that it recognised that we need to be talking right across the coast and across jurisdiction, recognising that there is a national need for consistency in terms of how we interpret IPCC results, CSIRO modelling results, and actually monitoring tide results. These things need to be thought about at the national level and not merely at the state or local government level. I am afraid that I cannot say anymore on the details of frameworks and guidelines.

**CHAIR**—I thank Professor Woodroffe for attending our hearing today. The secretariat will send you a copy of the transcript for any corrections that need to be made and we would be grateful if you could also send the secretariat any additional material as soon as possible that you have undertaken to provide to us. With that, I thank you very much for your attendance and look forward to continued contact with you as the inquiry progresses and as we all await the release of the Smartline data.

**Prof. Woodroffe**—Thank you.

[11.16 am]

**GHANEM, Mr Robert, Acting Policy Director, Australian Network of Environmental Defenders Offices**

**SMITH, Mr Jeff, Director, Australian Network of Environmental Defenders Offices**

**CHAIR**—I welcome representatives of the Australian Network of Environmental Defenders Offices to our public hearing. Although the committee does not require you to give evidence under oath, I should advise you that the hearings are legal proceedings of the parliament and warrant the same respect as proceedings of the House itself. In that regard, the giving of false or misleading evidence is a serious matter and may be regarded as contempt of parliament. The committee has received your submission and it has been authorised for publication. We would now like to invite you to make a brief opening statement, if you so wish, before we proceed to questions and discussion.

**Mr Ghanem**—The Australian Network of Environmental Defenders Offices welcomes the opportunity to address the House of Representatives Climate Change, Water, Environment and the Arts Committee regarding the inquiry into climate change and environmental impacts on Australia's coastal areas. ANEDO consists of nine community legal centres specialising in environmental law, located in each state and territory of Australia.

As an opening statement I would like to briefly summarise our key recommendations. In relation to term of reference 1, we submit that one of the major problems with existing policies and programs is that not all states have a key coastal protection act, with many states regulating coastal impacts through planning and resource legislation. Furthermore, much of the detail regarding coastal protection is delegated to policies, manuals and guidelines, which are subordinate to legislation and often poorly implemented due to limited resources and lack of appropriate data.

In relation to term of reference 2, relating to mechanisms to promote the sustainable use of coastal resources, we submit that there needs to be a greater implementation of planning and development controls, including no-go areas for development in the most sensitive coastal areas, comprehensive environmental impact assessment mechanisms, and public participation for development approval and strategic regional planning.

In relation to term of reference 3, we recommend a hierarchy of adaptation options to address the projected impacts of climate change in the coastal zone, which include sea level rise, increased coastal flooding and storm surges, increased coastline erosion, inundation of coastal wetlands and lowlands, and potential health impacts. We submit that planned retreat should be the primary adaptation action, as it is most in line with the principles of ecologically sustainable development. However, in those areas where planned retreat is not a viable option, ANEDO submits that focus should be placed on the implementation of planning controls, resilience building measures, early warning systems and emergency response plans. ANEDO does not recommend the use of hard engineering options to address the impacts of sea level rise as they do not provide long-term solutions and they interfere with natural systems.

In relation to term of reference 4, we submit that a crucial challenge for coastal communities relates to how best to improve coordination and consistency of the mechanisms needed to adapt to the impacts of climate change. Whilst each local area and state will need a tailored solution, there is an urgent need for a federal framework to provide guidance and funding on a national level.

Finally, in relation to term of reference 5, ANEDO submits that as a result of the current governance and institutional arrangements in each state and territory, which have resulted in a patchwork management effect, the Commonwealth must develop a federal coastal framework coordinated through a COAG agreement and/or legislation. Such a framework would improve cohesion and consistency across jurisdictions.

**CHAIR**—I would like to express our appreciation to your organisation at the national level for the fine quality of thought and work that has gone into an excellent submission. It is of great assistance to have the summary of the different acts and statutes applying in the various states to better inform the committee about what you refer to as the patchwork of overlapping jurisdictional issues that bedevil this whole area. I will start by asking you about the federal level. You probably submitted to the review of the EPBC Act. Apart from people saying, ‘We need a consistent framework and we need national leadership’, what in specific terms do you think the committee might look at? Was there anything that came out of the inquiry into the EPBC Act or in your submissions where you think we might be able to move beyond the kind of conceptual framework into actually beefing up the response at the federal level? Are there opportunities through amendment or consideration of changes in the way the EPBC Act operates?

**Mr Smith**—There are opportunities under the EPBC Act. The act itself is incredibly complex. Not only did we give evidence to the Senate inquiry; we are also giving evidence to the independent panel that has been set up. Our thinking has literally moved on in that time, because it is a very intricate process.

The problem with the EPBC Act is that, for the Commonwealth to have that gatekeeper role, you need one of the triggers. The triggers for the subject matter of today are not always obvious. For example, one of those triggers may well be impact on threatened species and that would be under the convention on biological diversity. Given the very limited gateway around those triggers you have to find a way through, and that is only at the development stage once there is a proposal afoot. The other avenue for the EPBC Act would be further up the chain. That is obviously what you want to do with planning. You want to make decisions well, make them early, filter out all the bad decisions as much as possible, and then you have your checks and balances further down the track.

The only real provision under the EPBC Act for that more strategic approach seems to be around strategic assessments. Again, that is something that we are looking at closely, about how you might bolster that regime around strategic assessments. The minister can approve strategic assessments for policies, plans and programs and conceivably that could be in some sense for the coast or parts of the coast.

**CHAIR**—I understand that is happening now in the Kimberly region. Is that right?

**Mr Smith**—Indeed, yes. That is probably the first example in that way. A lot of them have been around fisheries, but that is a potentially good use of that. We had some concerns about the strategic assessment approach in practice. In terms of the theory of it, that is a good way to go. It is better to go to that broader strategic level and make sure you have got a rigorous enough process around doing that.

That is the only way you can really get through the EPBC Act at the strategic planning stage, because as we all know planning and development has long been the purview of the states, except for those matters of national significance. You could do it that way. Our suggestion is that the better approach would be consistent with this idea of a federal framework where you have some kind of national coastal protection legislation and/or policies or go through COAG. It needs to be something that binds it all together and achieves the sorts of things that we want to achieve and really probably no-one is going to argue about—consistency, coherence, clear guidance and so on around Australia.

**CHAIR**—Just picking up on your view about national coastal protection legislation, your submission rightly points to the fact:

... the changes experienced by different coastal communities will 'not be uniform across the coastal zone', and as such the development of a rigid formula for coastal zone management throughout Australia would undoubtedly prove to be ineffective. However, it is essential that a number of key federal themes that are likely to impact upon coastal communities as a result of climate change and increased coastal population, are identified. This would assist local governing bodies in recognising where they need to focus resources to develop threat abatement and adaptation planning mechanisms.

In looking at the state summary and in our discussions people keep talking about the need for national frameworks and national consistency, but when you look at what is happening at the state level there is a different set of benchmarks just on the issue of sea level rise that vary from state to state. We also appreciate that the impacts are going to vary depending on particular vulnerabilities of different areas and one-size-fits-all does not fit the bill. Can you give me a clearer indication about the sorts of key federal themes that you think some form of national legislation might encompass? As you know, we have the constitutional constraint about the role of the federal government and we have the state and local planning people being the main people responsible for land use and what some might claim to be land misuse in certain situations. How do we interface when, at the federal level, we do not have that level of authority about those major decisions?

**Mr Smith**—Clearly, for the Commonwealth to act they need to have the power to act. For coastal protection around adaptation you could use the Framework Convention on Climate Change. It contemplates the formulation of plans, programs and laws to deal with adaptation. Also, more indirectly you could use the convention on biological diversity. I am not a constitutional expert, but I would have thought that is one way to power.

Really the essence of your question is: what is it going to look like? We have said throughout our submission that one size does not fit all, which is right. I hope this is not too general, but from a lawyer's point of view what you want to do is put together framework legislation with the detail concertinaing down as appropriate. That would set out who was responsible for what and what the rules were at the strategic planning stage and also at the development control stage. The details would be embedded further down in regulations and perhaps even guidelines; whatever

instrument it was, as long as those things were enforceable. You could use those more flexible instruments such as guidelines to set your lines in the sand, so to speak, as appropriate. What is an appropriate line for Western Australia is not going to be the same for New South Wales. At least you have that overarching legislation that holds the whole scheme together in that you do know what the general rules are in each of those areas.

**Mr Ghanem**—In New South Wales there is the possibility for preparation of coastal zone management plans under the Coastal Protection Act. However, although they are very good mechanisms, they are currently discretionary and not all local councils have made them, even though the Department of Environment and Climate Change provides funding on a fifty-fifty basis for the making of those plans. A federal act might also include a requirement for localised coastal zone management plans, or something similar, that actually mandate particular actions or at least get the councils thinking about these issues and being proactive about potential impacts.

**CHAIR**—How do we deal with the current draft legislation on sea level rise here in this state, which has no compulsion attached to it in terms of its implementation at the local government level and that is not backed up by legislation or regulation?

**Mr Smith**—The draft sea level rise policy statement?

**CHAIR**—I am just using that as an example. When the states are not mandating implementation or something as important as that, does the federal government then override and tell the states, ‘You have got to do X, Y and Z’? How do you see it conceptually?

**Mr Smith**—I think that is right. We have just come through this process with one of our cases—the case of Walker, which went before the Land and Environment Court, then to the Court of Appeal and to a hearing for special leave of the High Court. That whole case was about, ‘Let’s think about climate change. Let’s make it a consideration of decision makers that you need to advert to. That is around adaptation. It is fairly uncontroversial. It does not mandate what the outcome is. It just says, ‘We need to start considering this kind of stuff’, and then you have the whole question around how you deal with that at a mitigation level as well. At the very least you want that to be a mandatory consideration to take into account. Further up the chain you might want to build into that framework that the development should not be approved unless the particular decision maker is satisfied that there is going to be no adverse impacts. You can have those rules, if you like, under the federal framework, but the way that you apply those rules and where the lines are drawn in the sand under this sea level policy statement may differ from region to region. That is how you would deal with it. That is what we mean by the framework. You set out those rules.

The real thing that seems to be missing here, which is not quite our constituency but we deal with them all the time, is that the councils are crying out for leadership. They want to know what to do partly about avoiding any potential liability, but partly about doing the best job that they can do. I have read this document a couple of times and I do not really understand it. That is my preliminary view at this stage. I do not think that this document goes too far to solving the problems that councils and decision makers face. Others may have differing views. To draw all those things together, this explicitly says, ‘We’re not mandating this. You don’t have to take it into account. It is just the guidelines.’ It does not seem like a huge advance to us in terms of dealing with the uncertainty that people are facing.

**CHAIR**—Could you argue a case that unless the federal government does intervene with some kind of framework legislation there will be an exponential rise in litigation around these issues? Are you seeing that emerging as a trend?

**Mr Smith**—The issue of liability is a complex one. I can only speak with any authority from a New South Wales perspective. As a result of the most recent planning reforms there is a plethora of decision makers. It can be the council for your standard developments. It can be the minister or a delegated authority from the minister, such as the Planning Assessment Commission, the Joint Regional Planning Policies, or the Land and Environment Court—all of those bodies are making decisions about whether something should go ahead or not. Really, that is what we are talking about here. We are not talking about the planning stage, because the law has said that liability does not attach at that point. It attaches when you make particular decisions about whether a proposed development should or should not go ahead. That is the essence of it. All those bodies are making decisions and all different legal regimes of liability apply to them. There are particular immunities that apply to the councils under the Local Government Act, but there are qualifications around that. You have to be acting in good faith and so on. Those provisions do not apply to other acts. How does that work?

That is just setting out the potential. You asked specifically: are we seeing a trend towards that? I do not know whether we are, but I do not think it is too far away. If we are saying that with certain sea level rises these things are or are not locked in, then what we are seeing in the press is a number of communities being mentioned time and time again—Narrabeen is one example—that will be adversely affected by climate change. That is not the sort of news you want if you are a property owner in Narrabeen. That would damage your property value from today, once there is a critical mass around it. It is like having a contaminated site in the future. You do not have any damage now, but if those projections of climate change are locked in, you have a very serious diminution of your property value down the track, which in a sense, operates from now. If people are doing their homework they are going to say, ‘There’s a liability. It might not be here now, but it’s further down the track.’

**CHAIR**—This whole issue of liability came very much to the fore in our discussions yesterday. I think it is a question that is very worrying for many local government authorities. Ms Marino has advanced this theme.

**Ms MARINO**—Yes, I have. Thank you both for coming. I appreciate your submission and your presence here. At the moment if nothing changes where do you see that the current and future liability falls, given the issues of sea level rise? Where does the liability fall currently? You have mentioned a range of decision-making processes, but where does that leave local government right now?

**Mr Ghanem**—Liability is very complex and is individual to the particular circumstances of a case. It will depend on a range of things, such as who made the decision, when it was made, whether there is a duty of care and all of those common law principles. Currently, there are protections that apply to all those decision makers if they act in good faith, and there are some other mechanisms. For example, there is a Civil Liability Act in New South Wales which says that public authorities are not liable where they have acted reasonably, or as a reasonable decision maker would. That applies to councils, state government and all the other government instrumentalities. Then there is no liability for obvious risks under the Civil Liability Act, section

5G. It defines ‘obvious risk’ as something that a reasonable person is aware of. It is certainly arguable, in terms of climate change, that if you live on the coast there is a high risk that damage will occur as a result of storm surges, sea level rise and so on. In relation to new developments, for example, it would be hard for that property owner to come back in 20 years time and say, ‘You’re liable because you approved this’, when it was an obvious risk. It also depends on when the decision was made. A council cannot be held liable for a decision made in 1970, for example, in terms of climate change, when those risks were not apparent. It is very hard to give you a general answer on who is liable.

**Ms MARINO**—Yes, it is, but it is a very real issue.

**Mr Ghanem**—It is a very important issue, especially for councils. We have heard that, too, although they are not our normal constituency. Although the Local Government Act provides an exemption under section 733 in New South Wales, there is a requirement for good faith. Currently, that requirement is discharged if they follow the *NSW Coastline Management Manual* of 1990. That manual merely prescribes various options. It does not say, ‘You have to do this.’ As long as councils have turned their mind to the question of, ‘What do we do about climate change risk?’ It is likely they will discharge that. Having said that, in light of the fact that the community is getting more concerned about climate change, it is likely that the judiciary will interpret these provisions more strictly. They will say, ‘Good faith imports more than a consideration and requires something else.’

**Ms MARINO**—Exactly.

**Mr Ghanem**—It is very much a grey area at the moment. I hope I answered the question in some way.

**Ms MARINO**—Yes. It is as clear as mud.

**Mr Smith**—I would like to add to this partly by postscript. The other issue around that is whether we want, in a legal sense, to just let all of this happen and let case law answer all these questions. All those people whose properties are affected are quite rightly looking around for someone to sue.

**Ms MARINO**—Absolutely.

**Mr Smith**—That is what they want to do. Are we going to deal with this in the sense of saying, ‘Let’s just let the litigation play out and we’ll find out.’ In 20 years we will have a set of case law and principles around who is liable, in what circumstances, according to what and when. As Mr Ghanem has pointed out, the liability is very much about whether you made the decision 20 years ago or you made the decision last year after the latest reports, and the size of the council. All of those things are very complex. People will be getting legal advice about who they can sue and under what terms. They do not come to us because we are a public interest organisation.

**Ms MARINO**—You touched on the issue of the planning that is happening over potential sea level rises and what requirement that then places on the individual council to make those known to the public. Also, there is what that does to existing property valuations and any liability that

may exist in there. There is a whole raft of other issues in both of those scenarios. It is not simply on one side of this issue. I think the issue of liability compensation and so on is far broader than only one side of this. Then we have the issue of the actual definition of 'property' and what is right line and what is riparian, and if you are coming up against a body of water, where your rights are and what the movements will do. There is a whole other issue in there in the definition of where your property lies.

**Mr Smith**—Indeed. Currently, the main mechanism that deals with those issues is essentially the common law. We need to begin to deal with that sort of issue under statute rather than leaving it up to common law, on where your property begins and ends in terms of the sea.

**CHAIR**—You make it sound a lot more complex than the statement in the draft policy. I will just quote from the New South Wales government and seek your response:

Coastal hazards and flooding are natural processes and the government considers that the risks to properties from these processes appropriately rests with the property owners, whether they be public or private. This will continue where the risks are increased by sea level rise. Under both statute and common law the government does not have, not does it accept, specific future obligations to reduce the impacts of coastal hazards and flooding caused by sea level rise on private property.

**Mr Ghanem**—With respect, the government cannot discharge its liability in a policy statement. It depends on a judicial interpretation.

**CHAIR**—We did ask on what legal basis that statement was made.

**Mr Smith**—Did you get a reply?

**CHAIR**—No, not specifically. You are saying that this is really a whole new body of law that is going to be tested in the judicial system and establish new precedents that will apply, unless we do something by way of statute?

**Mr Smith**—I am personally surmising about that. I am drawing a conclusion from what you can see. The scenario that I drew out was about people feeling aggrieved with adverse publicity about their own properties and where they are thinking, 'My property value is going down. Who let me build here in the first place and why is this happening?' I suspect that it will. In defence of the policy statement, it is trying to be a pithy summation of the situation, but it does seem to oversimplify the legal situation. I do not think it is clear that under both statute and common law the government does not have all except specific future obligations—

**CHAIR**—Where the current indemnity applies to local governments acting in good faith and in accordance with the procedures, in legal terms would the responsibility then pass from local government to the state government if there was a challenge against a local government?

**Mr Smith**—Not necessarily, no. It would fall, if it were found that the council had acted in good faith and within the terms of that exemption. We need to remember that we are at that point where we are talking about an approval of something generally. It is not one of those situations with, say, contaminated sites where you can go further up the line. If you cannot sue the owner then you can go further up and sue the past owner or whatever. There is no hierarchy. It is just

whether the council is exempt from liability or not. If they are, then you can pursue that if there is a duty of care and you can make out the negligence. If they fall within the exemption you have just got to walk away and say, 'There's nothing I can do.'

**Ms MARINO**—As we discussed, for instance, we get all of the modelling done around Australia. How do you see the decisions that councils will make from there once they have that information being reflected in any form of legislation or other mechanism?

**Mr Ghanem**—You are saying that they provide the information to local councils. They are saying, 'This is the line in the sand. This is the number you have to deal with'?

**Ms MARINO**—It is not necessarily prescriptive. The councils are given the results of the research that will be done on the coastal zones and the potential sea level rises. They will still be engaged on a daily basis in approving developments. Where does that place those same councils in light of receipt of that information?

**Mr Ghanem**—If they act contrary to that information there could be a suggestion that they are not acting in good faith and not making use of all the information available to a council to make the best decision. The better way to do that would be to use that information to inform the formulation of new local environmental plans or similar planning policies that set out certain zones, for example, some areas where new development cannot go ahead or where appropriate setbacks need to happen. That should happen in the context of the provision of this information. This is part of what we are getting at with the federal framework—providing nation-wide information that is also localised. That is the tension that we are dealing with. I think there is potential for good use of that information and that is certainly one thing that councils have said that they want.

**Ms MARINO**—I can understand that, but I can see some real challenges for individual councils right around Australia and a significant level of responsibility and so on at that level.

**Mr Smith**—I agree. Again, I will make this as a preliminary comment about the sea level rise policy statement. There seems to be a sense that information is a panacea; that if we provide councils with this then we have done our job and we do not have to do anything more. In New South Wales—and I am sure it is the case in other jurisdictions—we have over 150 councils that vary enormously in capacity, resources and expertise.

**Ms MARINO**—And even in the potential impacts of sea level rise and other threats. There is a huge diversity.

**Mr Smith**—Indeed. There needs to be much more done than simply saying, 'Here's the information and you deal with it.' At the very least, there need to be training sessions around what this information means and how it fits into your decision-making framework as the current laws exist. As we have said in our submission, we think that the whole regime should be turned around to make it much more consistent with the idea of getting good decisions and says, 'You do need to take into account these things and if you're going to make a decision then you need to be aware of, at the very least, climate change impacts, risks and so on.' Further up there need to be provisions in planning instruments that make it compulsory that a decision maker has turned their mind to this information.

**CHAIR**—I am getting the feeling that some councils, having undertaken their own digital elevation modelling, may in some cases be sitting on the results of that modelling for fear of making that information public and the intended consequences of that on a whole range of issues, including value of property and insurance matters. Is that something that you are picking up in your discussions as well?

**Mr Smith**—I am not aware of that, but it would not surprise me. Maybe this is what was hinted at here. They are in a very difficult situation because the provision of information and the holding of information brings with it these kinds of provisions around the liability. What does it mean to act in good faith?

**Ms MARINO**—Absolutely.

**Mr Smith**—Once you hold that information you cannot pretend it is not there anymore. Not that anyone necessarily was doing that, but you are in a different situation where councils, as we said before, that were making decisions 10 or 20 years ago were not really expected to know about all of this stuff.

**Ms MARINO**—Conversely, for existing properties in that area the councils would also face the fact that if they were to release certain information essentially it could seriously compromise not only the existing value of properties already there but the potential to sell them. There is a whole raft of issues for that council in that context as well.

**Mr Smith**—Indeed. I agree totally.

**CHAIR**—Conceptually, how would framework national legislation mitigate some of these issues that we have just been talking about? If councils have the information now and they are a bit loath to act because they are worried about the consequences of liability, and then another layer of government is superimposed, does it make them more willing to act? When they say, ‘We need certainty’, I am not sure what that exactly means. If they have their own modelling that is surely sending signals. Is it certainty about who will pick up the liability tab? Is that the issue that is worrying a lot of them?

**Mr Ghanem**—They are worried about the veracity of their information as in whether it is correct and whether they have adopted the correct sea level rise formula. There is no easy answer to that, not even internationally under the IPCC. Their projections are expressed as a range of potential sea level rises.

**Ms MARINO**—If they are not correct then where does that leave the council?

**Mr Ghanem**—In relation to good faith, it is making the best effort with the information that you have. If councils have undertaken a genuine study of the various sea level rise scenarios and acted based on that, then that could be enough to discharge good faith. If it comes to light later that, ‘Hang on. You were using the wrong numbers’, then again, as Mr Smith mentioned, it depends on the level of knowledge at the time you make the decision. If it is based on best practice modelling at the time, that might go some way to protecting councils.

**Mr ZAPPIA**—My question relates to your view that the federal government should take some leadership on this matter. Given the constitutional constraints on the federal government, how would you propose that the federal government actually do that?

**Mr Smith**—Are you talking in particular about the idea of coastal protection legislation, policies and so on?

**Mr ZAPPIA**—Yes.

**Mr Smith**—We would submit that the federal government does have power. As I said in my earlier comments, clearly the Commonwealth government cannot act when it does not have the power to do so, but it also has the powers under the Constitution delineated in section 51. One of those relates to the relevant international conventions. The two that we would say in support of federal government action in this area are the Framework Convention on Climate Change directly, which contemplates under Article 4:

Formulate, implement, publish and regularly update national and where appropriate regional programs ... and measures to facilitate adequate adaptation to climate change.

That is one way that you could authorise that. Otherwise you would have to do so more indirectly under, for example, the Convention on Biodiversity Conservation, which is going to be relevant to many coastal but not all coastal issues. Does that answer your question?

**Mr ZAPPIA**—You have provided an answer. I am not sure that it answers my question. My understanding of the federal government acting in response to its obligations under international conventions is that that is rarely, if ever, used in federal government law. In other words, we are signatories to many international conventions. Reflecting that in our own laws only occurs when the government decides to implement a law. Other than that, it is not my experience that it is done on a general scale, that is, we do not automatically follow through with the provisions of an international convention just because we have become a signatory to it. My question as I originally stated it is: how would you foresee or envisage the federal government giving effect to the leadership that you want it to show?

**Mr Smith**—It is true that the signing of an international convention does not mandate or dictate that you need to domestically implement it, but it is also true that the government routinely does that. The Environment Protection Biodiversity Act is explicitly based on a series of international conventions. There are parts of the act which state that is the basis on which the act was passed and so on.

I thought your question was how you would give effect to it. I am saying that there is a power and it could give effect to a coastal protection act or program policies on that basis, because you do have the power. You do not have to, but you could give effect to it through that approach. As we suggest in the submission as well, you could use the Council of Australian Governments framework to achieve some of those similar ends around consistency, cohesion and coherent approach, but we think that the framework legislation approach would be a better approach.

**Mr ZAPPIA**—Thank you.

**Ms MARINO**—I have one other question and I do not necessarily expect you to have the answers. You touched on saltwater intrusion into freshwater aquifers. I wondered whether you had any further information on those that are most at risk with their proximity to the ocean. Do you have any detailed information?

**Mr Ghanem**—No. In our submission we looked at generalised state-wide circumstances.

**Ms MARINO**—I did not expect an answer. I just wondered whether you had some information to back that up.

**Mr Smith**—I would like to add an addendum. We were talking about the liability issue and the fact that councils had information and at some level were understandably reluctant to let that information out. The point to make there about liability is that if you have got the information and you are only withholding it because you do not want to forgo development options in the community or degrade the property values in the area, then that is obviously relevant to the issue of good faith. If you are uncertain about the information then that may be a different set of issues. It is not simply the giving out of the information, but if you withhold that information deliberately because you do not want to affect property values and you do not want to affect the kinds of plans that you have got further down the track, that is going to be relevant to the exercise of good faith around the approval or disapproval of particular developments.

**Ms MARINO**—Thank you.

**CHAIR**—Is your office doing any work by way of a discussion paper on the liability issues and maybe assessing some of the case law that is already emerging in this area? If so, it would be very useful for our committee to get a copy of that.

**Mr Ghanem**—The Environmental Defenders Office of New South Wales did a report for the Sydney Coastal Councils Group on assessing the liability of coastal councils under climate change action or adaptation action, and also assessing their responsibilities under the current legislation. That document is available from the Sydney Coastal Councils Group website.

**CHAIR**—They may have tended that in evidence yesterday.

**Mr Ghanem**—That was our assessment and our position in 2006.

**CHAIR**—Other states may or may not be doing that. You operate mainly on a state basis, having in mind the legislative frameworks that apply.

**Mr Smith**—We do, indeed. The Sydney office is by far the biggest so therefore has that policy capacity to do that consultancy work. I do not know of other EDO offices that have done that work, but I suspect that they have.

**CHAIR**—You have put a lot of store on planned retreat as a long-term strategy in the adaptation mix, and yet yesterday, if I heard it correctly, the people from Byron Bay Council said that planned retreat is a policy option that is considered within the framework of Minister for the Environment's and not the Minister for Planning's regime. Could you elaborate on that? As I understand it, the Minister for Planning can make a decision about a call-up development

without consideration of the input from the Minister for the Environment. We were told yesterday that there is obviously some degree of consultation, but it is not mandatory.

**Mr Ghanem**—Do you mean in New South Wales?

**CHAIR**—Yes, just in New South Wales. Then there are the different statutes that apply to cover councils that want to adopt planned retreat. Is that option indemnified?

**Mr Smith**—I will confer briefly, but I certainly do not know the answer to that. Maybe we will need to come back on that.

**Mr Ghanem**—I can probably answer the first bit, in terms of the concurrence or consultation with the Minister for Environment. Under the Coastal Protection Act, until it was amended, there was a requirement for concurrence from the Minister for Environment for any development in the coastal zone with certain parameters around that. That was recently removed in the raft of planning reforms last year, although that provision has not commenced yet. However, under part 3A, which relates to major projects, there is a section that says that the concurrence requirement does not apply. There is no direct obligation, as you mentioned, for consultation or conferral. There is also a provision under the Environmental Planning and Assessment Regulation, which states:

The Minister for Planning under Part 3A cannot approve a project in a sensitive coastal location that is prohibited under an LEP.

If the LEP has planned retreat mechanisms and there is a part 3A development that is proposed in that area, and if it is a sensitive coastal location, the Minister for Planning cannot approve that development. That provision is 8N of the Environmental Planning and Assessment Regulation. It is quite a powerful mechanism, because it still allows the councils control, which may include planned retreat, to prevent a part 3A project happening.

**CHAIR**—Does that apply in practice very often?

**Mr Ghanem**—I did not write down all of them, but there is a definition of what a sensitive coastal location is.

**CHAIR**—I was going to ask who defines that.

**Mr Ghanem**—It includes land within 100 metres above the mean high water mark. It includes coastal lakes, World Heritage areas, Ramsar wetlands, aquatic reserves, residential land within 100 metres of the water's edge or a similar definition, and there are a few more.

**CHAIR**—The planning minister cannot override in those situations the local LEP?

**Mr Ghanem**—Exactly.

**CHAIR**—We are hearing concerns from people who have appeared before us about the planning minister overriding even though there was an LEP in place. Catherine Hill Bay was one of those examples.

**Mr Ghanem**—Absolutely.

**CHAIR**—Was that because that development did not qualify in the terms of a sensitive coastal environment?

**Mr Ghanem**—Yes, I believe so.

**Mr Smith**—Part 3A gives enormous power to the minister to override those more local—

**CHAIR**—Excepting in these?

**Mr Smith**—Excepting in those.

**Mr Ghanem**—The other qualification is for environmentally sensitive areas of state significance, which is in section 8N.

**CHAIR**—Who makes the decision about the sensitivity of the areas under statute? Is it the Minister for the Environment or the Minister for Planning?

**Mr Ghanem**—It is just defined by those areas.

**CHAIR**—So, there is no dispute?

**Mr Ghanem**—Yes, that is exactly right.

**CHAIR**—Is that in your submission to us?

**Mr Ghanem**—No, it is not. That is specific to New South Wales.

**CHAIR**—I did not think it was.

**Mr Ghanem**—As I said, there might be arguments about what is 100 metres or where the shore is, but generally they are well defined.

**CHAIR**—To be fair, most of the submissions that have been made have expressed concerns about the call-up provision in New South Wales, but on the other hand it should be balanced against the fact that maybe in some local government jurisdictions it might be better for a state-wide process to apply. That depends on a case-by-case evaluation.

**Mr Ghanem**—Exactly.

**CHAIR**—Are other call-up powers, based on your knowledge, more extensively used in New South Wales than in other states?

**Mr Ghanem**—I am not sure about a comparison with other states. We have expressed concern about some projects that were called up as part 3A that, on their face, did not appear to be of regional or state significance. That is symptomatic of the wide discretion given to the

Minister for Planning to determine what is a part 3A project. We have often called for making that a bit more objective in requiring, say, the minister to be satisfied of certain things before something could be considered a Part 3A project. However, there is a state environmental planning policy around major projects that sets out those categories of development that are automatically part 3A. I am not sure about the extent to which it is being used compared to other states, but part 3A experienced a bit of an exponential growth between 2006 and 2008.

**CHAIR**—I live in the Illawarra. There are a lot of projects that get called up from that area. The most recent is the development at Killalea in the state park, which is of interest to the local community. Thank you very much. We certainly got a lot of very valuable information from your submission and thank you for assisting us in teasing out the liability issue, which is going to become a much more significant issue. We will look at your suggestions on whether we need to cite conventions that can be used either in considering possible amendments to the act or going along the lines of your national framework legislation. It has been a very valuable exchange and we thank you very much for coming along.

[12.07 pm]

**PRYCE, Ms Lowri, Executive Officer, OceanWatch Australia**

**ROWE, Mr Simon Michael, Program Manager, Aquatic Habitat Rehabilitation, OceanWatch Australia**

**CHAIR**—I welcome representatives of OceanWatch Australia to our public hearing. Although the committee does not require you to give evidence under oath, I should advise you that the hearings are legal proceedings of the parliament and warrant the same respect as proceedings of the House itself. In this regard the giving of false or misleading evidence is a serious matter and may be regarded as a contempt of parliament. The committee has received your submission and I personally welcome it because it was one of the few that dealt with the impacts of climate change on marine life, which is an important area for consideration. It was very valuable. It has been authorised for publication, as you would be aware. We would now like to invite you to make a brief opening statement before we proceed to questions and discussion.

**Ms Pryce**—Thank you for the opportunity to express the views of OceanWatch Australia with regard to climate change and the environmental impact on coastal communities. OceanWatch Australia is a national environmental not-for-profit organisation working to achieve sustainability in the seafood industry. We work through action based partnerships with the Australian seafood industry, government, natural resource managers, business and coastal communities around Australia. We were established in 1989 by commercial fishers in New South Wales because of their concerns about the damage being done to the coastal zone, which was in turn negatively impacting on fish habitat, water quality and overall ecosystem productivity.

Today, OceanWatch Australia links healthy catchments and healthy oceans working to deliver our mission of protecting and enhancing fish habitats, improving water quality and advancing the sustainability of fisheries. We are doing this through three programs—Aquatic Habitat Protection Enhancement, Aquatic Habitat Rehabilitation, with Mr Rowe representing that area of our work, and Advancing Sustainability of Fisheries.

The Australian seafood industry is recognised as a critical component to Australia's economy, being the fourth largest primary industry production by value, but the value of the industry is not only fiscal. The sector also employs an estimated 13,500 people primarily in rural and regional Australia. This social value should not be underestimated. The long-term survival of the seafood industry is dependent upon healthy coastal marine environments and protection for critical aquatic habitat in coastal zones, and it must be recognised as a priority. Addressing impacts on the coastal zone is critical to the long-term sustainability of the seafood industry and the coastal communities that rely upon them.

Climate change poses additional risks to the sensitive environment already struggling with population growth and the inappropriate land use planning and development. The impacts of climate change will also affect the seafood industry. Our submission sought to outline a number

of areas of concern that we believed required priority action. We wish to reiterate a few of these points here today.

Existing policies and programs related to coastal zone management, taking in the catchment coast-ocean continuum, have largely failed to deliver any substantial and long-lasting protection at a regional and national scale. Policymakers have failed to implement integrated and multidisciplinary responses and there have been no policies that truly account for catchment coastal oceanic continuum.

Due to the three layers of government operating and the silent mentality that occurs within each tier it is imperative in the coastal zone that NRM programs are given long-term investment, political commitment and long-term delivery of frameworks that allow for appropriate time to build the capacity of coastal communities, local councils, NGOs and private businesses to move forward towards understanding the connectivity and integrated approach required to undertake activities in our coastal catchments.

An important component for any successful program is the people employed. Managing natural resources is really about managing people, modifying attitudes and behaviour. It takes time and trust for individuals and communities to change. People working in this field are passionate and it is vital that government policy support the programs that employ these people, and provide long-term security of funding rather than year-on-year contracts. Such uncertainty has resulted in a hiatus for community programs and environmental protection. This has actually been a key issue for OceanWatch Australia in the past 12 months. Due to changes in NRM funding and priorities with the change of Commonwealth government we have not been able to retain the three key people who put together the submission in 2008. Therefore, we would ask the committee's understanding if we would need to take some questions on notice.

We do believe that the future governance frameworks and policies need to establish strong legislative frameworks for future development and use of the coastal zone that incorporates world's best practice, integrate all tiers of government under one set of rules of coastal development and land use, to create synergy between governments for the protection of the coasts and subsequently the marine environment, and to provide for the integration of environmental considerations within all decision making.

Human impacts on the coastal zone are well documented. It is how we manage these impacts that matter. It is imperative that a consistent and nationally applied method to consider cumulative impacts from land use planning and decision making is developed as a matter of urgency. The current method of considering developments in isolation is limiting the resilience of our coastal and marine habitats and potentially degrading these environments over a long time scale, such that we cannot see the incremental changes that are occurring until it is too late to reverse the decline.

Promotion of environmental best practice and sustainable resource use are notoriously difficult to implement. However, we have identified specific activities that government could do, and some we would highlight today include move to completely protect the rest of the coastal land now from any further development. World best practice development standards should be mandated for any coastal area. This must include collection, treatment and reuse of grey, black

and storm water, critical to improving coastal water quality. Mr Rowe will continue with a few more.

**Mr Rowe**—The impacts of climate change on coastal areas includes the obvious, and we will discuss sea level rise, but there are many other impacts that have not been well published, such as ecosystem resilience amongst salt marsh, mangrove and other coastal habitats directly linked to coastal fisheries. Ecosystem resilience is the ability of ecosystems to recover from a disturbance event and that resilience has already diminished due to impacts that have occurred or are occurring from coastal land use planning and population growth.

Environmental impacts are accumulative and additive. Climate change impacts in the marine coastal environment must be considered and addressed at the ecosystem level. There are varying levels of acceptance of climate change within the community. This creates problems for change agents, because there is a need to deal with the scepticism. Working at the local level is very important as this enables communication to be delivered with individual tailoring.

Sustainable coastal communities have an understanding and ownership of the environmental issues affecting their local area. Local governments play a key role in the protection of these areas, but the residents have an equally important role. It is essential that government programs support local industries, particularly if they are dependent upon the marine environment, or protecting the natural assets in the area.

Environmental issues need to be owned by the individual. Cumulative impacts need to be demonstrated so that all actions are taken by all people. This may need to occur through legislation, but each person living on or close to the coastal zone will need to understand how their actions impact on the surrounding environment. A good example of this is one of the programs that we look after called Tide to Table, which has been very successful in demonstrating to primary producers, policy makers and others the impact that catchment actions have on the coastal zone.

One of the things that we run as part of my program, along with the on-ground works, is connectivity tours. These bring together a range of stakeholders, such as farmers, miners, fishers, NRM and government personnel, into an area where fishers can talk through the issues in the catchment that affect their productivity. Through this non-confrontational discussion all stakeholders are able to make catchment connections. These connectivity tours have helped bridge gaps in understanding, allowed new opportunities for discussion and dialogue, which has resulted in on-ground actions to mitigate degrading practices.

With regard to government and institutional arrangements for the coastal zone to date, there has been an ad hoc and disparate approach. Although there is talk of a whole-of-government approach, this has not been delivered yet for our eyes on the ground. Government and institutional arrangements need to be addressed to ensure adequate protection of these habitats. Some key areas that need to be considered include the development of clear environmental targets with guidelines on how to achieve these goals. Inappropriate development must be addressed if we are serious about environmental protection. Implementation of adaptive management strategies is particularly important in the face of climate change and for fishery resources where there is likely to be changes in species distribution and productivity.

We acknowledge the complexities in managing natural resources within the coastal zone. However, with the risks associated with climate change looming, it is imperative that government frameworks are redefined and improved to ensure the resilience of our coastal and marine ecosystems that sustain us all. We thank the committee for your time today.

**CHAIR**—Thank you. We received the written submission some time ago. The CEO was then Ms Lawrence. Is that right?

**Ms Pryce**—That is correct, yes.

**CHAIR**—What happened? Did you lose some federal funding that you previously had?

**Ms Pryce**—Yes. There was a bit of a time lag in changing government/policy. Funding ended for our 10-year program that had been working with the commercial fishing industry. There was about a seven-month time lag between that finishing and it being refunded.

**CHAIR**—Were there no new programs that you could have applied?

**Ms Pryce**—This was the new program. There was a seven-month lag between the completion of one program and the starting of the next round of funding. Consequently, we have lost an awful amount of our team in the process.

**Ms MARINO**—That is quite consistent around the country.

**Ms Pryce**—I would say so, yes. However, fortunately for us, we are one of the organisations that has been refunded. We are now trying to build our organisation back to where we were previously.

**CHAIR**—Are you funded by the Minister for Primary Industries?

**Ms Pryce**—Funded by the Commonwealth government through a program.

**CHAIR**—Which program?

**Ms Pryce**—Caring for Our Country, through Community Coastcare, and also from open grants.

**CHAIR**—I am glad to hear that.

**Ms Pryce**—Obviously there are consequences to the work that you do, if there is a loss of trust with industry and also time lost on the ground in the work that we do.

**CHAIR**—Thank you very much for the submission. The deputy chair of the committee is going to ask some questions of you, having some expertise in the areas that you work in.

**Dr WASHER**—Thank you for your presentation. It was terrific. Basically, my interest is because of my son-in-law, who is a lobster-cray fisherman on the west coast of Australia, as is all

his family. There is one problem that you have alluded to, and I will give you a classic example. We are building a major new treatment plant called Alkimos, north of Perth. This plant will take the waste effluent for something like a quarter of a million people. Currently, there is a pipe being built three kilometres out through the reef to dispose of a lot of this effluent, so it does not hit federal waters. Federally, we should start looking at having some sort of COAG agreement about what should be discharged from these treatment plants and what effect it does have on fisheries in the future. Can you comment on some of the ideas that you would have on that? You did mention effluent outputs.

**Ms Pryce**—Absolutely.

**Mr Rowe**—I do work on some projects concerning protection in particular for the oyster and shellfish industry. I know there is a bit of disparity in the actual outputs of some of these wastewater treatment plants from the perspective that perhaps cleaner water is not necessarily better for the fish.

**Ms Pryce**—It is also about having a nationally consistent approach to the issues. I am not aware of too much research being done or being available. Also, if research is being done there should be very good involvement of the fishing industry or whichever industries would be affected. That is often the case. We actually do not have a fishing industry that has a cohesive national body. This also can be quite difficult. We have had certain cases in New South Wales where to have any kind of consultation with industry the approach seems to be to approach individual fishers, which is not necessarily the ideal situation for those fishers or for the industry.

**Dr WASHER**—In an earlier session yesterday I asked about the policy of shipping, bilge discharges and so on and the effect on local marine environment, including pests. As you know, in the oyster and other industries there have been problems with dinoflagellates and other toxins. Do you have any comments on what the policy is in New South Wales?

**Ms Pryce**—OceanWatch's involvement is that we currently sit on the National Introduced Marine Pests Coordination Group, which does mean that the industry has a voice through us on what the impacts are from introduced marine pests, for instance. A case in point is Darwin a few years back when there was an introduction of marine pest. The consequences for industry can be quite catastrophic. Currently there is a rollout through the SeaNet program, which is our program that works with the commercial fishing industry, to alert fishers to the national guidelines that are being produced. The trouble is that it is a slow process to introduce any new guidelines and certainly ballast water transfer is a problem. I do not think that we have resolved it on a national level, or an international level for that matter. It has taken about 10 years to get to this point, so I imagine it will take a few more years. In some cases, I wonder if the fishing industry has that time.

**Dr WASHER**—We are having a problem in the west with nutrient runoff—not from in the fishing industry—into underground water. Has that been an issue here in New South Wales—agricultural and horticultural nutrient runoff affecting fishing zones?

**Mr Rowe**—Certainly some of the projects that we undertake look at nutrient, particularly from areas such as dairying. We have got e coli going into the watercourses, harvest area

protection, and I guess those industries get shut down once they hit a certain trigger level. They will have to wait a certain period until they are able to sell their oysters again. There are quite a few projects that we are working on that look at the affect of the nutrients entering the waterways. It is not a massive concern from the point of view of climate change. I cannot see how those two things are necessarily related.

**Ms Pryce**—Other than the issue of resilience. If an ecosystem has resilience issues already, having this sort of impact from land further degrading what is already there is obviously the issue.

**Mr Rowe**—That is what we have tended to focus on. As far as the marine habitats and protecting the inshore areas, it is the resilience of that salt marsh/mangrove interface. We do a whole range of projects with different industries because they all affect the seafood industry in some form, but from a habitats perspective it is a bit different from nutrient, which is more about water quality. What I am trying to get at is the loss of habitat and the resilience of the habitat is just as important as the water quality.

**CHAIR**—Are these programs just New South Wales based or are they done in other states as well?

**Ms Pryce**—The SeaNet program is a national program. Tide to Table is currently in two states, Queensland and New South Wales.

**Ms MARINO**—Thank you both for coming. I appreciate your work on the ground. I have a number of groups like yours in my electorate. Could you touch on the effects of desalination in the marine sense? You also touched on the lag time in funding. Are you achieving as much funding now as you were previously? Secondly, I know the importance of local regional groups. Are they operating effectively?

**Ms Pryce**—At the moment in terms of our funding, yes, we have achieved the same sort of funding level, but it only lasts until the end of this year.

**Ms MARINO**—Is that the end of the financial year?

**Ms Pryce**—Until November. Obviously forward planning is quite difficult.

**Mr Rowe**—That is for the SeaNet program.

**Ms Pryce**—That is for one of the larger programs. The Tide to Table programs do extend beyond that date.

**Ms MARINO**—Are the natural resource management and catchment groups that you are working with operating effectively? Do they have the funds to do their job in the same way?

**Mr Rowe**—That is an interesting question. We work with the natural resource management groups and in the past the old system has meant that we put applications through them. In effect, the funding comes from feds, to the state, to us and then on ground. With the new Caring for Country procedures, the natural resource management groups' place in that arrangement is a bit

unclear and a bit confused. I think with the new applications that are being received at the moment that are due in next week for Caring for Country there are a lot of people running around asking, 'How does this system work? Where is our place in the natural resource management?'

**Ms MARINO**—Is there a proportion that is competitive?

**Ms Pryce**—Yes. 'Competitive' is probably a very good word to use for what is happening at the moment, and it is probably more competitive than it should be.

**Ms MARINO**—Could you touch briefly on the impacts of a desalination plant on the actual fish stocks and habitat?

**Ms Pryce**—That is not my area of expertise.

**Mr Rowe**—I cannot say it is mine, either.

**Ms MARINO**—That is fine. Please do not go there if it is not. I just thought you may be able to provide some input. Thank you.

**Mr ZAPPIA**—I have a question in respect of fish stocks. I accept that the way we manage our coastline can well affect breeding grounds. Is there any evidence that what we are doing is actually diminishing our fish stocks or rather relocating them to another part of the coastline or even another part of the world?

**Mr Rowe**—I would not say that the science behind fish stocks is still elementary, but it is still developing. The specifics of understanding the ecologies of these complex interactions are still a fair way behind. There is science out there that links specific habitats to specific species, but then interactions within those subgroups is very confusing. Currently, there is not enough being done in that particular area to be able to make those assumptions.

**Ms Pryce**—About 70 per cent of our key commercial species actually rely, at one stage or another in their lifecycle, on estuaries. In that case, what happens inland and into our estuaries obviously will have an impact on what is going on there. How that relates to climate change is an unknown from our point of view. Obviously, it is a big concern.

**Mr Rowe**—My personal view is that as the habitat as in flora changes you will see a change in fauna so that the fish species will change. You will see that up and down the coast. I think approximately one or two degrees change in temperature will see different distributions of mangroves occurring, and that is also encroachment along salt marsh. It is known that the ratios of salt marsh to mangrove to the species higher up is all interrelated and has effect, but the science is still behind in proving that.

**Mr ZAPPIA**—Thank you.

**CHAIR**—Thank you both for attending the hearing today. The secretariat will send you a copy of the transcript for any corrections that need to be made. We will now suspend

proceedings for lunch and will resume at 1.30 pm. Thank you very much and good luck in your endeavours.

**Ms Pryce**—Thank you.

**Proceedings suspended from 12.33 pm to 1.28 pm**

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**THOM, Professor Bruce, President, Australian Coastal Society; Member of the Wentworth Group of Concerned Scientists**

**CHAIR**—I welcome you to this public hearing. Although the committee does not require you to give evidence under oath I should advise you that the hearings are legal proceedings of the parliament and warrant the same respect as proceedings of the house itself. In this regard the giving of false or misleading evidence is a serious matter and may be regarded as a contempt of parliament. The committee has received your submission and it has been authorised for publication. We would now like to invite you to make a brief opening statement if you so wish before we proceed to questions and discussion.

Before you begin I would also like to thank you on behalf of the committee for your briefing very early in the process so that we had a clearer idea of the kind of issues that we were likely to encounter. We can add a few more to the ones that we discussed at that point of time which no doubt we will have the opportunity to traverse today. We thank you for your ongoing interest, support and advice during the course of our inquiry.

**Prof. Thom**—Thank you. It has been a privilege and a pleasure to have been able to assist the committee. Let me address the question which has I think appeared several times before the inquiry if I have judged many of the submissions correctly, and it appeared in my own initial submission as well. Federal action in coastal management and planning in Australia is something that I think this nation needs, deserves and certainly warrants at various levels. I say this because of previous inquiries that the house has been involved in and because the Resource Assessment Commission recognised a need for federal involvement in what is a great treasure of Australia, our coastal zone and its various assets and of course it is where so much of our population lives. Those inquiries really did dwell on non-climate change issues, those associated with population growth, tourism impacts on the coastal zone and all that flowed from that.

But the climate change dimension of your inquiry raises it to another level. It raises it at the national level because climate change is a national problem. Australia is recognised as being one of the most vulnerable countries and of course as a continent to the impacts of climate change in so many different ways. No matter what sort of emissions trading schemes or international agreements are reached, we are still locked into climate change as I understand the science and as I have participated in the science. We therefore need to—and I stress this—plan for the worst and hope for the best because more and more we are seeing through the science, as came out in Copenhagen a week or so ago, that the worst case scenarios are appearing more and more in the scientific literature as being more and more likely. This means that we need to consider coastal planning and management not just as a natural resource issue or an environment issue, we need to consider it as a national issue cutting across many sectors of our economy and our ways of life.

Specific actions are needed in my view because we need a consistent national approach, a national mechanism or mechanisms to handle the uncertainties, the difficulties, and the jurisdictional, cross-jurisdictional and cross-administrative activities that bedevil coastal management. As I outlined in my submission, the coast is a wicked problem. It is recognised internationally as a wicked problem because it is just so difficult to come to grips with the

complexity of issues which confront us. Why have we never had a coastal division of CSIRO? It was advocated before the executive by me back in 1975. We have not had it because it is too complex even for the CSIRO to grapple with as a cross-disciplinary type activity. And you could go on and on with this with both state and federal jurisdictional matters. Consistency is in the national interest and I believe is fundamental given that we need to plan for the worst. And how do we communicate that?

We also need to have a better mechanism to prioritise investment within our natural resource, environmental and infrastructure, and social and economic domains. Our health issues along the coast of Australia are going to be increasingly intensified by temperatures up to four, five or six degrees. If you go to 550 parts per million CO<sub>2</sub> you are heading towards four, five to six degrees higher temperatures in some parts of Australia. What is this going to mean in terms of the number of days above 40 degrees Celsius? What will the impact be on people of retirement age along the coast who may or may not have adequate health facilities? That is a dimension of coastal management that is going to be critical in the future.

Prioritising investment for Caring for Our Country or through specific grants to local councils who are bedevilled with lack of resources to do certain things given our current funding arrangements need to be looked at in the context of climate change adaptation. I have recently been advocating very strongly that each local council in Australia develops a climate change adaptation plan based on visualisation technology so that people know by using Google Earth or some other format what is confronting their society under different scenarios of climate change. We need to stimulate action through investment mechanisms which the Commonwealth has a capacity to do and which will deliver best practice in urban design and in assessment of the impacts of coastal vulnerability in this whole range of issues that I have just touched on.

Another specific reason is that the Commonwealth is in the best position to provide uniform, up-to-date, scientific information that is available to all citizens, governments, decision makers in industry and investors in Australia. We now have a plethora of ways of communicating the mishmash of information that is coming through. We have no consistent mechanism of doing that. We have some very interesting individual court cases where different types of information are used to support a particular type of advocacy. Having a consistent information mechanism, which I think the Commonwealth can provide using various provisions that are available to it, will help overcome these problems. I am very conscious that even the Australian Constitution as it was delivered in 1901 had within it a provision for the Australian government to provide information on meteorology. It is probably one of the few references in the Constitution to the environment. Way back there we had recognition that the Australian government can provide at the national level information for the betterment of Australian society.

I have advocated in my submission a five-step plan. I will not go into the details because you have seen that and I know you have been commenting on that. Briefly, it is: the need for a national coastal policy; consideration for a coastal zone management act; the establishment of a coastal division within the federal bureaucracy which covers the various agencies and cross-sectoral interests; the need for a federal science agency to take on board a national coastal information system which can do the sorts of things I have just mentioned; and, finally, the need for an external coastal advisory council which has players on it from different interests, which can serve the government by providing external advice in a consistent way and which can be

called upon to take types of actions such as the Productivity Commission does that relate to the betterment of wellbeing on the Australian coast.

**CHAIR**—Since we received your submission you would be aware that in regard to some of the concerns you had encompassed in recommendation 11:

... that the Inquiry (a) note the lack of a national coastal information system based on emerging science which you have organised to provide support for decision makers, could be used to develop guidelines ...

You would be aware of much of the action that has been instituted by the Department of Climate Change. We heard this morning about the Smartline project—that is nearing completion—and the digital elevation modelling. Have some of your earlier criticisms been allayed by some of the work that is occurring in terms of the national database? What more could and should be done?

**Prof. Thom**—A lot more could be done. I think as I indicated initially we have made a number of steps forward over the last few years as a result of recognition at state and federal levels that we have a climate change problem. I presented the climate change problem with Graeme Pearman and others to Bob Hawke's cabinet in 1989, to the first Prime Minister's Science Council back in 1989. So much has happened in the last few years that was not happening for the previous two decades and I am really quite pleased and excited by what has happened. What is not happening though is a mechanism by which the type of information that I have outlined and which was outlined to the previous Commonwealth government as part of a joint submission from CSIRO and Geoscience Australia was a national coastal information system which does bring all this together and is ongoing.

What I see from the Department of Climate Change of course is very important. They have a number of contracts out to do certain things that, if you like, form the first pass mechanism of looking at coastal vulnerability. But as is now recognised by the Department of Climate Change there are some bigger issues associated with climate change adaptation in the coastal region. Those issues go to areas which have not been touched on yet but do require a Commonwealth involvement in the provision of information. The CSIRO division of sustainability is starting to look at some of these issues but nothing has been brought together and there is no systematic demand that this not only be brought together but there be a continuous long-term investment in that process, and that is what is worrying me at the moment.

**CHAIR**—Professor Woodroffe this morning suggested that despite the steps that we have made in terms of the fundamental modelling and some of the information we get when monitoring what occurs, if we have the Smartline someone needs to be looking at the changes and developments that occur so it is not just a kind of rigid data set. We need to be monitoring and—

**Prof. Thom**—There are two approaches to this. There is monitoring in the biophysical context. What changes are taking place to our estuaries, to our coast and to our reefs in terms of climate change drivers in the biophysical domain? The second form of monitoring is really the more difficult one. What monitoring is being done in a compliance sense as to whether the good policies that many of the states have in place at the present time are being implemented? New South Wales and Victoria both have in the statutes and in policy a number of provisions—in the case of New South Wales going back to 1997—that indicate to decision makers at local

government and state government level that they should consider climate change impacts. But they are not under any explicit obligation to do so and we are now seeing court cases which are revealing that lack of explicitness in what councils or government planning agencies are doing. That lack of explicitness leads the courts to have to make interpretations, some of which are favourable to understanding climate change impacts and others which reject climate change impacts.

This is creating policy through court decisions. There is no mechanism for bringing into the public domain state by state on how the current policies are being delivered with respect to climate change impacts. This is one of the reasons why I suggested step one in my five-step model that you have a COAG agreement with the states which does institute a mechanism by which that sort of monitoring is brought into the public domain, the flaws are then seen in the compliance processes and whether or not governments have the guts and the conviction that they should then make more explicit what needs to be done with respect to the planning and management for climate change impacts.

**CHAIR**—We have heard many people and many submissions raise the issue about the need for national intervention, national involvement, national leadership and we have explored a number of options in that regard. This morning the Environmental Defenders Office suggested framework national legislation. Others have suggested changes to the EPBC Act. Others recommend a COAG type process and agreement. In your earlier submission you had a strong view against amending the EPBC Act. You thought there was a better way to proceed. Would you like to just outline your views on those options and the rationale behind the particular approach that you think would best suit the needs of the coast?

**Prof. Thom**—I think there needs to be a national approach. I think first of all you do need a COAG agreement and you need some form of agreement that brings together the issues that you are considering and puts it on the table as I just answered in the previous question. In my view that should be done fairly quickly. I hope that following the receipt by parliament of your report and the recommendations that you have there is an agreement to go forward to COAG with some action which I hope you will be in a strong position to recommend. That is an aspiration that I have. Maybe it will not be fulfilled but I hope you will so do. But to me the experience that I have had and seen from the point of view of the Wentworth Group and my understanding of agreements is that particularly if there is a change of government—and we saw what the leader of the Liberal National Party in Queensland was saying prior to this last week's election about his view on the Murray-Darling Basin agreements if he were premier what he would be doing would be challenging the relationship with the Murray-Darling Basin. To me there are some flaws in those sorts of agreements particularly if you can revoke referral powers, even through a statutory process in that particular case. I advocate that you need to have a coastal zone management act which highlights the complex nature and the intersectoral nature of coastal management; how critical it is for Australia's social, economic and environmental future; how we need through a Commonwealth mechanism to ensure that state legislation which should flow from the Commonwealth legislation does put in place explicit obligations to consider climate change impacts and then through a mechanism either from state regulations or through policy agreements you spell out how that can happen.

I do think that, as with the coastal act in the United States, that act does provide incentives for governments, whether state or local, for best practice behaviour. It does recognise in statute that

the Commonwealth has a role in the provision of information so that it is clear, not through an amendment to the EPBC Act but through a very explicit recognition, that the coast is important to Australians; it is vital to Australia's future. Through that legislation you have a mechanism of recognition and action that flows through to other levels of government, recognising that the Commonwealth should not be the ones that are going to be determining planning decisions in the seat of Throsby or elsewhere. There are other mechanisms for planning decisions to be made but the Commonwealth can provide the necessary leadership and guidance as I am sure has been spelt out by other submissions.

**CHAIR**—The other issue which we probably did not touch on when we spoke initially which is obviously a bit of the elephant in the room is the issue of liability. You would be aware that thankfully we have a QC as a member of the committee but he is unable to be here today, so Ms Marino has kindly taken on the line of questioning that we have pursued over the last couple of days so I would ask her to seek your views on some of these hot issues.

**Ms MARINO**—Where do you see effectively at this moment the current liability and compensation of sea level change falling?

**Prof. Thom**—The lawyers are having a field day on this one at the moment.

**Ms MARINO**—You mentioned that earlier, yes.

**Prof. Thom**—I just received this morning a copy of the advice which came to the Sea Change Taskforce which may have been mentioned by Alan Stokes this morning from Andrew Beattie, a partner at Baker and McKenzie's who presented at the sea change meeting at Mandurah last week indicating that this lack of explicit obligation on the part of councils or decision makers at state level to take on board these climate change impacts opens up this whole issue of liability. If there is more explicitness then there may be a clearer way forward. But the dimension of this form is in two time periods. There are those decisions that have been made in the past and those decisions to be made in the future. There should be no excuse for decisions being made about future developments or redevelopments with respect to the risks that property development has, or even public infrastructure has, in relationship to the potential risks faced under climate change, whether it is sea level rise or increased intensity of cyclones. I know the insurance industry is petrified of a cyclone category four or five hitting the Gold Coast because we have allowed for canal estate development on the Gold Coast at freeboard levels which are pretty low. More recent canal estates have raised those freeboard levels for the houses.

We come back to the issue of previous developments. Where do liabilities come in there? In many cases individual property owners cannot get insured. They cannot get insured now because they are sitting on top of eroding dune escarpments. Many of those property owners do not care because they are wealthy enough to not have to worry about having insurance companies bear their risk. But there are many property owners who live in low lying areas around the Australian coast who are not so wealthy and who at the moment think they have insurance but do not necessarily have insurance. The capacity of these property owners to bear the costs of being impacted adversely by sea level rise or by a storm surge or by whatever it is that impacts on them under climate change, their capacity to absorb those costs is very, very limited. Who are they going to react to? They are going to be angry. I think I previously mentioned to this inquiry the possibility that the insurance industry has indicated something like 700,000 properties

around Australia are within a zone of risk. The majority of those are in Queensland followed by New South Wales. Those people are going to turn to whoever, the government, whether it be local, state or federal government, for help. If they do not they are going to start class actions and all sorts of things; and the lawyers are understanding this and they are girding their loins in some cases to take on some of these cases. I know of cases which are now brewing because of this. This particular issue is unclear.

The New South Wales government has just released its draft sea level policy which I understand has been tabled. The New South Wales government is saying with respect to sea level rise benchmarks that there is no regulatory or statutory requirement for development to comply with the benchmark. Interestingly enough that point was not picked up in the *New York Times* when it reported recently on the courageous nature of the New South Wales policy document. It did not reference that. The New South Wales government in that particular draft is saying: we will not bear liability for private property but are they bearing liability for public property, because there are a lot of public assets. They do not mention public in that document. But let us take the private; they are saying they do not bear that liability.

**Ms MARINO**—Does that liability go back to the local government or to whom?

**Prof. Thom**—They do not say. The legal advice on this, which was the basis of their document, suggests to me that the legal advisers do not want to say who bears that liability. We do know from previous cases, some of which I have been involved in the past, that the affected individuals, whether they be existing property owners or property owners who expect to develop in what may be a vulnerable area, do expect to be compensated. Unfortunately we have not gone too far down the court route that has helped those property owners. In New South Wales for example there is a provision in section 773 of the Local Government Act which makes councils immune from liability if they follow in good faith a particular process outlined in manuals or guidelines. That immunity provision has been tested in the High Court, *Bankstown City Council v Alando Holdings*, and found to be a secure provision. I do not know about other states. I do not know if other states have in their local government act such explicit immunity. It is very explicit with respect to coastal hazards and with respect to flooding in New South Wales. It is very explicit. I do not think other states have quite such a provision but they do have—

**CHAIR**—Will the immunity apply to the sea level rise issue?

**Prof. Thom**—It applies to what is in the manual—

**CHAIR**—That has not been updated for some time.

**Prof. Thom**—It has not been updated but the manual is referred to in the coastal policy and in the Coastal Protection Act and because it is in the coastal policy it is therefore referenced, yes.

**Ms MARINO**—But if we have a state government for instance that overrides or uses call-in powers to change the decision by a local council, where do you see the liability and compensation issue falling then?

**Prof. Thom**—It is interesting because the courts may also override decisions of councils. The tribunals or, depending on where you are as to what state, the courts may override a council

decision. The courts never bear the liability. It goes back to the council because the council is the administrator of the planning process. With respect to, say, the state in a state planning decision—for example, in New South Wales we have provision part 3A, which the Minister for Planning has the powers to call-in and act upon—I do not know. It will be an interesting decision for the courts to reflect on because even if a part 3A decision is made councils still are the administrators of the planning action.

**Ms MARINO**—They are at the coalface of this.

**Prof. Thom**—The coalface comes back to local government. To me, again coming back to my earlier point, we need to have clarified in law where those liabilities should rest because we could as a nation be faced with huge amounts of liabilities given the projections of the scientists. I am accepting them at the moment. I am not going to question my colleagues in science about their worst case scenarios. As I said, we have to plan for the worst and that means we legally have to plan for the worst.

**Ms MARINO**—When you said we should plan for the worst and hope for the best, for those who may be engaged in property development or who are seeking to and are being refused on that basis and in their view over time the sea level rise or other impacts do not occur, then there is the other side of the question which is the lost opportunity as well and the cost of that.

**Prof. Thom**—Again it would be interesting to go through this in a place specific situation. When we drafted the coastal design guidelines in New South Wales in 2002 we were conscious of how one can best use land that is vulnerable. It does not mean you sterilise that land, you open up other opportunities for a developer to use that land. For example, if a developer owned a particular piece of land that was potentially liable to a higher sea level by 2030 or 2040 one would not want to put a high-rise block of units there or a nursing home or something like that; one could be looking at some form of public use investment, say, in the sporting facilities or of some particular nature that would not necessarily bear a great cost to the private individuals. Again, there would have to be an examination of this on a case-by-case basis, but it does not necessarily mean that all investment opportunities are wiped out simply because there is risk to that particular tract of land.

**Ms MARINO**—As you said there are a number of issues regarding the liability side of things but also if you look at the variety of definitions of what property is from a local council's point of view—and some of those are defined by a water body be it a river or an estuary or something similar—and there is a diversity of property titles and what that encompasses whether it is right line or whether it is riparian, there is a whole raft of issues in there as well for local councils to have to deal with.

**Prof. Thom**—Again I can speak from the New South Wales perspective. When we amended the Coastal Protection Act in 2002 we were extraordinarily conscious of this. If you look at that legislation we brought in provisions which directly relate to the impact of ambulatory titles. The reason for that is under sea level rise can you sustain accretion of the shoreline? In other words, can you sustain a survey that will provide a property owner with increased land with sea level rise? So we put into the act terms that will make it extraordinarily difficult for ambulatory claims on title to proceed. The surveyors manual has been amended accordingly. We felt that was a great accomplishment. It got through the New South Wales parliament. I do not know how, but it

did. It got through the parliament because it really does impact on property owners—about 50,000 in New South Wales—whose title is bordered by an ambulatory title; in other words, it moves with the tidal mark.

**Ms MARINO**—Or does not.

**Prof. Thom**—Yes. That has now been built into New South Wales legislation. No other state has it. New South Wales is a state that has most locations defining title by an ambulatory boundary.

**CHAIR**—We talked about the Venice effect this morning with Professor Woodroffe. I know you make reference to it in your submission.

**Mr ZAPPIA**—It is an issue that I am interested in. There are communities around the world that have adapted to living in low lying areas. Is it the case in your view that we should be changing our planning codes so that we do not get to that point or rather that there should be an equal degree of attention and focus given to adapting to the rising water level in areas that are already developed?

**Prof. Thom**—For those areas where we have the opportunity, the so-called greenfield areas, my view would be you plan for the worst. If this means that a person who owns that property cannot get a rezoning that suits their particular expectations, then so be it because, coming back to the liability, in those particular cases my understanding from the law is that there is no need for compensation because there have been decisions to have that zone to their benefit. They may wish it but they cannot. You use the planning system accordingly so that you plan out those areas as vulnerable areas. With respect to already developed areas—and now I am thinking about thousands and thousands of properties—we are not talking about small numbers. We are talking about large numbers. With respect to those, the information that may be available to them over the next few years about what could happen with a sea level rise of X at a rate of Y could be quite alarming. It would be particularly alarming to their insurance companies.

Because I have had discussions with the insurance companies about this and I hope you have too, you could be finding that insurance companies will say, ‘Hey, you are not covered.’ If your backyard progressively every spring tide twice a week gets a little flush of salt water over it—that is the Venice effect—and you start to lose your rose bushes or whatever, let alone go into the house, you would start saying: ‘Hey, this is going to affect my property value. Can I sell my property now under these conditions?’ Increasingly we will find the answer to that is: one, the insurance premiums will not cover this type of flooding; and, two, they will be less likely to sell their property at the prices they are already mortgaged to. In those particular areas there will be considerable disquiet. Members of parliament, state or federal, will be confronted with some angry people saying, ‘Why can’t I sell my property?’ This then becomes the impact of the Venice effect. We can manage it. There are mechanisms for managing this. As I say, local communities if they develop their own climate change adaptation plans will be forced to think about this.

Hard engineering solutions are possible. We have towns and cities in the world that are situated below sea level. We have a nation, the Netherlands, large tracts of which are below sea level. We can manage it but there is a cost. We may also manage it by deciding for those communities that the best way to handle this is to buy those people out now and have them

relocated. We have already had settlements on the New South Coast, the Sheltering Palms up past Byron Bay, bought out many years ago because of the threat of storm impact. We have gone down the track of removing settlements that have been at risk. Maitland was severely modified after the 1955 floods. We have mechanisms to do that but communities need to be confronted now with what their options potentially are.

**Ms MARINO**—Bought out by whom?

**CHAIR**—Were they bought out by the state government?

**Prof. Thom**—In the case of the one at Sheltering Palms, it was under the Coastal Land Protection Scheme following the 1974 storms. In the case of Maitland I think it was through the Public Works Department that the purchases were made. It was the state government that was doing the buying.

**Mr ZAPPIA**—In respect to a very specific location that we were discussing privately earlier, has there been any consideration of the effects of sea level rise on the lower lakes in South Australia?

**Prof. Thom**—My understanding up until a few months ago when a number of us through the Wentworth Group were asked to get involved by people in the South Australian government as well as by community people in the lower lakes that consideration of the lower lakes as an estuary and as an interface between the sea and the river had not really been a matter of concern or of interest. That is interesting because the South Australian government I think spent something like \$32 million over the last six years in keeping the mouth open through dredging. The intent was it would only dredge for one or two years. It now looks like it is going to be a perpetual dredging process. The barrages, as they are currently located to prevent saltwater from moving into the lower lakes, are of course fixed in position and are not easily raised. There would have to be major engineering works. It is my understanding that no consideration has been given for planning for their change other than the thought that they may be totally removed to allow the sea to actively move into the lower lakes and start forming a fairly saline environment which we hope would be met with water coming down the Murray, provided the upstream users of the water allow the water to come into the lower lakes, to create a viable, healthy estuarine situation and then sea level rise would be accommodated accordingly.

**Dr WASHER**—One of your comments that reflects on our committees and our systems I think is that you state in your submission that major difficulties arise when many recommendations of past (coastal) inquiries have not been acted upon by successive federal governments. Why do you think many of these report recommendations have not been taken up?

**Prof. Thom**—I challenge myself on this—

**Dr WASHER**—Be brutal, Bruce.

**Prof. Thom**—because I have been party to helping develop those recommendations with previous inquiries, particularly the first one in 1980 and to some extent the coastline one in 1991. Working with different governments and different bureaucracies, one of the things that I have been confronted with over the years and I am confronted with now is frequent change in those

within the agencies whether it is environment or whatever; they change. The people change. Prior to the Howard government coming in 1996 there was a strong group of individuals within the Department of Environment as it then was who were very keen on offering advice to government on the implementation of the RAC report of 1993. They were developing this in the appropriate bureaucratic way. Senator Faulkner, who was then the minister for environment I think in 1996 was accepting some of that advice, but of course the change of government caused a change in not only the attitude to that advice but the people who were involved in that agency who were developing and working on the briefs got moved to other areas. A lot of that momentum was then lost. I come back to so much depends on having the champions within the bureaucracy who feel that they can take on board the recommendations, whether it is the RAC recommendations or yours, or whatever, and being able to appropriately take those through the levels of the bureaucracy into the cabinet process that has meaning in the light of all the other complex issues that cabinet has been faced with at any given point in time.

As I said earlier, the coast is a very complex intersectoral, interagency issue. That did require the lead agency to do a lot of negotiation with other agencies. The current structure with the Department of Climate Change as the lead agency does give us an opportunity to take forward through the bureaucratic processes the advice that will come from submissions or your inquiry, or whatever, to a level that I hope will be much more successful than has been the case in the past.

**Ms MARINO**—You have basically touched on, and the inquiry examines, the catchment and planning models for South East Queensland, and the difference between that and New South Wales. Particularly given that I am from Western Australia, those types of models may not be relevant for Western Australia.

**Prof. Thom**—Can I take that one step further? This has happened since the inquiry and I am able to say this because of the discussions that have gone on. The Wentworth Group has developed its national environmental accounts model which came out of the 2020 summit. We had it on the shelf ready to go. After the 2020 summit the Prime Minister did make a recommendation that we should have national environmental accounts. That particular model has been taken through the bureaucratic processes. It has been discussed at length with Treasury and has been looked at as a national method of working with the regional NRM bodies. The application that we saw as used for water, as one of the environmental assets that we were concerned about in South East Queensland, was seen to trigger in our minds a report card methodology that would enable the Commonwealth, the states and the NRM bodies to determine where change is taking place to the conditions in the landscape or seascape, which we do not have the capacity to do at the moment. I chaired the national State of the Environment report for Minister Hill and Minister Kemp in 2001 and I saw all the positives but also all the negatives that came out of the national SoE process.

What we have now put forward to the Commonwealth and is being deliberated on; tomorrow in fact I am talking this over with the DAFF and DEWHA teams in Canberra about the rolling out of this model. There is a lot of interest now in how this model would work no matter where you are in Australia, for all the NRM regions. The reason I say that is to take up your point, we have a mechanism within the use of that model which is available on the Wentworth Group website that can be adapted to local regional conditions. What might apply in South East Queensland in terms of how it is rolled out may not necessarily be the case in, say, the wheat

lands of Western Australia. I recommend your consideration of that model in that broader environmental management context.

**CHAIR**—Just to conclude, is there a state whose coastal policies and practices stand out in your mind as best practice? Also, we are hearing from many local government authorities that they want ‘certainty’; how much more certainty do you think is required to enable coherent adaptation strategies to be put in place? What happens if for example the preparation of coastal zone management plans in New South Wales continues to be discretionary and what happens if the sea rise proposals are not underpinned by regulation or statute and are also left to councils to put in place? How much more certainty can the federal government deliver and is the problem that some states are kind of taking too much of a hands-off approach to this issue?

**Prof. Thom**—To answer the first question, it pains me to say this as a New South Welshman, but I do think Victoria probably has the best model. It has problems. Right now, this week a court case is occurring as a result of a local council at Port Fairy challenging in the courts the Victorian government position on a sea level benchmark, because Port Fairy council wants a development to occur in what is seen to be a vulnerable area. It is very interesting. I do not think it is called the Port Fairy council but whatever the council is, it is actually at Port Fairy that this is happening. It will be an interesting test because as I mentioned earlier Victoria, like New South Wales, does not have in its new coastal strategy the requirement for the explicit obligation to consider sea level change. It has a consideration provision but not an explicit obligation. South Australia probably is a bit better off in that respect than Victoria and New South Wales. The Yorke Peninsula case I think documented that in South Australia. The Victorian model has many advantages going for it and one of those is that they do have coastal boards and those coastal boards can bring court cases on and they have been determined to have standing in court, which is interesting. And they have a council, the Victorian Coastal Council.

In New South Wales we lost our coastal council in 2004 for various reasons. We have no mechanism in New South Wales at the moment except through cabinet of bringing together coordinated action. The release of the draft policy was a joint release between the Minister for Planning and the Minister for Environment and Climate Change, but there is a referral in that document to the Department of Planning to produce more guidelines. That comes to your second question: what will be in those guidelines that will give direction to strengthen the hands of local government to adopt the benchmark figures and to provide that level of certainty that councils have been seeking, and through coastal conference after coastal conference we have been hearing councils want that certainty.

The difficulty with a benchmark figure is what does that mean in probability terms. I do not want to go down that track but there are some technical issues about the use of benchmarks which require some consideration, but it is a great first step to have benchmarks. The failure of councils, whether it is New South Wales, Victoria or whatever, the failure of governments to take on that advice coming through from the Intergovernmental Panel on Climate Change, through government policies as we are seeing in Victoria and New South Wales and South Australia, then leaves them open to this liability because it could be shown in the courts that they have not followed in good faith the best information available to them. Then the liability question comes right back into the heart of local councils and it can be demonstrated—and I would probably be one of the first people allowed in the court to try to demonstrate it—that they have been negligent and they are creating negligent situations—

**CHAIR**—So explicit obligations might strengthen the position of local governments vis-a-vis liability issues?

**Prof. Thom**—My argument is that it would. I am not a QC—

**CHAIR**—But we should seek some advice along those lines.

**Prof. Thom**—I think you should seek some advice on that, but the advice that I have seen from the partner at Baker and McKenzie's is that would assist.

**CHAIR**—Thank you very much. We could go on for another two hours but time is limited. I would be particularly interested if you would like to stay because we do have an individual appearing with matters relating to liability as a kind of example of some of the complexities of the issue. Thank you very much on behalf of the committee for attending the hearing today and I know that we will maintain contact until such time as we are ready to write our report. We thank you for your ongoing interest and helpful advice.

[2.18 pm]

**KEYS, Mr Ross, Private capacity**

**CHAIR**—I welcome to this public hearing Mr Ross Keys, who appears before us consequent to a letter that we received from Mr Rob Oakeshott, Mr Keys's federal member. Although we were not in a position to resolve Mr Keys's problem we thought it would be of interest and importance for him to attend to tell the committee of his concerns. I would point out to you that you are not required to give evidence under oath but I should advise you the hearings are legal proceedings of parliament and warrant the same respect as proceedings of the house itself. In that regard the giving of false or misleading evidence is a serious matter and may be regarded as a contempt of parliament. We do have the correspondence that was forwarded on from Mr Oakeshott but would you like to make some opening remarks about the matters of concern to you?

**Mr Keys**—I am not really great at speeches—

**CHAIR**—That is all right.

**Mr Keys**—I have written something down. Whether it is relevant, because I know I am an individual and I know that you cannot help individuals, it just more or less sets out the story line and what has happened to me and my family basically since we have owned there.

**CHAIR**—We do have your written statement.

**Mr Keys**—My concerns are not just for myself but for all coastal residents who may face this in the future. If how our situation has been handled so far is to be a benchmark, basically it is embarrassing. It is just not acceptable. The failure to accept any sort of responsibility is just not acceptable for those involved. In our particular circumstance the fact that forward planning for this exact event was undertaken by council and state government is now irrelevant because new regulations can seemingly be implemented at any time with no regard for accountability to the property owners that are affected by the loss of their home, the loss of their lifestyle or in our case as well massive financial losses. It is not just the home that in our circumstance is part of this story, it is the events that have followed that are basically unacceptable for any family to endure. It really needs someone to address it so that it does not happen again. Whether that is in your jurisdiction, or how it is played down from federal to state to local council, I do not know.

We had a 100-year impact line that was configured by the state government Public Works Department. That coincided with a 1990 policy from council. They implemented that. In 2001 we purchased our properties. There were no signs of any erosion. In 2002 minor erosion started. In 2003 we took the view that it was going to become an issue on our place. We applied for subdivision on our property. At that stage council insisted that two building envelopes be made available 40 metres to the rear of our homes to rebuild in line with other development, keeping in mind that we are in the middle of development; there is development to the north and to the south. They did that to keep in line with their own policy and to give us basically peace of mind. It is a safety net for us to rebuild our homes in case of this exact scenario. On 14 June last year

we had the highest tide in 22 years at Old Bar. I think it was a four metre swell on a six metre tide. It took close on six metres of lawn in four hours. It was frightening. Two weeks after that I was served notice by the council to demolish which I abided by. I demolished my homes believing that we had a valid consent, that we could rebuild as they have put in writing to us; that was where our homes were supposed to go. From then on it has basically been a nightmare for us.

When it became apparent that the erosion was making its way towards our homes in 2008, council decided to reassess their coastal management plan with a view to moving that 100-year impact line. We had consents that were valid well before that date. No notification was given to any of the residents as to the implications of that study or whether the two most likely affected residents, which were myself and my neighbour whose homes were lost, were given any indication as to the potential to refuse existing or defer any new development consents. I was told last week by council that that study that they are undertaking is still around two years away from finalisation, as in rezoning where it goes to. What do I do for the next two years is my point? I have lost my homes but council has now said, 'Well, you have lost your homes. You have put in an application to rebuild those homes. Even though we have said that is where you are supposed to build those homes, we are going to defer it.'

So what do I do for two years? Who pays my mortgage? I am like everyone else. I have got a mortgage. It is not as if we are extremely wealthy. We are battling. I do not know what we are supposed to do or where we are supposed to go. We came up with a range of proposals to basically appease the council. That is not accepted. They are now just taking the view that a new study is being undertaken and even though their current policy and the current Public Works Department line and the actual erosion on the ground is still working—it is still in line with their original assessments—because they have decided to undertake a new assessment they just defer everything. Where does that leave me? It is well and good for other people to be able to go home. But this is not an issue that is going to happen; this has happened to my family.

In our particular case at Old Bar the state government and local council have been aware of the erosion issues in that particular piece of coastline since the 1940s. They have been quite happy to collect my land taxes. In fact, as of last week they are still ringing me and harassing me for land tax, saying that I have got a valuation on the property. If you cannot rebuild, what is it worth, really—nothing. Everyone still keeps putting their hand out. They have been quite happy to allow development in the last 50 years; quite happy to allow subdivision; allow developers in; allow unit developments, but as soon as something happened that they have planned for, everyone has run away. They have just gone: no responsibility; not my problem. All along I have played by the rules and believed that there was a policy in place. It is still current. It was implemented by a government department, local and state, and as soon as something goes wrong I have to hold the ball. Nobody else wants to know about it.

We have now paid out close on \$300,000 just trying to chase and appease the council, when all along we still have valid consents. They will just not comply with them. To every proposal we put forward the response is: it is going to be deferred; it is going to be deferred. That is okay if you are still sitting at home in your lounge room watching your television. We are not. We are not there. It is just not fair. How can no-one be accountable for that? It is just not about us. This is my story but if this is going to be such a big problem then surely there have to be some guidelines where everyone is in the same category, where landowners are made completely

aware at time of purchase of whose liability it is going to be; what responsibility is going to be accepted by government or if it is up to the landowners themselves because then values on that land obviously apply accordingly.

We contacted both state and federal governments regarding any sort of assistance, keeping in mind that we have had to pay to demolish our own homes. Because it was not declared a natural disaster by council, the best that we are told we are eligible for is welfare payments. Upon contacting welfare the first thing they do is say, 'What is the valuation on your house?' Then it is: bang, no, you are not entitled to welfare. So you are gone anyway. You cannot get anything there. We have contacted the state government, too. They responded only four weeks ago, which is six months from the time of contact through our local member and after we were passed through four different departments. That is not exactly an urgent response to a family that has been through what our family has been through.

We have basically been emotionally and financially ruined. What have we done wrong? We have done nothing wrong. It is now eight months since we lost our homes. My 14-year-old son and I are living in a revamped double garage to this day. My 17-year-old daughter is studying for her HSC in a caravan about 25 metres away from our garage because there is just not enough room for her inside. How can that be allowed? Yet all we receive from council are pats on the back: we feel for you, but they do not do anything. They just do not do a thing.

If we have current policies in place and it is forward planned, when does it become an issue for which someone is accountable? I just cannot see where there is any commonsense in this. No help whatsoever has been given. There is no assistance. If we were in a bushfire zone or a cyclone or a storm area there is assistance. Manning Valley only three or four weeks ago was declared a natural disaster because of flooding. If fences go down, someone pays and they go back up. We are coastal victims. Where is our assistance?

Basically we have abided by every rule from the time of purchase. We have done nothing wrong and now we are being punished for it. We have nowhere to turn. The reason I am appearing today is—as I said, I know that you cannot help individuals—that it is not just about us, it is about what is going to happen? If this is such a big issue, and the federal government is saying it is going to be a huge issue, there has to be some clarity. Thank you.

**CHAIR**—Thank you for telling us your story and for appearing before us. We have read about your particular circumstance. It is an issue and over the last couple of days in particular we have focused a lot on liability issues. It will be a growing issue and we have just discussed some of those issues with Professor Thom before you arrived. I take it that in the midst of all this you have sought your own independent legal advice about these issues?

**Mr Keys**—Yes.

**CHAIR**—What direction is that pointing you in?

**Mr Keys**—That is what it all comes back to. How long do we go for and how far do we go? Everything we do costs us money. It just comes back to: do you get bled dry? When do you sort of cut and run? We paid \$1.5 million for both properties in 2001. We cannot sell. There is just no way in the world anyone will touch it. Basically we have no way to service our mortgage, which

is very large. Our valuations have dropped by half. There is just no legal recourse that we can see that is going to help us out because at this stage from what we know is that councils can implement whatever they like but they are not accountable. As in our case exactly half way through the game even though they have legal consents they just turn around and say, 'No, it does not matter anymore. We are not going to honour that.'

Our choice is to put in a development application, have it deferred and take them to the Land and Environment Court. That is our choice. How much money do you have? How far do you chase it? As we have seen—you would be more than well aware—the same goes with the Land and Environment Court. There is no consistency. If you go there it is just a gamble. You just do not know. As far as legal matters go, we are still pursuing it but we have come to the point where do we just walk away and let the bank take it. Then where does that leave us? Does the bank then get it and in two years time if everything is fine and rosy and peachy, 'We are going to put these instruments in place', and the bank or whoever owns it then gets the benefit. What about us? What about us now? This is not going to happen to people; this has happened to us. We are still living through this.

**Ms MARINO**—I just thought I would ask how you were treated by your insurance company and what assistance they have been to you?

**Mr Keys**—Nil coverage. See clause 34: anything from the sea, nothing at all. Both were insured through the NRMA; no coverage; nothing at all. No help with demolition. Demolition is not part of it. That is all there is to it. We have not received a cent off anyone. As I said, we are not welfare cases but by the same token I have still got to try and find money to feed my family. When I receive a letter from federal government to go back to the department of community services, or whoever, the first thing they do is means test you. How do you put a value on something that is possibly going to be rezoned or does not have any value? No-one is going to come near the place. We are well aware of that. We are sort of stuck in that time warp for two years until this is resolved. We do not have two years of mortgage payments left. We just do not know where to turn. Where do we go?

As I said, if you have got forward planning and that could be for the people in 10 years, that is fine. They are covered. We believed we had forward planning and were covered. We were the ones that took the option of subdividing and then council specifically told us as a condition of consent that we had to allow two building envelopes behind the homes because they knew there was a problem in that area with coastal erosion. It happens. 'Oops, no, we cannot do that now. We do not want you to. Come up with some other options.' They are not going to pay for it. We pay for everything. If we continue to pay, 'No, we cannot allow that. No, we are going to defer that.' It just goes on and on and on. It is just a merry-go-round where we have got to say, 'Enough is enough. What do we do?' Unfortunately this is the first place where I have had a voice. No-one else wants to listen. The state government just does not want to know about it. No-one wants the responsibility.

**CHAIR**—You certainly have a voice before the committee but at the moment I guess you would appreciate that the solution to the problem that you have raised is not within our means to be able to resolve, but we are very happy to hear your story because it is going to be typical of other people's stories as time goes on with the impacts of climate change.

**Mr Keys**—I would be happy if I could get what I have in place. This would have saved us hundreds of thousands of dollars and I would have been able to move on with my life, the same for my kids. But when you have got something in place and then you are told, ‘No, you cannot do it.’ How can no-one be accountable for that? How can you just be left there? That is not right.

**CHAIR**—Thank you very much for appearing before us today. I will talk further with Mr Oakeshott about the progress of this inquiry. All I can say is thank you for making the effort to come and tell your story. We will send you a copy of the transcript for any corrections that need to be made and let us hope that in the recommendations that go to the federal parliament at the end of our report we will of course raise these issues relating to legal liability because it is going to be a growing issue.

[2.35 pm]

**BROOKE, Ms Victoria Jane, Member, Climate Action Newcastle Inc.**

**BRAY, Ms Frances Beryl, President, Lake Wollumboola Protection Association Inc**

**CHAIR**—Welcome to this public hearing. Although the committee does not require you to give evidence under oath I should advise you that the hearings are legal proceedings of the parliament and warrant the same respect as proceedings of the house itself. In that regard the giving of false or misleading evidence is a serious matter and may be regarded as a contempt of parliament. The committee has received both your submissions and they have been authorised for publication. We would now like to invite you to make a brief statement before we proceed to questions.

**Ms Bray**—The Lake Wollumboola submission reflects the concerns of members together with my previous experience as head of the National Standards Branch of the National Occupational Health and Safety Commission. I am presenting several photos of Lake Wollumboola which I will refer to during the submission. I do not know whether you have them. The Lake Wollumboola Protection Association is a community environment group aiming to protect Lake Wollumboola. The lake is located at Culburra Beach south east of Nowra on the New South Wales south coast. Our submission is about the threats to the natural coastal environment brought about by overdevelopment and climate change. We are concerned that governments and regional communities appear not to appreciate the scale of these threats and are not responding quickly enough to the evidence of significant deterioration through overdevelopment and unsustainable land use and to the dire predictions of the escalating pace and impacts of climate change.

We see little evidence of the application of ESD principles, particularly the precautionary principle. Major developments continue to be approved in sensitive coastal sites on the New South Wales south coast even though the South Coast Regional Strategy states that new urban development would be prohibited on coastal land assessed as high conservation value and that no new towns or villages would be permitted. The strategy also requires that development would be constrained in areas subject to climate change risks. However, developers have taken advantage of a clause that allows urban development in exceptional circumstances. The result for the Jervis Bay-St Georges Basin region is three major development proposals. These developments are all located in high biodiversity habitat corridors and they will all impact on the water quality of the bay and basin.

I will now turn to Lake Wollumboola itself. Lake Wollumboola is north of Jervis Bay. It is one of the sites most susceptible to disturbance from urban pollution because the lake is closed off from the sea for long periods. It is also highly sensitive to sea level rise, being separated from the sea by a low sandbar as can be seen from the aerial photo I have given you. Lake Wollumboola is a wetland of national importance, a JAMBA and CAMBA site and part of the Jervis Bay National Park. It is under consideration as a Ramsar wetland. However, despite these values massive urban development remains a threat. The north-west area of the lake catchment, with two important tributaries and the important Crookhaven River catchment, are currently zoned for

approximately 3,000 housing blocks. The area is indicated on the aerial photo. The New South Wales government has done much since 1996 to prevent the development of that site proceeding. However, the area is still zoned for urban development.

The minister for planning has made a commitment as part of the South Coast Regional Strategy that the Lake Wollumboola part of this area would be rezoned for conservation as future national park or nature reserve in exchange for approval of limited development in the Crookhaven catchment. We are concerned that these recommendations may be watered down.

If current policies and legislation and administration are so limited in their capacity to protect sensitive coastal environments such as these from overdevelopment we believe they are unlikely to have the capacity to minimise the impacts of potentially catastrophic climate change. In Lake Wollumboola's case the impacts of such changes would be to do with sea level rise. With increased storms causing erosion and inundation of beaches, dunes and headlands of the region, the reefs, wetlands and estuaries will all be significantly modified or lost altogether. Changes in temperature and rainfall patterns and in bushfire regimes will fundamentally change the biodiversity of coastal catchments. Intermittently closing and opening lakes, like Lake Wollumboola, and the ecosystems and species they support are especially vulnerable. The endangered migratory little tern and the hooded plover which nest on selected beaches are threatened with extinction. You can see the results of the king tides and storms this summer on the Lake Wollumboola sandbar and the devastation to the little tern nests.

Coastal formations and species must not be restricted by development. Beaches must be given room to move landward and to adapt to sea level rise as they have in the past. Threatened ecosystems and species must be protected by landscape scale reserves to enable them to adapt and migrate. We urge the committee to affirm the gravity of the situation and to recommend to Australian and state and territory governments that they act with utmost urgency. We seek national leadership and guidance to protect to the maximum extent possible these precious coastal environments and to assist coastal communities in understanding the risks of climate change and responding to the opportunities.

We support the development of a national coastal policy and strategy lead by a national coastal commission or other high level body. We have detailed the aims of such a policy and strategy in our submission. We would also urge you to consider that a national commission could drive policy and coordinate and prioritise implementation. The model we have suggested is based on the model of the national Occupational Health and Safety Commission which developed national occupational health and safety standards which were incorporated into state and territory legislation and continue to be the basis of occupational health and safety in all states and territories today. We believe that the responsibilities for a national coastal body would be nationally consistent standards aiming to achieve an ecologically healthy coastal system and maintaining and improving biodiversity to the extent possible with adaptation to climate change.

We also recommend the development and funding of a national climate change strategy to promote consistent approaches. The priorities for that strategy would be nationally consistent standards for issues like defining the application of ESD principles and climate change, regional strategies and how they might integrate environment protection with other land use categories, a zoning category to prevent development in high conservation value catchments such as intermittently closing and opening lakes and lagoons, and a mandatory application of coastal

setbacks because of sea level rise not only to prevent development being impacted by sea level rise but also for the protection of coastal biodiversity.

With regard to conservation we believe that national action is really very important. We think that there should be an expansion of protected habitat corridors on a landscape scale to conserve entire threatened ecosystems and to facilitate connectivity of habitat and migration and adaptation of species. Expanding the national reserve system through a special fund is absolutely critical. From what I can see the current priorities for the national reserve system do not take into account the sensitivity of the coastal environment to climate change and sea level rise. We strongly recommend that there be categories included in priorities for the national reserve system to fund the acquisition of high conservation value coastal lands that are particularly exposed to sea level impacts.

**CHAIR**—Is there much to go?

**Ms Bray**—Community education is the other issue that I wanted to raise.

**CHAIR**—I am just mindful of the time.

**Ms Brooke**—Thank you very much for the invitation to expand on points made in Climate Action Newcastle's submission to the inquiry. Addressing climate change has to be the Australian government's highest priority in order to mitigate unavoidable impacts such as rising sea levels, wild and unpredictable weather events, increasing drought and high temperatures. Adapting to climate change does not deal with its causes and adaptation plans must include strategies to mitigate our impact on the environment. Government modelling shows positive economic impact benefits in a low pollution future.

Climate Action Newcastle argues for much higher targets on greenhouse gas emissions than those presently proposed by the Australian government. We are also pressing for 100 per cent renewable energy by 2020. By adopting higher targets the Australian government can take its place in world climate change negotiations to bring climate change within control before mid-century.

Our coastlines are vulnerable from rising sea levels due to rapid melting of the Greenland and the east and west Antarctic ice sheets. Combined with growing emissions from melting permafrost, indications are that there will be a global sea level rise of five metres by 2100, or I should say at least five metres; the modelling keeps on going up. Global temperatures will continue to rise with a potential loss of all summer Arctic ice by 2100 which, in time, will initiate regional warming of five degrees and global rise of 0.3 degrees as light reflective ice is replaced by heat absorbing dark seas. Eminent climate scientist Dr James Hansen says a safe climate cannot exist without sea ice. Dangerous feedback loops accelerate the effects of climate change and changes are happening two to three times faster than predicted by the Intergovernmental Panel on Climate Change, IPCC.

Environmental impacts from unchecked climate change on coastal communities include flooding of low lying areas, and they would include estuaries and other significant environmental features; water shortages due to low coastal—

**CHAIR**—I am sorry to interrupt you. We do have a good handle from your written submission about those impacts. Could you go onto the section where you recommend what you believe the committee should be doing?

**Ms Brooke**—I do have some demands on climate change because, as I have just said, without bringing climate change under control all these other things just are not going to happen.

**CHAIR**—Absolutely. But in terms of the list that you were reading out about the impacts—

**Ms Brooke**—Okay. I will leave that.

**CHAIR**—Could you go onto the recommendations?

**Ms Brooke**—Certainly. What we are asking through you please is to seek a reduction in greenhouse gas emissions of at least 20 to 40 per cent by 2020, in line with the recommendations of the IPCC and the agreed negotiated range for developing countries. Given the speed at which the climate system is responding and the rate at which greenhouse gas emissions are increasing, these targets may be unsatisfactory. But even a 20 to 40 per cent target range is a significant improvement on the ineffective five per cent target in the Carbon Pollution Reduction Scheme draft legislation. There should be no free permits to any polluter, large or small. We are also pressing for strong government incentives to build an Australian renewable energy industry to deliver most of our energy needs, with a target of 100 per cent renewable energy by 2020. The Australian government must ban new coal-fired power stations, new coal exploration licences, new coal mines and expansion to existing mines as well as phasing out coal exports. As I have said, Australia should take a leadership role as a serious global climate change player in the run-up to the United Nations climate change conference in Copenhagen in December through its realistic targets to combat climate change.

I would just like to mention Newcastle's role in climate change because we are obviously from Newcastle. We are a coastal port—

**CHAIR**—While I am interested in the position of your group about those issues, they do not directly relate to the terms of reference that we are being asked to recommend. I know it is the bigger picture about mitigation, but do you have some points that you would like to press within the terms of reference? That would be useful in the time we have got.

**Ms Brooke**—I would press the Australian government to allocate more money to implement solar initiatives rather than put the money into research such as was announced with the \$100 million to build an Australian solar institute in the Hunter. These kinds of initiatives are actually essential if we are to move forward from our fossil fuel based economy.

Expanding on the recommendations that we have made, we recommend the creation of a national body for the strategic management of vulnerable coastlines. The first task of this national body should be to recommend preventative legislation to address climate change before legislation for local environment protection is put into effect. Strategies for this national body could include planning for population growth in coastal areas, with implications for immigration; ways of managing new development applications; and coastal housing issues—and that resonates with the gentlemen that we have just heard from—including compensation for

land loss and relocation of industries in water affected areas. What we are saying is that we are looking at a national body to start taking an overriding view of the issues that seem to bedevil our local government.

The second point we made was pushing for mitigation for adaptation and, as an example, with 18 years of mitigation well established for its renewable energy initiatives which produce more than 30 per cent of its energy needs, Germany recently addressed adaptation to climate change by allocating 600 million Euros funding for a sea wall for Hamburg. The economic benefits in mitigation have been modelled by Treasury and economists show that economic prosperity improves in a low pollution future. Even ambitious emission reduction goals have little impact on growth in Australia's economy and on household incomes. This is good news for coastal communities, where the bulk of the Australian population lives and works in a variety of industries and businesses. It has certainly strengthened the case for stronger targets to reduce climate change impacts.

We also recommend direct community involvement in campaigns for water and energy efficiency and we cite the Transition Towns movement as a model for coastal communities to become self-reliant and build resilience in the face of external shocks triggered by climate change. The concept of localism is highly adaptable to coastal communities. I would like to table a copy of *The Transition Handbook* for the committee's information. It has just been released; it is the Australian and New Zealand edition. I think you will find it very interesting reading. We also recommend state and local governments increase inter and intra urban public transport and coastal cycleways while we submit that the Australian government should deliver a national cycleways plan.

In conclusion, as a community group we are very concerned at the slow and inadequate responses of the Australian government to climate change, a global threat which will impact not only on our coastal communities but also the entire country. The recent Victorian bushfires are a grim foretaste of what the Australian environment, including our coastal regions, could become in the not-too-distant future where we suffer the loss of whole communities, stark degraded landscapes, low rainfall, water shortages and searingly hot temperatures.

Could I just add something that is perhaps not fully understood, in that we talk about sea level rise as if that is going to be the first thing that happens to the coastline. Before the sea levels rise there will actually be contamination of ground water through seepage of saltwater into fresh water. That will add to the low rainfall that will be experienced by coastlines in climate change. That is incredibly important. There will actually be drought on the coast as well as food shortages.

I would like to remind you that Professor Ross Garnaut left us these chilling words in his report delivered to the Australian government last year, in September 2008: failure to deal with climate change now will 'haunt humanity until the end of time' and 'strong mitigation, with Australia playing its proportionate part, is in Australia's interests'.

To mitigate climate change impacts on coastal communities and elsewhere we submit that effective climate change measures ahead of standalone financial and economic considerations must be the first priority of the Australian government's policy planning and decision making now.

May I also leave you with this copy of *Climate Code Red* because I actually got some of my information from that? That is also excellent and very sobering reading.

**CHAIR**—Just in relation to some issues that you raised about your region, Ms Bray, I thought from the advice given by the Environmental Defenders Office that particularly vulnerable coastal areas cannot be overridden by the state minister, who would have to act in accordance with the local LEP. Does your local LEP identify those areas as high conservation value areas?

**Ms Bray**—No. In terms of the revision of the local LEP, instead of it being a completely new document it is mainly an administrative transfer, so I would not expect that the new Shoalhaven LEP will ensure that those sensitive coastal locations are all zoned so that development is excluded.

**CHAIR**—Do you have a right of appeal if it does not in your view properly recognise the conservation value of your area that you have referred to?

**Ms Bray**—My understanding is no. There have been changes to merit appeals in New South Wales because of the major projects SEPP, but I am not an expert in that area.

**CHAIR**—If you do not get satisfaction there I think it may well be a case where the federal government under the EPBC Act could have some role to play. I think it would probably be advisable for you to—

**Dr WASHER**—You could apply for Ramsar wetland—

**Ms Bray**—In the case of Lake Wollumboola there is a case for a development to be—

**CHAIR**—You are talking about around the lake; aren't you?

**Ms Bray**—Yes. The case for a development to be prevented would be stronger if the lake were listed as a Ramsar wetland. It meets five of the nine criteria but at this stage there may be a case on the basis of some nationally listed threatened species in the catchment—

**CHAIR**—Have you made any inquiries of the federal department to see whether there are any areas that are currently listed?

**Ms Bray**—I certainly know that green and golden bell frogs is one species.

**CHAIR**—If you cannot get satisfaction through the LEP there, you should start making inquiries of the federal department. In terms of the listing of the site as a Ramsar wetland, does the first hurdle happen at the state level or does it go straight to—

**Ms Bray**—Yes, the first hurdle is at the state level. Lake Wollumboola has been assessed with assistance from the Commonwealth to undertake the ecological character description, but it is basically up to the New South Wales government to proceed with the recommendation to the Commonwealth. There is a communication strategy under development. It would be great if that could be progressed, but it does also depend on consultation, appropriately, with the local Aboriginal community.

**CHAIR**—I know that in situations like yours in different states you can seek the advice of the Environmental Defenders Office, and I think that might be worth getting some advice about how we might progress the listing of that. But we have your comments on the public record and we will be watching with interest the developments there. And Ms Brooke, I wish your community group all the best in your endeavours too. Carbon pollution reduction is a big issue. The legislation will be coming into the parliament in the not-too-distant future and we are all of course keen to ensure that Australia does move in a sustainable way to a less carbon intensive economy and society. We do thank you both for the time you have taken to write and appear before us.

**Ms Bray**—Thank you very much and we wish you well with your deliberations.

**Ms Brooke**—I would just point out that climate change is everybody's problem, not just community groups.

**CHAIR**—Thank you both for attending the hearing today. The secretariat will send you a copy of the transcript for any corrections that need to be made.

Resolved (on motion by **Dr Washer**, seconded by **Ms Marino**):

That this committee authorises publication of the transcript of the evidence given before it at public hearing this day.

**CHAIR**—In finishing off, I thank the Hansard staff for sitting through a pretty hectic two days of submission taking. I also thank the staff and other participants. I declare this public hearing closed.

**Committee adjourned at 3.00 pm**